IC-1 to AFI 21-101 ANG Supplement, *Aircraft and Equipment Maintenance Management*

1*2 NOVEMBER 2009*

**SUMMARY OF CHANGES*

This interim change implements new guidelines that clarify requirements for management of Aircraft and Equipment Maintenance, corrects errors and clarifies time period requirements. A margin bar indicates newly revised material.

1.10.1. (Added) QA will review all OI's every two years for accuracy, intent and necessity. AF form 673 will be used to document this review. Quality Assurance is the OPR and will designate a POC for each unit supplement/OI. The POC is solely responsible for coordinating with the appropriate organizations. The POC will resolve all critical comments prior to submission to QA for publication. QA is responsible for the accuracy, currency and integrity of the contents and for compliance with the publication. Wing/Group Information Management functions have the responsibility for format, publication and distribution (paper or electronic) for unit supplements/OI's.

2.6.1. (Added) Supervisor's will ensure the below listed items are documented on the AF IMT 55 if they apply to the work center. Training and documentation is only required for the affected employee and the supervisor.

10.2.1.8. (Added) PPE will be marked with first initial of first name, last name, and Employee Number. Equipment previously identified with last name and SSAN number do not need to be re-etched or replaced solely to comply with new marking requirements.

*14.22.3.2. N/A to the ANG. The following only applies to the ANG. When an aircraft becomes a Category 2 Hangar Queen, assign a SNCO or officer to manage the Hangar Queen. The MXG/CC or designated representative must approve any further CANN's, transfer, and diversion actions from the Hangar Queen aircraft. Brief aircraft maintenance and supply status at the wing standup meeting. ANG Hangar Queen Category 1, 2, 3 will be reported in GO81 in Remarks Top line of screen 9018 and in IMDS Screen 333 narrative with HQ2 or HQ3 followed by reason, example: HQ2 Phase, HQ3 ISO, etc. Hanger Queen 1 is managed at the unit level.

*14.22.3.3. N/A to the ANG. The following only applies to the ANG. Brief aircraft maintenance and supply status at the wing standup meeting. ANG Hangar Queen Category 1, 2, 3 will be reported in GO81 in Remarks Top line of screen 9018 and IMDS Screen 333 narrative with HQ2 or HQ3 followed by reason, example: HQ2 Phase, HQ3 ISO, etc. Hanger Queen 1 is managed at the unit level.

14.33.6.4. (Added) Ensure an additional Red Dash entry is made in the aircraft forms when the MCD has been submitted for analysis.

*14.34.1. The QA office will oversee the MXG Self Inspection Program, but it will be implemented by all Element/Workcenter Supervisors, Superintendents, and Commanders as

directed by the applicable MSEP OI. ANG Units will utilize the Interim Access Self Inspection database located on NGB/A4Q CoP https://wwwd.my.af.mil/afknprod/ASPs/CoP/OpenCoP.asp?Filter=AN-LG-00-05 until release of Web enabled Program (due to be released in Jan of 2010) to implement their MXG Self Inspection Program. ANG QA offices should refer all questions concerning this database to NGB/A4Q. As a minimum this must be accomplished annually.

14.35.3. (Added) ANG will attend Senior Leader Maintenance Course (SLMC). Class information is located at the following URL. https://etca.randolph.af.mil/default1.asp (Key words "Senior Leader Maintenance Course"). Formal requests must be made through the Base Education and Training Office.

BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 21-101

29 JUNE 2006

AIR NATIONAL GUARD
Supplement

14 APRIL 2008

Maintenance

AIRCRAFT AND EQUIPMENT
MAINTENANCE MANAGEMENT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: This publication is available on the e-Publishing website at **www.e-publishing.af.mil**.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ USAF/A4MM

Certified by: HQ USAF/A4M
(Brig Gen P. David Gillett)

Supersedes AFI 21-101, 1 June 2004

Pages: 550

(ANG)

OPR: NGB/A4MM

Certified by: NGB/A4 (Col Howard)

Supersedes AFI21-101_ANGSUP1,
10 September 2004

Pages: 82

This instruction implements AFPD 21-1, *Air and Space Maintenance.* It is the basic Air Force directive for aircraft and equipment maintenance management. It provides the minimum essential guidance and procedures for safely and effectively maintaining, servicing, and repairing aircraft and support equipment. It acknowledges the foundational contributions made to Agile Combat Support (ACS) capabilities of Generating the Mission, and Supporting and Sustaining the Mission, Forces, and Infrastructure. It applies to all major commands (MAJCOMs), including the Air Force Reserve Command (AFRC) and the Air National Guard (ANG), along with their subordinates. The Air National Guard is a MAJCOM for the purpose of this instruction. Organizational structures may differ in the Air Reserve Component (ARC). In these instances, responsibilities will be assigned to the appropriate functional area. Waiver authority for this instruction is HQ USAF/A4M. For questions on interpreting this instruction, first contact your MAJCOM maintenance policy activity. MAJCOMs supplementing this instruction must coordinate their supplements with HQ USAF/A4M and will follow guidance in Air Force Instruction (AFI) 33-360, *Publication Management Program*. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with the AFMAN 37-123 (will become AFMAN 33-363), Management of Records and disposed of in accordance with the *Air Force Records Disposition Schedule* located at **https://afrims.amc.af.mil/**. Maintain and dispose of records created as a result of prescribed processes in accordance with *Air Force Records Disposition Schedule* located at **https://afrims.amc.af.mil/**.

(ANG) Air Force Instruction **(AFI) 21-101**, *Aircraft and Equipment Maintenance Management*, 29 June 2006, is supplemented as follows. This supplement has been approved by Headquarters, United States Air Force, Directorate of Maintenance/Maintenance Management Division (HQ USAF/A4MM) and clarifies Aerospace Equipment Maintenance Management for all Air National Guard (ANG) flying units. This instruction applies to all ANG organizations and personnel during non-federalized periods that maintain aircraft, aircraft systems, equipment, support equipment, and components regardless of AFSC and is applicable during all technician and military duty periods. It is applicable to both the Maintenance and Operations Groups. Local managers must effectively use their resources to ensure successful mission accomplishment. Managers may use any maintenance management procedure not specifically prohibited by this instruction, other maintenance publications, or technical orders. Units must publish either a single supplement and/or OIs for local policies mandated by the AFI and this supplement. HQ USAF/A4MM with coordination of NGB Policies and Procedures (NGB/A4MM) shall be the final approving authority for all deviations to established maintenance practices. Waivers may be requested via e-mail, message, or letter to NGB/A4MM. At unit level, the Maintenance Group Commander (MXG/CC) or designated representative is responsible for all matters affecting maintenance. This instruction recognizes that command authority is exercised by the State Adjutants General. The National Guard Bureau (NGB) provides policy and management guidance.

SUMMARY OF CHANGES

This publication has been substantially revised and must be reviewed in its entirety. This revision clarifies policy and corrects errors in the June 2004 edition. This version also specifically includes certain organizations within AFMC that were excluded in previous versions. Specific sections within chapters will be marked as applicable to the Combat Wing Organization (CWO), which denotes the typical wing and group structures that fly and maintain aircraft. Other sections will apply only to AFMC Air Logistics Centers (ALC) and the Aircraft Maintenance and Regeneration Center (AMARC) and will be identified as "ALC/AMARC." This term includes Oklahoma City ALC, Ogden ALC, Warner-Robins ALC, and AMARC. Sections specific to ALC/AMARC are contained in **Chapter 1**, **Chapter 2**, **Chapter 8**, **Chapter 9**, **Chapter 10**, **Chapter 14,** and **Chapter 17** of this instruction. If in doubt as to which section applies, MAJCOMs will obtain determination/waiver from HQ USAF/A4M. Chapters in this revision have been consolidated and renumbered, where appropriate, to enhance readability. The Maintenance Operations Center guidance has been incorporated into the new **Chapter 6**, Maintenance Operations Squadron. **Chapter 7**, Documenting Maintenance, and **Chapter 12**, Keep Enlisted Experience Program (KEEP) and an Aircraft Grounding policy for material defects have been incorporated into the new **Chapter 14**, Additional Maintenance Requirements and Programs. New chapters on Centralized Intermediate Repair Facility (**Chapter 16**) and Logistics Contract Management (**Chapter 17**) have been added to address policy gaps and emerging maintenance concepts. At the squadron level, the terms Maintenance Operations Officer and NCOIC have been replaced by Operations Officer and Maintenance Superintendent, respectively. The term System Program Manager is used to represent AFMC activities responsible for program management/sustainment functions. KEEP milestones have been revised to reduce program administration while maintaining program intent. Safety has been moved to **Chapter 2** to highlight the importance of this program and mindset while performing the inherently dangerous maintenance mission.

(ANG) This document is substantially revised and must be completely reviewed.

Chapter 1

MANAGEMENT PHILOSOPHY AND POLICY

1.1. Introduction. This instruction prescribes basic aircraft and equipment maintenance policy and procedures used throughout the USAF, and provides senior leadership and management direction for the accomplishment of the mission. Local managers are expected to effectively use the resources assigned to ensure successful mission accomplishment. Maintenance resources (personnel, materiel, equipment, and information) make up the essential capabilities required to generate mission elements, and support and sustain mission systems, components, and equipment in both peacetime and wartime environments. Managers may use additional maintenance management procedures not specifically prohibited by this instruction, technical order (TO) or other applicable maintenance instruction. Innovation is encouraged; however, any conflict with this guidance is prohibited without MAJCOM review and HQ USAF/A4M waiver/variance approval. This instruction supports the Air Force (AF) Core Values and its application to maintenance professionals: Integrity - do the job right the first time; Service - mission accomplishment over personal gain; Excellence - put forth the best possible effort all the time. HQ USAF/A4M oversees maintenance at all levels, from the maintainers on the flightline and in the support shops through the depot technicians/engineers in AFMC. The MAJCOM maintenance function sets management policy for all maintainers within their MAJCOM. MAJCOMs determine applicability for non-standard maintenance organizations (e.g., AFIA, AFRL, AEDC, AMOG)

1.1. (ANG) The ANG Aircraft Maintenance Division (NGB/A4M) sets management policy for all maintainers within the ANG.

1.2. Organization. AF wings will organize according to AFI 38-101, *AF Organization*, or as authorized by HQ USAF/A1M. Contractor and civil service maintenance functions are not required to organize in accordance with (IAW) AFI 38-101, but will implement the organization as outlined in their proposal as accepted by the government. Maintenance capabilities and their inherent resources are organized in right-sized capability segments, or unit type codes (UTCs), to perform maintenance on mission elements, components, and equipment in deployed conditions.

1.2. (ANG) For the purpose of this instruction, in units where there is not an Operations Group Commander or Maintenance Group Commander responsible for maintenance, the applicable group commander or director of maintenance must be the maintenance authority, as depicted by the wing's organizational structure, and must ensure compliance with all responsibilities in this instruction. Also for the purpose of this instruction the term "civilian equivalent" does not apply.

1.2.1. **(Added-ANG)** ANG maintenance activities are organized by the various organizational structure codes on the manning document for that particular weapon or support system. See **Figure 1.3. (Added)**, and **Figure 1.4. (Added).** Paragraph references in the organizational charts have been added to clarify responsibilities for the typical ANG unit. Workcenters are staffed consistent with mission requirements, workload, and available personnel. Units are encouraged to consolidate functions when warranted to streamline operations and enhance mission readiness. During non-federalized operations, ANG units are not manned or structured to adopt all gaining command maintenance management policies and procedures. When the gaining command utilizes a different maintenance management program, the unit MXG/CC ensures management personnel is aware of that program to permit the unit to be incorporated into the gaining command management structure upon federalization.

Figure 1.3. (Added-ANG) ANG CAF Maintenance Group Organization. NOTE: Typical but not all inclusive.

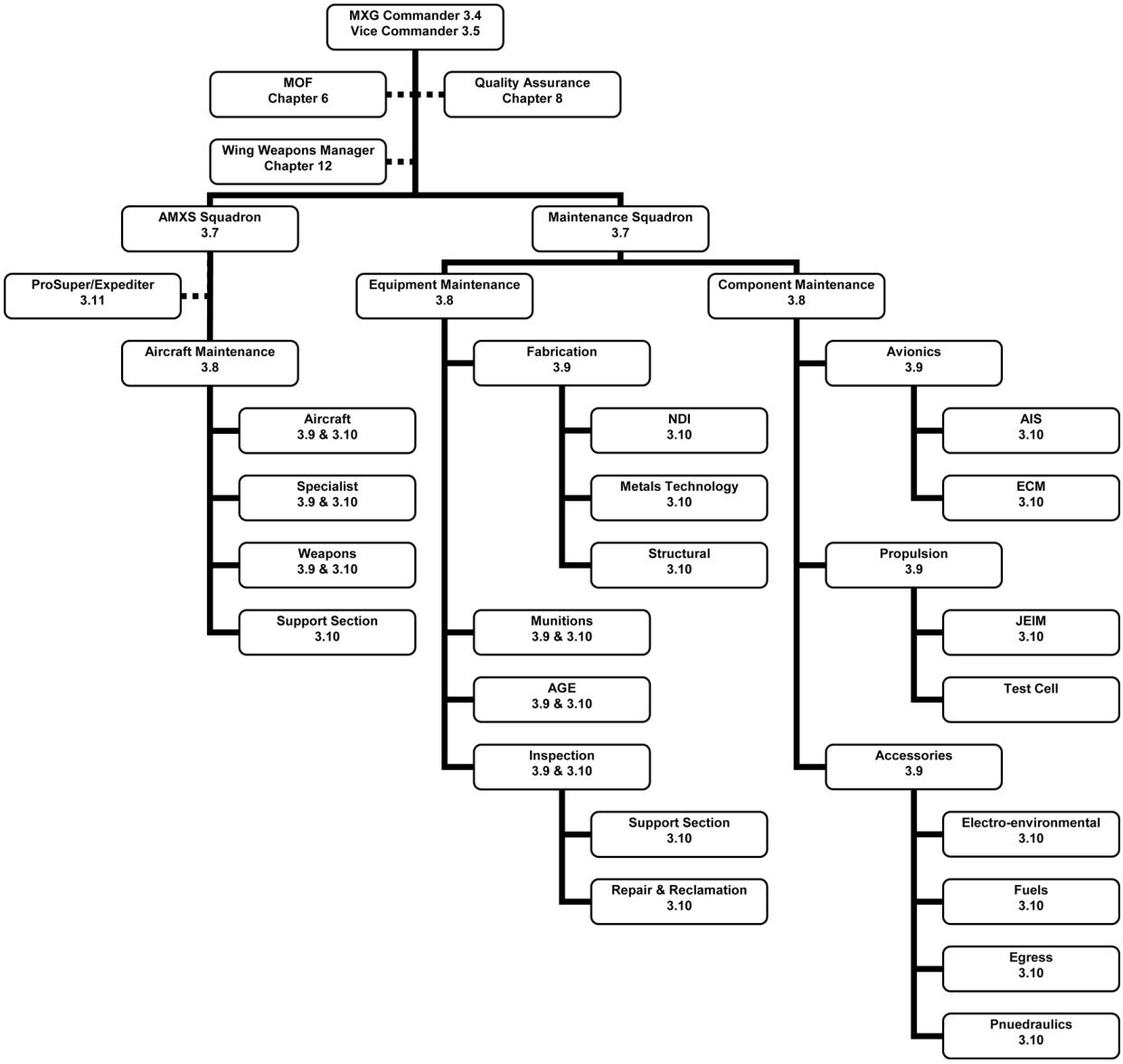
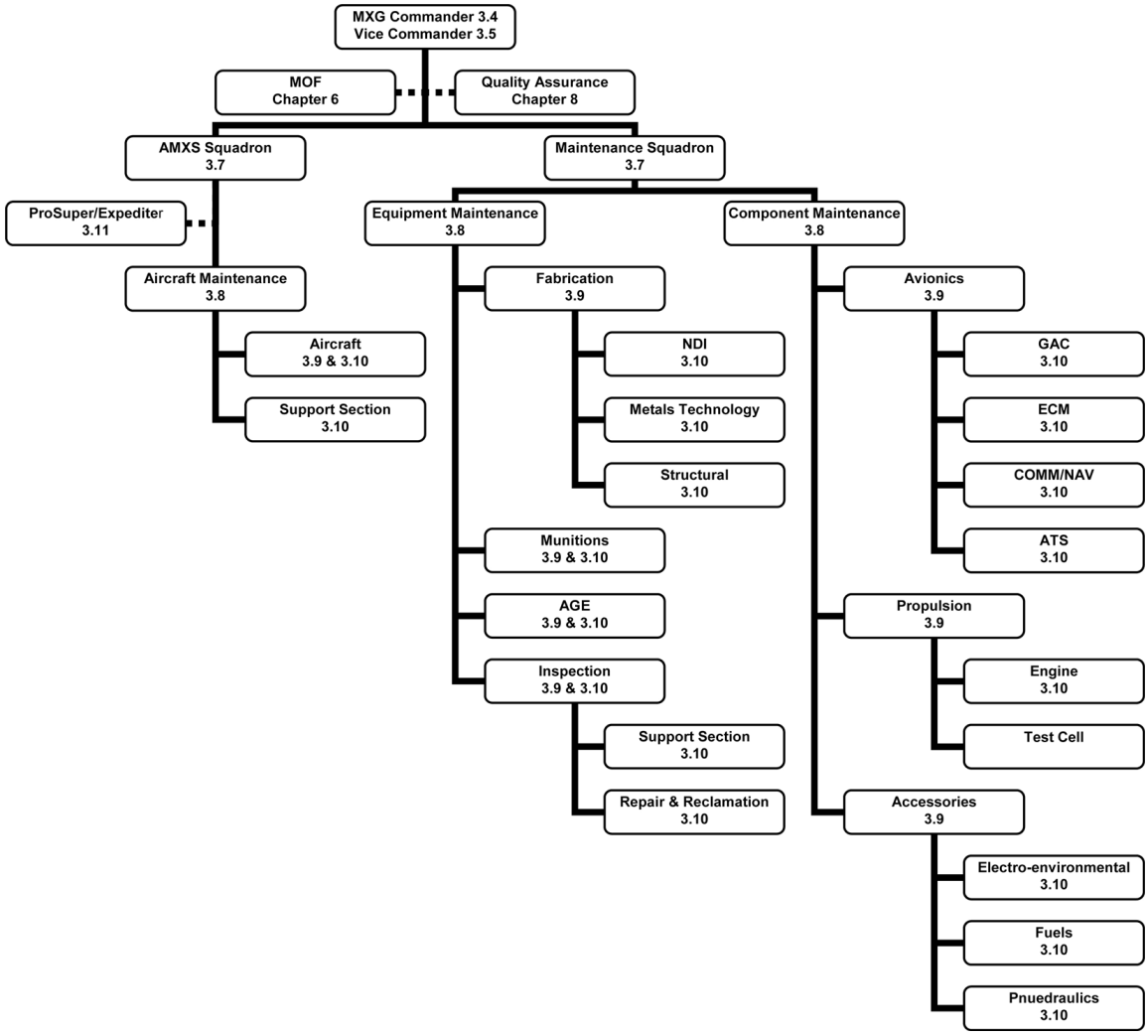


Figure 1.4. (Added-ANG) ANG MAF Aircraft Maintenance Group Organization. NOTE: Typical but not all inclusive.



1.3. Aircraft and Equipment Readiness. Aircraft and equipment readiness is the maintenance mission. The maintenance function ensures assigned aircraft and equipment are safe, serviceable, and properly configured to meet mission needs. Maintenance actions include, but are not limited to, inspection, repair, overhaul, modification, preservation, refurbishment, troubleshooting, testing, and analyzing condition and performance. All levels of supervision must place emphasis on safety, quality, and timeliness in the performance of maintenance. The concept of quality maintenance must be fostered by each supervisor and technician to ensure the integrity and skill of each maintainer is not degraded. Shortcuts or incomplete maintenance actions are prohibited. To the greatest extent possible, maintenance is accomplished on a preplanned scheduled basis. Planning provides the most effective and efficient use of people, facilities, and equipment, reduces unscheduled maintenance, and allows for progressive actions toward maintaining and returning aircraft and equipment to safe operating condition. Conducting a bench check of components and proper control of repair cycle assets throughout the maintenance cycle are also critical elements of the equipment maintenance program.

1.3.1. Preventive Maintenance. AF aircraft require regular maintenance and repair to ensure their optimum availability for mission tasking. Each aircraft is designed with a maintenance concept tailored to its operational mission. Built into that concept are specific inspection and servicing requirements, which form the basis of a preventive maintenance program. All AF units must implement and manage the tasks specified in the scheduled program for their assigned aircraft and associated support equipment (SE). By following that program, aircraft systems and components will operate with greater reliability over time to ensure maximum aircraft availability. A conscientious and disciplined approach to preventive maintenance will be the method used to meet that goal safely and effectively. Preventive maintenance concepts are described in TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*.

1.3.1.1. Preventive Versus Corrective. The purpose of the entire maintenance process is to sustain a capability to support the flying and training missions. To accomplish this objective, the primary focus of the effort should be on preventive, rather than corrective, maintenance. Preventive (or scheduled) maintenance ensures equipment is ready and available at the time of need. On the other hand, corrective (or unscheduled) maintenance is generated during the process of using equipment.

1.3.2. On-Equipment and Off-Equipment. There are two basic types of maintenance performed: on-equipment and off-equipment. On-equipment is work performed on an aircraft or piece of SE. Off-equipment work is typically performed in a repair shop on components removed during on-equipment maintenance. Either type of work can be scheduled or unscheduled. Components removed from equipment for in-shop repair are considered to be in the repair cycle. Like preventive maintenance, effective repair cycle management is critical to sustaining maintenance capability. Repair cycle managers must strive to eliminate bottlenecks by ensuring adequate parts, equipment, and trained personnel are available to minimize repair cycle time.

1.3.3. Base-level aircraft maintenance activities must have the capability to launch and recover aircraft and sustain the preventive maintenance program. Generally, this means most units must possess a full complement of equipment and supplies to perform on-equipment and off-equipment maintenance. Aircraft repair sources may include: (a) in-house (organic) from operational or support commands, (b) other military services, and (c) commercial organizations under contract.

1.3.4. Maintenance cross-tells will be initiated when a condition or trend is discovered regarding (but not limited to) a weapon system or common components that should be shared with other users or potential users. This information should be transmitted using DMS or e-mail to ensure widest dissemination and ensure it is brought to the attention of unit commanders in order to prevent or mitigate mishaps, injury, or damage to AF personnel, equipment, or property. Typically cross-tells will provide relevant background information and history and can include such information as National Stock Numbers (NSN), part numbers, specific location of problems areas, etc. Cross-tell information will be provided to applicable MAJCOM functional managers, lead command weapon system management offices, deployed maintenance activities, and System Program Manager offices as appropriate to ensure dissemination to all affected agencies.

1.4. Maintenance Concept. The AF requires varying degrees of maintenance capability at different locations. Maintenance capability depends upon mission requirements, force protection, economics of repair, transportation limitations, component reliability, workload agreements, facility requirements, fre-

quency of tasks, and special training required. This capability is described (in order of increasing capability) as either organizational, intermediate, or depot.

1.4.1. Organizational - First level of maintenance performed *on-equipment* (directly on aircraft or support equipment) at flightline level. This level generally includes repair, inspection, testing, servicing and/or calibration.

1.4.2. Intermediate - Second level of maintenance performed *off-equipment* (on removed component parts or equipment) at backshop level. Primarily testing and repair or replacement of component parts. This level also includes Centralized Intermediate Repair Facilities (CIRFs).

1.4.3. Depot - Third level of maintenance performed on- or off-equipment at a major repair facility. Highest level of maintenance for more complex repairs.

1.4.3.1. Requests for Depot Level Assistance. If base-level maintenance requires depot level assistance for evaluation and/or repair beyond unit capability, the request must be made IAW AFI 21-103, TO 00-25-107, *Maintenance Assistance*, and TO 00-20-14, *AF Metrology and Calibration Program,* or automated process as approved by the mission design series (MDS) specific system manager (e.g., C-130 AIRCATS, F-16 TAR). All requests for depot level assistance must be coordinated through the Maintenance Group (MXG) Quality Assurance (QA) office and MOS/MOF PS&D.

1.4.3.1. **(ANG)** Electronic Depot Level Assistance Request satisfies coordination requirement. The 162 FW shall coordinate with LM Aero for depot level assistance for the United Arab Emirates (UAE) F-16 block 60 aircraft. The 178 FW shall coordinate with the Royal Netherlands Air Force (RNAF) maintenance liaison office for RNAF owned F-16 aircraft depot level assistance.

1.4.4. Two-level maintenance (2LM) - maintenance approach using two of the three levels of maintenance to support weapons systems. The 2LM approach modifies or eliminates the intermediate (off-equipment) function where possible, consolidating that repair function at the depot level. Refer to AFI 21-129, *Two Level Maintenance and Regional Repair of AF Weapon Systems and Equipment*, for detailed procedures.

1.4.5. Three-level maintenance (3LM) - maintenance approach employs all three levels of maintenance. This level typically includes legacy systems (e.g., F-15, B-52, T-38).

1.4.6. Standard maintenance units and operational test units that possess non-traditional aircraft maintenance Air Force Specialty Codes (AFSC) such as 2EXXX, Communications/Electronics Systems career field, who perform maintenance on aircraft or aircraft support systems must comply with the requirements identified within this instruction. In the event of a conflict with other guidance, this instruction will take precedence.

Section 1A—CWO ONLY

1.5. Reliability and Maintainability (R&M). At the core of AF R&M efforts are technical working groups (e.g., PIWG, MDS maintainers conferences, Component Improvement Program). Units will forward inputs IAW AFI 21-118, *Improving Aerospace Equipment Reliability and Maintainability*. Assessing unit R&M concerns is twofold. First, review all reported R&M deficiencies and determine those caused by unit factors and local conditions versus those beyond the unit's control. Second, review available maintenance and supply trends and high work hour consuming repairs. Maintenance Analysis and the Logistics Readiness Squadron (LRS) provide the majority of this information.

1.5. (ANG) The 162 FW shall coordinate UAE F-16 block 60 issues with LM Aero. The 178 FW shall coordinate RNAF owned F-16 aircraft issues with the RNAF maintenance liaison office.

1.6. Maintenance Discipline. Maintenance discipline involves integrity in all aspects of the maintenance process. It is the responsibility of all maintenance personnel to comply with all written guidance to ensure required repairs, inspections, and documentation are completed in a safe, timely, and effective manner. Supervisors are responsible for enforcing and establishing a climate that promotes maintenance discipline. All personnel who fail to maintain maintenance discipline standards will be held accountable.

1.6.1. Compliance Terminology. For the purposes of this instruction, the following definitions apply:

1.6.1.1. ***Shall, Must, Will*** - Indicate mandatory requirements. (Will is also used to express a declaration of purpose for a future event.)

1.6.1.2. ***Should*** - Indicates a preferred method of accomplishment.

1.6.1.3. ***May*** - Indicates an acceptable or suggested means of accomplishment.

1.7. Use of Technical Orders (TO) and TO Supplements. Use of the prescribed technical data to maintain aircraft and equipment is mandatory IAW AFPD 21-3, *Technical Orders*. Responsibilities for managing TOs are described in AFI 21-303, *Technical Orders* and 00-5 series technical orders. The AF is modernizing the TO system using the Technical Order Concept of Operations (TO CONOPS) as a foundation. The TO CONOPS goal is to provide user friendly, technically accurate, and up-to-date digital technical data at the point of use that is acquired, sustained, distributed and available in digital format from a single point of access for all technical data users. TO users will access technical data using a viewing device called an Electronic Tool (E-Tool). E-Tools (desktop and laptop computers, hand held devices, etc.) are common infrastructure allowing access to logistics information systems (to include the AF Standard TO Management System (JCALS until ETIMS is fielded)) that will automatically update TOs, provide automated change requests (similar to AFTO IMT 22) and integrate with other Maintenance Information Systems (MIS). AF TOs shall be available for viewing via the AF Portal either automatically or on a case-by-case basis. AF maintenance personnel will use E-Tools where available. Funding for E-Tools will be IAW the FY Annual Planning and Programming Guidance.

1.7. (ANG) Units shall contact NGB/A4MM for unresolved technical order issues.

1.7.1. Supervisors will:

1.7.1.1. Strictly enforce adherence to and compliance with TOs and supplements.

1.7.1.2. Establish and manage TOs and supplements IAW to TO 00-5-1, *AF Technical Order System*, , and AFI 21-303.

1.7.1.3. Establish procedures for shipping TOs, E-Tools, support equipment associated with E-Tools, and supplements to support mobility requirements.

1.7.2. All personnel will:

1.7.2.1. Recommend improvements or corrections for TO deficiencies IAW TO 00-5-1. Printed e-mail/faxes are not acceptable methods of updating or revising TOs. The AFTO IMT 22 prescribed in TO 00-5-1 may be submitted as an attachment to an e-mail to report problems of a TO; however, replies to recommended changes are for information only. Official TO updates are the only valid authority for correcting a technical deficiency and implementing change.

1.7.2.1. **(ANG)** The 162 FW shall use UAE Form 22 for UAE F-16 block 60 aircraft. Routing shall be determined between the 162 FW and Lockheed Martin (LM) Aerospace. Also send an informational copy to Central Technical Order Control Unit (CTOCU). The 178 FW shall use a local form for RNAF owned F-16 aircraft. Routing shall be determined between the 178 FW and RNAF maintenance liaison office. Also send an informational copy to Central Technical Order Control Unit (CTOCU).

1.7.2.2. Continually assess the currency, adequacy, availability, and condition of their TOs and supplements.

1.7.2.3. Ensure waivers to, deviations from, or additional technical data procedures are issued using approved official communication methods (e.g., signed letter, organizational E-mail, DMS message or authorized automated TO 00-25-107, *Maintenance Assistance,* technical assistance request system, or applicable guidance for ALC/AMARC). Ensure all authorized technical data variances are kept with aircraft/equipment historical records until no longer applicable.

1.7.3. MAJCOMs will ensure any new or modified configurations or maintenance conditions are coordinated with, and approved by, the System Program Manager (SPM) responsible for the operational safety, suitability, and effectiveness (OSS&E) of the systems and end-items prior to implementation.

1.7.3. **(ANG)** The Single Manager shall be LM Aero for UAE F-16 block 60 aircraft. The Single Manager shall be the RNAF maintenance liaison office for RNAF owned F-16 aircraft at the 178 FW.

1.8. Publications. MAJCOMs will supplement this AFI. Units must tailor procedures to the unique aspects of their own maintenance operation and publish directives (instructions, supplements, and, for functional areas, operating instructions IAW AFI 33-360), for areas where more detailed guidance or specific procedures will enhance operations. Units shall adhere to the following procedures:

1.8.1. Do not publish unit instructions or Operating Instructions (OI) to change or supplement TOs. Units must use procedures in AFI 21-303 and TO 00-5-1 to update TOs.

1.8.2. Coordinate directives with all appropriate unit agencies.

1.8.3. Conflicts between administrative and technical publications will be resolved in favor of the technical publication.

1.8.4. Conflicts between procedural technical publications and weapon system specific technical publications will be resolved in favor of the weapon system specific technical publication.

1.8.5. Conflicts between Air National Guard/AF Reserve and AF administrative publications are resolved IAW AFI 33-360.

1.8.6. Develop, control, and maintain technical data checklists IAW AFI 21-303, **Chapter 8** of this instruction, TO 00-5-1, and MAJCOM instructions. Technical data checklists provide abbreviated step-by-step procedures for operation and maintenance of systems and equipment in the sequence deemed most practical, or to ascertain operational readiness of equipment and minimum serviceable condition**.**

1.8.7. Develop, control, and maintain functional checklists. Functional Checklists are not formatted IAW TO 00-5-1 and **Chapter 8** of this instruction, but at a minimum are titled and dated. Functional checklists are required for use by functional areas(s) during actions such as aircraft crash, mass loads,

severe weather warning or evacuation, self-inspections, activity inspections, etc. **Functional checklists shall not be used in place of or to circumvent technical data** for operation, servicing, inspection or maintenance of aircraft, aircraft systems and all other equipment supporting aircraft and munitions maintenance. MAJCOMs and/or unit supplements may provide additional guidance for management and use of checklists. QA will ensure functional checklists are reviewed annually for currency and document this review.

1.8.8. **(Added-ANG)** The coordination, routing, and documentation of all publication reviews may be electronic. Any other documentation required by this instruction, unless specified, may be maintained electronically.

1.9. Waiver Request. MAJCOMs are not permitted to deviate from this instruction without receiving written approval from HQ USAF/A4M. Units must submit waiver requests through the MAJCOM. See **Attachment 10** for template.

1.9. (ANG) Units shall submit waiver requests through the NGB/A4MM.

1.10. Operating Instructions (OI). OIs are not published to change AF instructions, policy or TOs. Group instructions pertaining to maintenance are published as OIs IAW AFI 33-360. When crossing group lines, OIs must be coordinated and approved by the affected commanders and published as wing instructions. Wing instructions will be published when expanded guidance encompasses other group responsibilities, for example: Operations Group (OG), MXG, Mission Support Group (MSG), etc. QA will be the Office of Primary Responsibility (OPR) for maintenance policy guidance and consolidation. IAW AFI 33-360, units may supplement this instruction in lieu of creating individual OIs as mandated in this instruction.

1.10.1. QA will review all OIs annually for accuracy, intent and necessity and document this review.

1.10.1. **(ANG)** Quality Assurance is the OPR and will designate a POC for each unit supplement/OI. The POC is soley responsible for coordinating with the appropriate organizations. The POC will resolve all critical comments prior to submission to QA for publication. QA is responsible for the the accuracy, currency and integrity of the contents and for compliance with the publication. Wing/Group Information Management functions have the responsibility for format, publication and distribution (paper or electronic) for unit supplements/OIs.

1.10.2. The appropriate Safety activity will review OIs affecting munitions operations or safety; including all locally developed checklists, instructions, supplements, plans, or operating procedures relating to nuclear surety IAW AFI 91-101, *AF Nuclear Weapons Surety Program*.

1.11. Support Agreements (SA). Maintenance organizations may be tasked to support functions not related to the primary unit mission. Intra-service, inter-service, inter-command, and international support agreements outline the degree of support provided and the responsibilities of the supported function. The agreements must be developed and reviewed in terms of possible impact on the primary unit mission and all other existing agreements and fully coordinated with the LRS plans function.

1.11. (ANG) Units shall contact NGB/A4RXP for unresolved support agreement issues.

1.12. Performance-Based Activities. This section identifies the basic responsibilities for managing performance-based activities (e.g., contract maintenance, Most Efficient Organization (MEO), or High Per-

formance Organization (HPO)). Additional guidance may be found in AFI 63-124, *Performance-Based Services Acquisition (PBSA)* and AFI 38-203, *Commercial Activities Program*. ***NOTE*:** By definition, a contractor, MEO, or HPO will be referred to as a service provider.

1.12.1. Contractors have historically provided significant support to the U.S. Armed Forces. Contractor support can augment existing capabilities, provide expanded sources of supplies and services, bridge gaps in the deployed force structure, leverage assets, and reduce dependence on U.S.-based maintenance. The war fighter's link to the contractor is through the contracting officer or the contracting officer's representative (e.g., quality assurance representative (QAR), contracting officer's technical represetative (COTR), quality assurance evaluator (QAE)). For MEO and HPO, contact the unit commander. ***NOTE:*** for the purposes of this instruction QAE is synonymous with QAR, COTR, and COR.

1.12.2. Developing Performance-Based Requirements Documents. Performance-based requirements documents (e.g., Statement of Objectives, Statement of Work, Performance Work Statements) focus on desired outcomes and performance standards that communicate what the contractor is asked to provide. Requirements documents provide desired outcomes, performance standards, milestones (if appropriate), and metrics which not only measure the contractor's performance but reflect the management imperatives and initiatives that drive the AF (e.g., Mission Capable Rate) and other key efficiency and effectiveness metrics. Requirements documents do not provide "how to" details that dictate the contractor's organization, management, personnel development, or approach to completing work. The only exceptions are safety, environmental management, and security when the contractor operates on a military installation. Additionally, the contractor is required to follow applicable TOs when performing maintenance. Unlike MEO and HPO, contractor operations and personnel are not supervised by government personnel. Any changes to the scope of the work shall be reflected in an official change to the requirements document, which is provided to the contracting officer for modification of the contract.

1.12.3. HQ USAF/A4M Responsibilities:

1.12.3.1. Establish and approve policies and procedures for direction and management of the performance-based activity.

1.12.3.2. AF maintenance focal point for all inter-service and interagency matters pertaining to the performance-based activity.

1.12.3.3. Ensures requirements for measurement, documentation, and reporting of the performance-based activity exist.

1.12.3.4. Ensures policies and procedures contain provisions for continuation of required operation and services in the event of disruption, termination, or default of the performance-based activity.

1.12.4. MAJCOM Responsibilities:

1.12.4.1. Designates focal points for organizational, functional, and technical questions pertaining to each performance-based activity program.

1.12.4.2. Specifies measurement areas and performance levels required for aircraft, systems, and equipment operated or maintained by performance-based activities.

1.12.4.3. Specifies the forms, methods of documentation, and frequency of reporting used to assess performance-based activities and ensures these requirements are included in the Performance Management Assessment Program (PMAP).

1.12.4.4. Approves base-level requests that would permit a single Federal Aviation Administration (FAA) certified Airframe/Powerplant (A/P) contractor technician maintaining contracted logistics support (CLS) aircraft to repair and sign off their own Red X's when sent to recover aircraft off-station.

1.12.4.5. Identifies the qualifications, training requirements and responsibilities for QAE personnel assigned to surveil performance-based activities.

1.12.4.6. Develops and publishes contingency procedures for support of continuing operations in the event of disruption, termination, or default of contract.

1.12.4.7. Ensures units with assigned QAE personnel meet requirements of AFI 63-124 and **Chapter 17** of this publication, along with other applicable guidance.

1.12.5. Unit Responsibilities:

1.12.5.1. Designates a focal point for all functional, technical, and QAE matters pertaining to performance-based activities. Ensures the organizational relationship, physical location, and lines of communication between the Functional Director/Commander, QAE personnel, contracting officer, and the performance-based activity, promote efficiency and continuity of operations. If maintenance requires depot level assistance for evaluation and/or repair beyond unit capability, the request shall be made IAW TO 00-25-107.

1.12.5.2. Designates a focal point (e.g., Environmental Coordinator) as the MXG (or equivalent) for all Environmental, Safety, and Occupational Health requirements, compliance, and, as appropriate, worker protection issues for affecting performance-based activities. The Environmental Coordinator focal point will lead the installation Candidate Process analysis program as identified in AFPD 90-8, *Environment, Safety, and Occupational Health*/AFI 32-7080/7086 and assist installation tenants and other organizations as required.

1.12.6. In coordination with the contracting officer and the MXG/CC (or equivalent), provide specific guidance to the performance-based activity to ensure proper maintenance discipline and flight worthiness of aircraft and subsystems.

1.13. Modification Management. A modification proposal is a recommendation to change the operation, use, or appearance of AF equipment. Modifications (temporary, permanent, or safety) to AF aircraft or equipment are expressly prohibited without MAJCOM approval. Units will forward modification proposals on an AF IMT 1067, **Modification Proposal**, or approved Research, Development, Test & Evaluation (RDT&E) process form, IAW AFI 63-1101, *Modification Management*, AFI 10-601, *Capabilities Based Requirements Development,* and MAJCOM directives to the MAJCOM focal point, SPM, and HQ USAF/A4M for approval.

1.13. (ANG) Forward the modification proposal on an AF IMT 1067, *Modification Proposal, or approved Research, Development, Test and Evaluation (RDT&E) process form*, according to AFI 63-1101, and AFI 10-601, to the NGB/A4M focal point. QA submits modification proposals; tracks unit concerns being worked by higher headquarters, and ensures proper implementation of modification directives and/or TCTOs. LM Aero shall provide configuration control and process modification proposals for

UAE F-16 block 60 aircraft. The RNAF maintenance liaison office shall provide configuration control and process modification proposals for RNAF owned F-16 aircraft at the 178 FW.

1.13.1. In addition to requirements set forth in AFI 63-1101, an additional requirement is levied by HQ USAF/A4M. Temporary modifications extending beyond a 12 month period requires annual HQ USAF/A4M approval. Extensions must be coordinated through the SPM and lead MAJCOM to HQ USAF/A4M approximately 30 days prior to the anniversary date. For all temporary and permanent modifications, the system and end item Operational Safety, Suitability, & Effectiveness (OSS&E) shall be preserved IAW AFPD 63-12, *Assurance of OSS&E,* and AFI 63-1201, *Assurance of OSS&E*. OSS&E is integral to the modification management process and as such shall be preserved throughout modification planning and execution to ensure operational safety, design integrity and suitability for all modified systems and end items. The weapon system SPM is responsible for maintaining system engineering integrity; the lead command is responsible for fleet-wide interoperability and commonality of that system. Therefore, all proposed permanent and temporary modifications must be approved by both the SPM and lead command and reviewed by the lead command Configuration Review Board (CRB) prior to being implemented. (The lead command is the command that serves as operator's interface with the SPM for a weapon system as defined by AFPD 10-9, *Lead Operating Command Weapon Systems Management*).

1.13.1. **(ANG)** To install T-1 modifications on more than five systems requires coordination through NGB/A4M, owning single manager, and Air Logistics Center Commander (ALC/CC), then HQ USAF/A4M approval. LM Aero shall be the Configuration Review Board for UAE F-16 block 60 aircraft to install T-1 modifications. The 162 FW shall submit and coordinate the proposal to LM Aero for approval. LM Aero shall be the Configuration Review Board for UAE F-16 block 60 aircraft. The 162 FW Safety modifications shall not be accomplished on UAE F-16 block 60 aircraft without coordination with ANG Director of Logistics (NGB/A4), ANG Director of Operations (NGB/A3), ANG Flight Safety (NGB/A3) and LM Aero. The RNAF maintenance liaison office will be the Configuration Review Board for RNAF owned F-16 aircraft at the 178 FW to install T-1 modifications. 178 FW Safety modifications shall not be accomplished on RNAF owned F-16 aircraft at the 178 FW without coordination with the RNAF maintenance liaison office, ANG Director of Logistics (NGB/A4), ANG Director of Operations (NGB/A3), ANG Flight Safety (NGB/A3).

1.13.2. Modifications to FAA certified aircraft. Modifications to AF aircraft having FAA certification shall not cause the aircraft to lose its FAA certification. All modifications to such aircraft shall comply with AFPD 62-4, *Civil Airworthiness Standards for Passenger Carrying Commercial Derivative Transport Aircraft* and AFPD 62-5, *Standards of Airworthiness for Commercial Derivative Hybrid Aircraft*. Such modifications are required to keep the weapon system or aircraft in compliance with FAA standards and to maintain FAA certification.

1.13.3. Modifications to Munitions. All proposed modifications to aircraft-carried munitions shall include SEEK EAGLE certification (per AFI 63-104, *The SEEK EAGLE Program*). All modifications to AF nuclear munitions or their associated support/training equipment shall be nuclear certified IAW AFI 91-103, *AF Nuclear Safety Certification Program*. All modifications to AF non-nuclear munitions or their associated support/training equipment shall be certified IAW AFI 91-205, *Non-Nuclear Munitions Safety Board*.

1.14. Maintenance Information Systems (MIS). MIS refers to automated maintenance information systems included in the maintenance portfolio and the AF Knowledge Services (AFKS). MIS includes

systems and applications that support and enable maintenance business processes. MIS will be used to document maintenance actions and determine fleet health. MIS and aircraft forms will be documented by the individual completing the task (for Red Ball maintenance, follow locally developed documentation procedures). MIS provides maintenance supervisors with products to evaluate organizational effectiveness and to aid in decision-making. Therefore, deploying units must ensure that all appropriate hardware (e.g., computers and servers) are available at the deployed locations to establish and sustain connectivity. Refer to **Chapter 6** of this instruction. As the maintenance portfolio owner, AF/A4M has central authority for policy and guidance covering all MIS IAW applicable AF 33-series publications. AF/A4M must have control over the proliferation of unit- or MAJCOM-unique MIS. If a unit desires to use a system other than the authorized standard MIS, whether commercial off-the-shelf (COTS), government off-the-shelf (GOTS) or locally generated, the unit must submit a request for permission to their MAJCOM 3-digit Maintenance Management Division (i.e., A4M or A4Q). MAJCOM 3-digit functional managers shall coordinate on all requests and forward through the MAJCOM A4 to HQ USAF/A4M for final consideration/approval. User may view the approved MIS portfolio by accessing the Enterprise Information Technology Database Respository located on the AF Portal.

1.14. (ANG) Ensure MIS and aircraft forms are documented by the individual completing the task, when possible. In circumstances where this is not practical, another individual may document MIS, but the actual individual's employee number (G081)/ userid (IMDS-CDB) that completed the task will be entered in MIS and it will match the aircraft forms. As soon as practical, the individual who completed the task will complete the MDC and verify the corrective action. The 162 FW shall use Automated Logistics Management System (ALMS) for UAE F-16 block 60 aircraft. ALMS shall be considered a MIS. The 162 FW shall develop local procedures in an OI/Sup for deployed aircraft. The 178 FW shall use the RNAF supplied software for RNAF owned F-16 aircraft at the 178 FW. This software shall be considered a MIS. The 178 FW shall develop local procedures in an OI/Sup for deployed RNAF aircraft.

1.14.1. MIS Data. Data contained, entered, and retrieved in MIS is "Sensitive/For Official Use Only (FOUO)." Safeguards have been put in place to ensure control of this "Sensitive/FOUO" data with access through "military only" systems. Use is limited to authorized personnel who have been granted access through a controlled process. Each MIS has additional protection with unique, individually granted, need-to-know USERID/Password assurances. It is vital, especially during contingency operations, to capture maintenance data at every location to provide in-depth current/after action analysis of AF, MAJCOM, and unit efforts for deployments and contingencies.

1.15. Maintenance Management Metrics. Metrics provide a measurement of performance and capability. Leaders, supervisors and technicians must have accurate and reliable information to make decisions. Primary concerns of maintenance managers are how well the unit is meeting mission requirements, how to improve equipment performance, identifying emerging support problems, and projecting future trends. Maintenance management metrics—sometimes called quality performance measures or indicators—are a crucial form of information used by maintenance leaders to improve the performance of maintenance organizations, equipment and people when compared with established goals and standards. Metrics often take the form of an "MC Rate Graph" or a "Status of Personnel Training Slide," presenting a gauge of an organization's effectiveness and efficiency. Properly used, metrics are roadmaps that help determine where you've been, where you're going, and how (or if) you're going to get there.

1.15.1. The overarching objective of AF maintenance is to maintain aircraft and equipment in a safe, serviceable and ready condition to meet mission needs. Maintenance management metrics serve this overarching objective and shall be established or maintained by Headquarters AF, Major Commands,

Wings and/or Squadrons to evaluate/improve equipment condition, personnel skills and long-term fleet health. Metrics shall be used at all levels of command to drive improved performance and adhere to well-established guidelines. Metrics must be:

1.15.1.1. Accurate and useful for decision-making.

1.15.1.2. Consistent and clearly linked to goals/standards.

1.15.1.3. Clearly understood and communicated.

1.15.1.4. Based on a measurable, well-defined process.

1.15.2. Analysis is crucial to improving organizational performance and is the key component of the metrics management process. Commanders and maintenance managers must properly evaluate maintenance metrics and rely upon the maintenance analysis section for unbiased information. Analysis sections shall draw upon information from various maintenance information systems for data. The Integrated Maintenance Data System-Central Database (IMDS-CDB), G081 (IMDS for Mobility), Reliability and Maintainability Information System (REMIS), Standard Base Supply System (SBSS), AF Knowledge Services (AFKS), Combat Ammunition System (CAS), and AF/A4-approved command-unique analysis tools are the primary data sources. A good maintenance manager does not strive to "chase numbers" for the sake of looking good. However, the manager uses metrics to focus resources and personnel to improve maintenance processes. Managers must also clearly understand and communicate the crucial linkage between goals, standards and metrics. The AF sets goals and standards for organizations, personnel and weapons systems that facilitate evaluation, comparisons and improvements. These standards are published separately by senior leadership and should be clearly understood at all levels of command. Leaders at every level must also support analysis and review metrics to properly drive improved performance. Maintenance analysts manage and track this process, but maintenance metrics, and the resulting improvements they drive, are inherently a leadership responsibility.

1.15.3. Primary Maintenance Metrics. Metrics are often grouped into various categories, including leading or lagging indicators. Leading indicators show a problem first, as they directly impact maintenance's capability to provide resources to execute the mission. Lagging indicators follow and show firmly established trends. Maintenance leaders must review sortie production and maintenance health constantly and be knowledgeable about maintenance indicators that highlight trends before they become problems. This section lists the primary maintenance metrics alphabetically with a description and formula as prescribed in AFI 21-103, *Equipment Inventory, Status and Utilization Reporting,* Attachment 2 (for maintenance status codes); and TO 00-20-2, *Maintenance Data Documentation,* Appendix L (for flying codes).

1.15.3.1. Aircraft Possession. A key factor in metrics involves aircraft "possession". The AF mandates each aircraft will always be owned or "possessed" by a designated organization. Possession is an indicator of an organization's or aircraft fleet's health. Aircraft that are under the control of their owning base are possessed by that organization. An aircraft that flies to depot for maintenance/inspection or is repaired by a depot team at the base is temporarily possessed by depot. In calculating the various aircraft maintenance metrics, possession is calculated in units of hours normally for specific time periods (e.g., monthly, annual).

1.15.3.2. Abort (Total) Rate (AR). A unit's abort rate is a leading indicator of both aircraft reliability and quality of maintenance performed. It is the percentage of missions aborted in the air

and on the ground. An abort is a sortie that ends prematurely and must be re-accomplished. The abort rate may be measured separately as ground or air aborts.

1.15.3.2.1. Total AR (%) = Air + Ground Aborts x 100

Total Sorties Flown + Ground Aborts

1.15.3.2.2. Maintenance aborts are those sorties ended prematurely on the ground or in the air caused by system failures/maintenance problems. Maintenance abort rates can gauge both aircraft reliability and quality of maintenance performed. Maintenance abort rates can be calculated using the following formulas.

1.15.3.2.2.1. Maintenance Air AR (%) = Air Aborts (Maintenance) x 100

Total Sorties Flown

1.15.3.2.2.2. Maintenance Ground AR (%) = Ground Aborts (Maint) x 100

Total Sorties Flown + Ground Aborts

1.15.3.3. Aircraft availability. Percentage of a fleet not in a Depot possessed status or NMC aircraft (that are unit possessed). ***NOTE:*** The metric may be created at the Mission Design (MD)/ MDS level or may be grouped by fleet (e.g., Aggregate, Bombers, Fighters) to determine "Aircraft Availability".

1.15.3.3.1. Availability rate = MC hours* x 100

Total Possessed hours**

1. * MC Hours consists of Possession Purpose Codes (PPC): CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB.

2. ** Total Possessed Hours (TAI) consist of the following Possession Purpose Codes (PPC): BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XW, XZ, ZA, and ZB

1.15.3.4. Break Rate (BR). The break rate is a leading, flying-related metric. It is the percentage of aircraft that land in "Code-3", or "Alpha-3" for Mobility AF (MAF), status. This metric primarily indicates aircraft system reliability. It may also reflect the quality of aircraft maintenance performed. If Fix Rates (refer to paragraph **1.15.3.7.**) are used as a measurement of maintainability, the Break Rate is the complementary measurement of reliability. For true evaluation of equipment/ system reliability, measurements must be taken at the system/subsystem level. It is also an excellent predictor of parts demand. Several indicators that follow break rate are Mission Capable (MC), Total Not Mission Capable for Supply (TNMCS), Cannibalization Rate (CR) and Repeat/ Recur (R/R).

1.15.3.4.1. BR (%) = Number of Sorties that Land "Code-3" x 100

Total Sorties Flown

1.15.3.5. Cannibalization Rate (CR). The CR is a leading indicator that reflects the number of cannibalization (CANN) actions (removal of a serviceable part from an aircraft or engine to replace an unserviceable part on another aircraft or engine or to fill an Readiness Spares Package (RSP)). In most cases, a cannibalization action takes place when the Logistics Readiness Squadron (LRS) cannot deliver the part when needed and mission requirements demand the aircraft be

returned to an MC status. The CR is the number of cannibalization actions per total sorties flown. This rate includes all aircraft-to-aircraft, engine-to-aircraft, and aircraft/engine to RSP cannibalization actions. Since LRS relies on the back shops and depot for replenishment, this indicator can also be used, in part, to indicate back shop and depot support.

1.15.3.5.1. CR (%) = Number of Aircraft and Engine CANNs x 100

Total Sorties Flown

1.15.3.6. Deferred (or Delayed) Discrepancy (DD) Rate (DDR). The DDR is a leading indicator that should be closely evaluated in comparison to other metrics. This rate represents the average deferred discrepancies across the unit's average possessed aircraft fleet. Discrepancies are considered deferred when: a) they are discovered and the decision is made to defer them, b) discrepancies are scheduled with a start date greater than 5 calender days after the discovery date, or c) discrepancies are awaiting parts with a valid off base requisition. Delayed discrepancies may be Awaiting Maintenance (AWM) or Awaiting Parts (AWP). Although minor maintenance actions must sometimes be deferred or delayed to a more opportune time, maintenance should try to keep this rate as low as possible. If delayed discrepancies can't be scheduled/combined with a more extensive maintenance action, maintenance schedulers should routinely schedule their aircraft down for a day when required to work deferred discrepancies. The DDR metric measures AWM + AWP rates, though individual AWM and AWP rates can and should also be monitored.

1.15.3.6.1. Total DDR (%) = Total (Snapshot) AWM + AWP Discrepancies

Average Aircraft Possessed

1.15.3.6.2. AWM DDR (%) = Total (Snapshot) AWM Discrepancies

Average Aircraft Possessed

1.15.3.6.3. AWP DDR (%) = Total (Snapshot) AWP Discrepancies

Average Aircraft Possessed

1.15.3.7. Departure (Logistics) Reliability (DR) Rate (DRR). This is a leading metric used primarily by the MAF to show a composite of supply, airfield saturation or maintenance problems. The on-time standard for departures are those within 15 minutes of the daily scheduled departure time. The metric provides the commander with an objective measure of the health of the air mobility system and reflects the percentage of departures that are on-time. The main focus of the departure reliability metric is to strengthen the air mobility system through accountability for process improvement. This metric may also be subdivided into other categories (e.g., worldwide departure or en route).

1.15.3.7.1. DRR (%) = Number of Departures – Number of Logistics Delays x 100

Number of Departures

1.15.3.8. Fix Rate (FR). The FR is a leading indicator showing how well the repair process is being managed. It is a percentage of aircraft with a landing status code of 3 (includes system cap codes 3 and 4) returned to a flyable status in a certain amount of time (clock hours). Refer to AFI 21-103 and MAJCOM directives for maintenance start time (e.g., engine shut down, "first" chock). Problems found by maintenance after the aircraft lands (ground found) are not considered in the fix time. The fix time stops when all Landing Status Code 3 Pilot Reported Discrepancies

(PRDs) are fixed even if the aircraft remains NMC. This metric is an excellent tool to track "dead time" in aircraft repair processes because it measures the speed of repair and equipment maintainability. The common, standard interval for this metric is 12-hours. However, fighter units typically measure fix rate at shorter intervals (4 and/or 8 hours) along with the 12-hour rate.

1.15.3.8.1. FR (%) = "Code-3" Breaks Fixed Within 12 Hours of Landing x 100

Total "Code-3" Breaks

1.15.3.9. Flying Schedule Effectiveness (FSE) Rate. This leading indicator is a measure of how well the unit planned and executed the weekly flying schedule. The flying schedule developed by tail number is the baseline upon which the FSE is derived by comparing each day's deviations. Deviations that decrease the FSE from 100 percent include: scheduled sorties not flown because of maintenance, supply, operations, weather, HHQ, air traffic control, sympathy, or other reasons; scheduled sorties that takeoff more than 30 minutes prior to scheduled takeoff; scheduled sorties that takeoff more than 15 minutes after their scheduled takeoff time and sorties that are added to the schedule. Disruptions to the flying schedule can cause turmoil on the flightline, send a ripple effect throughout other agencies, and adversely impact scheduled maintenance actions. [Adjusted Sorties Scheduled = Total Sorties Scheduled - Sorties Cancelled for Monthly/Yearly Utilization (UTE) Rate Achievement + Sorties Added for End of Fiscal Year UTE Close Out]. Some MAF units calculate FSE using the formula in paragraph **1.15.3.9.2.**

1.15.3.9.1. FSE (%) = Adjusted Sorties Scheduled – Deviations x 100

Adjusted Sorties Scheduled

1.15.3.9.2. MAF FSE (%) = Sorties Scheduled – Total Deviations x 100

Sorties Scheduled

1.15.3.10. Hangar Queen (HQ) (Average) Rate. Refer to **Chapter 14** of this instruction for HQ categories/criteria. This indicator is used to evaluate management of the Hangar Queen program and to assist units with problems beyond their control. The HQ rate captures the average number of aircraft hangar queen days (all categories) for a specified reporting period.

1.15.3.10.1. HQ (%) = Total Acft Days in all HQ Categories (in report period) x 100

Days (in report period)

1.15.3.11. Home-Station Logistics Departure Reliability (HSLDR) Rate. This is a leading metric used primarily by the MAF for airlift aircraft. This delineates down to only first-leg departures of unit-owned aircraft departing home station.

1.15.3.11.1. HSLDR Rate (%) = # of HS Departures – # of HS Logistics Delays x 100

# of HS Departures

1.15.3.12. Isochronal Inspection (ISO) Rate. This leading metric measures the average time until next major inspection remaining on the fleet. It should be approximately half the inspection interval and should appear as a diagonal line when the fleet ISO average is portrayed graphically in a Time-Distribution Interval (TDI) (e.g., "scatter gram"). An ISO TDI is a product that shows hours remaining until the next phase inspection (PH) on each aircraft possessed by a unit. However, a unit may have good reasons to manage its ISO flow so the data points define a pattern other than a diagonal line.

1.15.3.12.1. ISO Rate = Total Hours of All Possessed Aircraft Until Next ISO

Total Possessed Aircraft Assigned

1.15.3.13. Maintenance Scheduling Effectiveness (MSE). This is a leading indicator that measures success in the unit's ability to plan and complete inspections and periodic maintenance on-time per the maintenance plan. Deviations to the plan are recorded. A low MSE rate may indicate a unit is experiencing turbulence on the flightline or in the back shops. This indicator is primarily used as feedback to maintenance managers on the success and adherence to scheduled maintenance plans and actions. To compute the MSE, you must know the number of maintenance actions scheduled and accomplished as scheduled along with each action's weighted value (based on the importance of the event and established by MAJCOM directives).

1.15.3.13.1. MSE (%) = Total Points Earned x 100

Total Points Possible

1.15.3.14. Mission Capable (MC) Rate. Though this is a lagging indicator, the MC rate is perhaps the best-known yardstick for measuring a unit's performance. It is the percentage of possessed hours (excluding aircraft in "B-Type" possession purpose code/purpose identifier code status: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX) for aircraft that are FMC or PMC for specific measurement periods (e.g., monthly or annual). A low MC rate may indicate a unit is experiencing many hard breaks, parts supportability shortfalls or workforce management issues. Maintenance managers should look for workers deferring repairs to other shifts, inexperienced workers, lack of parts from LRS, poor in-shop scheduling, high cannibalization rates or training deficiencies. High commitment rates may also contribute to a lower MC rate. The key is to focus on negative trends and identify systemic, underlying causes. Further, the root factors of the MC rate should be measured, evaluated and reported through the use of the TNMCM, TNMCS and NMCB rates.

1.15.3.14.1. MC (%) = FMC Hours + PMC Hours x 100

Possessed Hours

1.15.3.14.2. Total Not Mission Capable Maintenance (TNMCM) Rate. Though a lagging indicator, the TNMCM rate is perhaps the most common and useful metric for determining if maintenance is being performed quickly and accurately. It is the average percentage of possessed aircraft (calculated monthly/annually) that are unable to meet primary assigned missions for maintenance reasons (excluding aircraft in "B-Type" possession identifier code status). Any aircraft that is unable to meet any of its wartime missions is considered Not Mission Capable (NMC). The TNMCM is the amount of time aircraft are in NMCM plus Not Mission Capable Both (NMCB) status. Maintenance managers should look for a relationship between other metrics such as R/R, BR and FR to the TNMCM Rate. A strong correlation could indicate heavy workloads (e.g., people are over tasked), poor management, training problems or poor maintenance practices. The TNMCM is also called "out for maintenance."

1.15.3.14.2.1. TNMCM (%) = NMCM Hrs + NMCB Hrs x 100

Possessed Hours

1.15.3.14.3. Total Not Mission Capable Supply (TNMCS) Rate. Though this lagging metric may seem a "LRS responsibility" because it is principally driven by availability of spare parts, it is often directly indicative of maintenance practices. For instance, maintenance can keep the

rate lower by consolidating feasible cannibalization actions to as few aircraft as practical. This monthly/annual metric is the average percentage of possessed aircraft that are unable to meet primary missions for supply reasons. The TNMCS rate is the time aircraft are in NMCS plus NMCB status. TNMCS is based on the number of airframes out for mission capable (MICAP) parts that prevent the airframes from performing their mission (NMCS is not the number of parts that are MICAP). Maintenance managers must closely monitor the relationship between the Cannibalization Rate (CR) and TNMCS. TNMCS is also called "out for supply."

1.15.3.14.3.1. TNMCS (%) = NMCS Hrs + NMCB Hrs x 100

Possessed Hours

1.15.3.15. Primary Aerospace Vehicle Authorized (PAA) vs. Possessed (P/P) Rate. PAA are those aircraft authorized for a unit to perform their operational mission(s). It forms the basis to allocate operating resources to include manpower, support equipment, and flying hour funds. This metric shows a comparison of the unit's PAA versus average possessed aircraft for a particular time period. It identifies units below PAA so MAJCOM/HAF can assist in reallocating resources to support contingency taskings or to reduce flying hour requirements. Reference AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*.

1.15.3.15.1. P/P (%) = Average Number of Possessed Aircraft x 100

Total Unit Aircraft PAA

1.15.3.16. Personnel Availability (PA). Personnel availability simply provides a measure of manning status. It compares the number of personnel authorized to the number of personnel available. A maintenance manager may find it useful to review data based on skill level. In which case, compare the personnel authorized to the number of personnel holding a specific skill level. The number authorized is based on the Unit Manning Document. The number available includes only those available for duty, which excludes those who are reassigned, on leave, Temporary Duty (TDY), etc.

1.15.3.16.1. PA (%) = Total Number of Personnel Available x 100

Total Number of Personnel Authorized

1.15.3.17. Phase Flow (PF) Average. This leading metric measures the average phase time remaining on the fleet. It should be approximately half the inspection interval and should appear as a diagonal line when the fleet PF average is portrayed graphically in a TDI. A phase TDI is a product that shows hours remaining until the next phase on each aircraft possessed by a unit. However, a unit may have good reasons to manage its phase flow so the data points define a pattern other than a diagonal line. For example, in preparation for a long-distance overseas deployment, a unit may need to build up the average phase time (average fleet time) remaining on its fleet, because phase capability may be limited for a short time. Beware of gaps or groupings, especially on aircraft with less than half the time remaining to phase.

1.15.3.17.1. PF = Total Hours of All Possessed Aircraft Until Next Phase

Total Possessed Aircraft Assigned

1.15.3.18. Repair Cycle Processing (RCP) Total Time/Rate. Though primarily considered a "supply-related metric," this indicator can be an excellent local management tool. It is the average time expressed in days that an unserviceable asset spends in the repair cycle at a unit. This indicator is

for repairable aircraft parts only; it does not include engines or support equipment. The clock begins when the replacement part is issued to the flightline and ends when the serviceable asset is returned from the repair facility to the parts store for reissue. To improve the process of repairing parts, the different steps in that process must be measured.

1.15.3.18.1. RCP (%) = (Pre-Mx + Repair + Post-Mx Days) – AWP Days x 100

Number of Items Turned In

1.15.3.19. Repeat/Recurring (R/R) Discrepancy Rate. This metric is a leading indicator and perhaps the most important and accurate measure of the unit's maintenance quality. It is the average number of repeat and recur system malfunctions compared to the total number of aircrew discrepancies. A repeat discrepancy is when the same malfunction occurs in a system/subsystem on the next sortie/sortie attempt after the discrepancy originally occurred and was cleared by maintenance (including CNDs/no-defect-noted, etc). A recurring discrepancy is when the same system/subsystem malfunction occurs on the 2nd thru 4th flights/attempted flights after the original flight in which the malfunction occurred and was cleared by maintenance (including CNDs/no-defect-noted, etc). A high R/R rate may indicate lack of thorough troubleshooting; inordinate pressure to commit aircraft to the flying schedule for subsequent sorties; or a lack of experienced, qualified or trained technicians. The more complex the weapon system and the greater the operations tempo, the more susceptible a unit is for repeat or recurring discrepancies. Examine each R/R discrepancy and seek root causes and fixes. The goal should be to keep all repeat and recurring discrepancies to a minimum.

1.15.3.19.1. R/R (%) = Total Repeats + Total Recurs x 100

Total Pilot Reported Discrepancies

1.15.3.20. Upgrade Training (UT) Rate. This metric reflects the percentage of technicians in upgrade training. The goal should be to keep the combined total less than 40 percent because the higher the number, the greater the training burden. Training should be given high priority, as the number of personnel in training (and more importantly, the quality of the maintenance training program) invariably affects other aircraft metrics (e.g., R/R or FR) in ways that may not be immediately obvious.

1.15.3.20.1. UT (%) = Number of Technicians in Upgrade Training x 100

Total Number of Technicians

1.15.3.21. Utilization (UTE) Rate. The UTE rate is a leading indicator, but serves as a yardstick for how well the maintenance organization supports the unit’s mission. The UTE rate is the average number of sorties or hours flown per Primary Aerospace vehicle Authorized (PAA) per month as found in the HAF/A3O PB documents. This measurement is primarily used by operations in planning the unit's flying hour program. Maintenance uses this measurement to show usage of assigned aircraft. Since UTE rates are used for planning, actual UTE rates (computed at the end of the month) are used to evaluate the unit's monthly accomplishment against the annual plan. Typically, Combat AF (CAF) units measure the sortie UTE rate, while MAF units measure the hourly UTE rate to more accurately measure the combined performance of operations and maintenance.

1.15.3.21.1. UTE Rate = Sorties (or hours) Flown per Month .

PAA per Month

1.16. Communications. Effective maintenance requires efficient communication. Radios must be available to expedite personnel, equipment, materiel, and maintenance data throughout the maintenance complex. An authorized communication system must be selected with the capability to effectively support the maintenance communication requirements, including mobility and host base interoperability IAW AFI 33-202, *Network and Computer Security*. Wireless LANs (WLANs) must comply with all applicable AF 33-series publications. Radios shall be frequency-programmable. Unit commanders shall develop communication plans according to mission requirements.

1.16.1. MAJCOMS will develop guidance on the use and proper control of personal electronic and communication devices (eg., cell phones, pagers, portable music/video players, electronic games) on the flightline, munitions areas, hangars, and/or other industrial work areas.

1.16.1. **(ANG)** Personal electronic or communication devices (e.g., cell phones, beepers, pagers, portable music/video players, electronic games) are prohibited on the flightline, munitions areas, hangars, and/or other industrial work areas. This prohibition does not include common areas such as office areas, break or locker/ready rooms. Government equipment issued for the performance of official duties must be appropriately marked/identified and are exempt from this prohibition. This guidance will be included in a coordinated Wing Operating Instruction.

1.17. Duty Shifts and Rest Periods. During normal operations, maintenance personnel will be scheduled for duty based on a goal of a 40-hour work week. For airlift, helicopter, bomber, Unmanned (Combat) Aircraft Systems (UAS/UCAS) and tanker units with extended flying periods, maintenance personnel will have their duty hours aligned to provide the best mission support.

1.17.1. Supervision at all levels will be equitably distributed to cover all duty periods.

1.17.2. The following guidance establishes maximum duty periods and minimum rest periods for all personnel assigned to a maintenance activity. MXG/CCs may waive the following provisions during emergencies and advanced defense readiness conditions.

1.17.3. Duty time begins when personnel report for duty and ends when their supervisor releases them. A rest period is a block of time that gives a person the opportunity for at least 8 hours of uninterrupted sleep in a 24-hour period.

1.17.4. Do not schedule personnel for more than 12 hours of continuous duty time. Provide a rest period after each shift. Time spent in exercise/contingency deployment processing lines and in-transit counts toward the total duty day, and may impact time available to perform maintenance at the destination. This policy includes MRTs. MXG/CCs are final approval authority for exceeding 12-hour limit up to a maximum of 16 hours.

1.17.5. Duty periods for crew chiefs and maintenance technicians traveling with their units' aircraft are normally controlled by the aircraft commander. The aircraft commander will:

1.17.5.1. Allow maintenance technicians the opportunity for a minimum of 8 consecutive hours of uninterrupted sleep in a 24-hour period.

1.17.5.2. If ground time warrants, develop a work and rest plan (not to exceed more than l2-hour work and rest cycle). The work and rest cycle should be adjusted to give maintenance personnel an adequate rest period prior to the departure of the aircraft if at all possible.

1.17.6. Personnel who work a maintenance shift and are assigned non-maintenance duty, such as charge of quarters, may exceed the 12-hour duty period provided rest is permitted while performing the non-maintenance duties.

1.17.7. Personnel who handle/load nuclear weapons and/or conventional munitions and egress explosives are limited to a 12-hour continuous duty period followed by a normal rest period. During emergencies and advanced readiness condition, the MXG/CC may waive this requirement. This rest period may not be waived for exercises or inspections. Refer to AFI 21-204 for additional requirements involving ICBM missile field operations.

1.17.8. In alert force or standby duty situations where facilities are available for resting, established norms may be exceeded. Adjust rest periods to allow for at least 8 hours of sleep when people on alert or standby are required to work.

1.17.9. Ensure individuals are afforded adequate rest periods and breaks. Consider climatic conditions when determining work schedules. Stop anyone if fatigue may jeopardize safety. In all cases, aircraft commanders/supervisors ensure aircraft maintenance personnel are not required to perform duty when they have reached the point of physical or mental fatigue rendering them incapable of performing their assigned duties safely and reliably. Local work/rest schedules for extreme temperatures are recommended by the Medical Group commander.

1.17.10. The duration of individual workers' assignment to swing-shift, mid-shift (where applicable), and servicing crew duties should accommodate mission requirements and personnel needs for career development. Rotation of personnel should be designed to provide optimum manpower and skill level/special certification coverage but prevent worker mental fatigue which can lead to burnout. Units are encouraged to employ scientific-based scheduling techniques and tools where available.

1.17.11. Fatigue management training should be provided to shift workers, schedulers, and supervisors. This training maximizes performance, enhances safety, and optimizes mission effectiveness. Training topics should include diet, hydration, exercise, circadian rhythm and sleep pattern management, and use of caffeinated products. MDG Human Performance Training Teams or Flight Medicine offices may provide this training at established forums such as the First term Airman Course (FTAC), Medical Right Start, and PME courses.

1.18. Maintenance Training. Maintenance training provides initial, recurring and advanced proficiency, qualification, or certification skills needed by a technician to perform duties in their primary AF Specialty Code (AFSC). The overall capability of a unit depends on the state of training for aircrew members and maintenance personnel. Training is essential to improving and sustaining unit capability and is one of the most important responsibilities of commanders and supervisors. Providing training in combat and sortie generation skills not normally integrated into peacetime operations (e.g., munitions and external fuel tank build-up, hot refueling) is particularly critical and requires special management attention. Commanders and supervisors must give priority support to training. When balancing resources, (e.g., aircraft, support equipment, facilities, tools, funding, personnel), maintenance training carries an equal priority with the operational training mission. For maintenance training policy and guidance, refer to AFI 36-2232, *Maintenance Training* and MAJCOM directives.

1.18.1. Cross-Utilization Training (CUT). CUT provides the unit internal flexibility by training individuals to perform tasks that are outside their primary AFSC. This training can offset periods of austere or low skill-level manning. It also enhances combat capability by developing a pool of qualified

personnel to draw upon during surges/combat sortie generation. Use care not to create a dependency upon CUT-trained personnel for every task. CUT is not a long-term fix or management solution for an AFSC shortfall. For emerging weapon systems, extensive CUT may be necessary until proper workforce AFSC balancing and assignment is achieved. Long-term CUT requirements will be approved by the MXG/CC. In these instances, MAJCOM career field managers will closely monitor the effects of CUT for adverse trends. Ensure the training records of individuals receiving CUT are appropriately documented. Address questions regarding CUT to the applicable MAJCOM AFSC Career Field Manager. ***NOTE:*** **Prohibitions in this guidance do not apply to UAS (Predator/Global Hawk) weapon systems or other weapon systems where the AF approved maintenance philosophy dictates the merger of AFSCs.**

1.18.1. **(ANG)** Address questions concerning CUT to NGB/A4MM. Important considerations for units include:

1.18.1.1. **(Added-ANG)** Identifying the type of tasks for CUT and determining which individuals receive that training.

1.18.1.2. **(Added-ANG)** Providing CUT so that personnel can work with little or no assistance.

1.18.1.3. **(Added-ANG)** Ensuring CUT does not interfere with skill level upgrade training or weapons system qualification training.

1.19. Maintenance Repair Priorities. Maintenance repair priorities are listed in AF Manual (AFMAN) 23-110, Vol 2, Part 13, Ch 3, Atch 3A-1, *USAF Supply Manual* Table 3A1.1. Supply Response Priority and Maintenance Repair Priority Designator. The table below (**Table 1.1.**) is intended as a guide and does not prohibit the production supervisor, in coordination with the Maintenance Operations Center (MOC), from changing the maintenance repair priority when warranted. Raising or lowering maintenance repair priorities does not necessarily require a corresponding change in the LRS delivery priority. During Operational Plan (OPLAN) 8044 or operational exercise, the preplanned maintenance flow determines job sequence. The maintenance repair priority and LRS delivery priorities are normally identical. However, the production supervisor may authorize the use of a less responsive LRS delivery priority.

Table 1.1. Maintenance Repair Priority Designators.

PRIORITY	APPLICATION
1	Aircraft on alert status, war plan or national emergency missions, including related Aerospace Ground Equipment (AGE), munitions and munitions support equipment (MSE).
2	Primary mission aircraft, related AGE, munitions, and munitions support equipment, for the first 8 work hours after landing or start of recovery or within 6 work hours of a scheduled launch, alert or test flight and during simulated generation/ORI. Air evacuation, rescue, weather mission aircraft, related AGE, munitions, and munitions support equipment. All transient support, and FAA aircraft. Flight or missile crew training simulator, other training equipment or related AGE required repair, which is impacting the mission by pre venting or delaying student training.
3	Primary mission aircraft, engines, air launched missiles and related AGE, munitions and munitions equipment, and equipment undergoing scheduled or unscheduled maintenance, if not performed or repaired will prevent or delay mission accomplishment. Transient air vehicles not otherwise listed. Administrative aircraft within 8 hours of scheduled flight or on alert status with standby crews. Time change requirements for nuclear weapons. Repair cycle assets to satisfy a MICAP condition. Spares not available in supply. Critical end items and spares not available in supply. Routine maintenance of aircrew or missile-training simulator, or other training devices or related AGE or sites and aircraft or equipment used for maintenance training. Avionics shop electronic AGE and automated test stations.
4	Routine or extensive repair of primary air mission and related AGE and repair cycle assets. Administrative aircraft undergoing scheduled or unscheduled maintenance. Routine maintenance of AGE, not otherwise listed above. WRM items due maintenance or inspection. Inspection, maintenance, and Time Compliance Technical Order (TCTO) compliance of mission support kit (MSK) or mobility readiness spares package (MRSP) materiel. Extensive repair of aircrew or missile training simulators, other training devices, or related AGE. Inspection, maintenance, and TCTO compliance of munitions and munitions equipment, excluding spares excess to base requirements not listed above. Scheduled calibration and unscheduled repairs on PME not listed above. Scheduled maintenance to include periodic inspections, routine TCTO, MCL, and TCIs. Primary mission CEM systems or equipment including associated AGE undergoing extensive repair or modification.

PRIORITY	APPLICATION
5	Non-tactical or non-primary-mission aircraft undergoing extensive repair. Fabrication and repair of aeronautical items not carrying a higher priority. Bench stock requirements. Extensive repair of aircrew training devices. Time change requirements not listed above. Routine repair of AGE and repair cycle assets. Alternate and other CEM systems or equipment, including associated AGE undergoing extensive repair or modification. Clearing routine delayed discrepancies on training equipment or AGE, and routine maintenance which will not impair or affect mission accomplishment. Equipment requirements.
6	Fabrication and repair of non-aeronautical items. Repair cycle asset shortages required to fill a peacetime operating stock authorization
7	Spares/repair cycle assets excess to base requirements.

1.20. AF Munitions Policy. AF Munitions Policy is contained in AFI 21-201, *Conventional Munitions Maintenance Management* and AF Nuclear Munitions Policy is contained in AFI 21-204*, Nuclear Weapons Maintenance Management*. MAJCOMs will develop and provide policy and guidance on the use of Missiles/Precision Guided Munitions (PGM), other limited or restricted use munitions and management of cumulative service life munitions (i.e., CBU-87/89). This will ensure munitions remain available and in reliable condition and at the same time provide a realistic training environment and support for exercise purposes.

1.20.1. Live and inert missiles (or electrical simulators) of the same type **must not be** loaded or flown together on an aircraft for any purpose. Live and inert (to include training or practice) bombs **must not be** loaded in/on the same dispenser/rack or flown on an aircraft load together. Any request to deviate from or waiver to this policy must be coordinated through the WWM, and must be submitted via official message to the MAJCOM Munitions Division, Weapons Safety, and Operations Weapons and Tactics/Training Divisions. The MAJCOM Munitions Division is the sole approval authority for these deviations/waivers. Test organizations may load and fly live and inert munitions on the same aircraft **for test missions only**, as long as the flight profile is IAW an approved test directive that has been through a Safety Review Board process and flight clearance through the applicable System Program Office SPO/Seek Eagle office has been properly obtained.

1.20.1.1. **(Added-ANG)** Command Missile Policy. To maintain our WRM missile reliability and availability, the following applies:

1.20.1.2. **(Added-ANG)** In addition to the Air Force Munitions Policy requirements, the Command Missile Policy applies to all versions of Tactical Air Missiles (eg, AIM-9, AGMs, and AIM-120 (AMRAAM)). Containerized/not containerized missiles are not used for peacetime loads, exercises, or inspections.

1.20.1.3. **(Added-ANG)** The total number of ready missiles (Category C) for these units may be one SCL per PAA. Units with continuous active alert commitments (includes home station and detachments) may add one standard missile load for each primary alert aircraft to their total. Missiles stored at detachments are placed in dead/AURC storage (Category A).

1.20.1.4. **(Added-ANG)** Tactical missiles may be flown for OPlan tasking, Noble Eagle (other Continental United States NORAD (CONR) taskings), air defense alert, Weapons System Evaluation Program (WSEP), and Operational Test and Evaluation (OT&E) Programs.

1.20.1.5. **(Added-ANG)** Missiles must not be electronically verified during or after Inspector General (IG), Operational Readiness Inspection (ORI), or local exercises on the field test set solely to determine missile reliability/serviceability.

1.20.1.6. **(Added-ANG)** A dedicated e-mail address must be established for units utilizing the Tactical Missile Reporting System (TMRS) program IAW applicable Technical Orders.

1.20.1.7. **(Added-ANG)** Tactical (TAC) Ferrying of Alert All-Up-Round (AUR) missiles:

1.20.1.7.1. **(Added-ANG)** For TAC ferry flights of a full AUR AIM-9, the umbilical connector must be connected. The Guidance Control System (GCS) requires power to the seeker head to keep it stabilized due to the internal gyros even if other parts of the missile are identified as unserviceable.

1.20.1.7.2. **(Added-ANG)** For TAC ferry flight of AIM-7. The AIM-7 umbilical shall be secured and shorted to prevent power to the missile.

1.20.1.7.3. **(Added-ANG)** Units requesting to TAC Ferry missile shall contact NGB Aircraft Maintenance Division, Armament Branch (NGB/A4MW) with missile serial numbers and the date of event.

1.20.1.8. **(Added-ANG)** Deicing fluid, fuel, and hydraulic fluid, are not inherently damaging to the missile, however, these fluids will not be sprayed directly on the missiles, especially avoiding the wing holes, aft end, and harness cover. If the missile is contaminated with any of these fluids the missile should be cleaned IAW the appropriate TO. Missiles do not need to be downloaded prior to deicing.

1.20.2. Request for waiver of, or deviation to, this policy will include as a minimum: 1). Operational Risk Assessment report and proposed controls to mitigate or eliminate hazards to personnel, damage to aircraft and support equipment or inadvertent employment of live ordnance, and, 2). A signed copy of the Test Requirement Plan, Test Plan, or Concept Employment Plan. Approved requests will remain valid only for the event requested and will not exceed 60 days.

1.20.3. Captive Air Training Munitions (CATM): Wings, fins and safe-arm handles on CATMs will not be removed. Safety pins/streamers for arming keys/safe-arm handles on CATMs may be removed for daily training/flying operations provided positive control and accountability is maintained for these items. Any CATM missiles used for exercises, Load Crew Training and inspections will be configured to the maximum extent possible with all safety devices and components to mirror the parent tactical munitions.

1.20.3.1. **(Added-ANG)** Any deviation or request for waiver to this policy shall be requested by official message and coordinated and approved by NGB Armament Branch, NGB Weapons Safety, and NGB Operations Weapons and Tactics/Training Division.

1.20.3.2. **(Added-ANG)** Command Missile Policy. To maintain our WRM missile reliability and availability, the following applies:

1.20.3.2.1. **(Added-ANG)** In addition to the Air Force Munitions Policy requirements, the Command Missile Policy applies to all versions of Tactical Air Missiles (eg, AIM-9, AGMs,

and AIM-120 (AMRAAM)). Containerized/not containerized missiles are not used for peacetime loads, exercises, or inspections.

1.20.3.2.2. **(Added-ANG)** The total number of ready missiles (Category C) for these units may be one SCL per PAA. Units with continuous active alert commitments (includes home station and detachments) may add one standard missile load for each primary alert aircraft to their total. Missiles stored at detachments are placed in dead/AURC storage (Category A).

1.20.3.2.3. **(Added-ANG)** Tactical missiles may be flown for OPlan tasking, Noble Eagle (other Continental United States NORAD (CONR) taskings), air defense alert, Weapons System Evaluation Program (WSEP), and Operational Test and Evaluation (OT&E) Programs.

1.20.3.2.3.1. **(Added-ANG)** Live missiles of one type and inert versions (or electronic simulators) of others may be loaded on aircraft participating at WSEP/Combat Archer, as applicable.

1.20.3.2.4. **(Added-ANG)** Missiles must not be electronically verified during or after Inspector General (IG), Operational Readiness Inspection (ORI), or local exercises on the field test set solely to determine missile reliability/serviceability.

1.20.3.2.5. **(Added-ANG)** A dedicated e-mail address must be established for units utilizing the Tactical Missile Reporting System (TMRS) program IAW applicable Technical Orders.

1.20.3.2.6. **(Added-ANG)** Tactical (TAC) Ferrying of Alert All-Up-Round (AUR) missiles:

1.20.3.2.6.1. **(Added-ANG)** For TAC ferry flights of a full AUR AIM-9 the umbilical connector must be connected. The Guidance Control System (GCS) requires power to the seeker head to keep it stabilized due to the internal gyros even if other parts of the missile are identified as unserviceable.

1.20.3.2.6.2. **(Added-ANG)** For TAC ferry flight of AIM-7. The AIM-7 umbilical secured and shorted to prevent power to the missile.

1.20.3.2.6.3. **(Added-ANG)** Units requesting to TAC Ferry missile shall contact NGB Aircraft Maintenance Division, Armament Branch (NGB/A4MW) with missile serial numbers and the date of event.

1.20.3.2.6.4. **(Added-ANG)** Aircraft transporting live missiles must not engage in Air-to-Air or Air-to-Ground training.

1.20.3.2.6.5. **(Added-ANG)** Partial configurations have not been approved by SEEK EAGLE for F-16 and F-15 units. Units flying CATM-120 must have wings and fins attached.

1.20.3.2.6.6. **(Added-ANG)** Deicing fluid, fuel, and hydraulic fluid, are not inherently damaging to the missile, however, these fluids will not be sprayed directly on the missiles, especially avoiding the wing holes, aft end, and harness cover. If the missile is contaminated with any of these fluids the missile should be cleaned IAW the appropriate TO. Missiles do not need to be downloaded prior to deicing.

1.21. Unit Committed Munitions List (UCML), Test/Training Munitions List (TTML). Operational units will use UCML's, Test/Training units (AETC and AFMC only (includes ARC gained units in these commands)) will use TTML's unless they already require a UCML (i.e., NORAD Committed). The

UCML/TTML is a list of primary munitions (PM), support munitions (SM), and limited-use munitions (LM) necessary to meet unit operational/test/training requirements and is published IAW this instruction. The list of PM cannot include more than 10 individual munitions or munitions family groups (MFG) combined per mission, design, and series (MDS) aircraft assigned. The UCML/TTML also specifies the minimum certified load crews required to meet unit requirements. MAJCOMS may supplement UCML/TTML processing, coordination and appendix requirements.

1.21.1. As a minimum, UCML/TTML's will be updated annually to identify all munitions tasked and/or required to support test/training or OPLANs and Designed Operational Capability (DOC) statements. Additional munitions may be included on the UCML/TTML as SM or LM munitions if required by the unit or designated by the MAJCOM (A4M performs this in the ANG) to support test, training, or deployment. The UCML/TTML is the base document for aircrew and load crew training munitions forecasts, authorizations and operations. Units will start their UCML/TTML validation in July, and have a coordinated input to the MAJCOM Munitions Division in August. MAJCOMs will supply approved UCML/TTML to the units in September. ***NOTE:*** Specified months not applicable to ANG process.

1.21.2. Unit changes to the UCML/TTML will be justified by Wing Weapons and Tactics, coordinated and processed through the WWM, Munitions Flight, MXG/CC and OG/CC before sending it to higher headquarters and MAJCOM.

1.21.3. Standard Conventional Load (SCL) lists are not part of the UCML/TTML. They are stand-alone documents.

1.21.4. The WWM determines the number of certified load crews depicted on the UCML based on Unit Type Code (UTC) requirements identified in applicable DOC statements. The WWM determines the number of load crews depicted on the TTML as required to meet training unit syllabus and/or test unit mission requirements.

1.22. Associate Unit Program. The USAF employs the Associate Unit program in some locations where active and ARC units are collocated and share aircraft, equipment, facilities, and other resources. In these units, organizations and functions in aircraft maintenance may be staffed jointly by active and ARC personnel; may be manned exclusively by active personnel who provide equal service and oversight to ARC personnel; or may be manned by ARC personnel who provide equal service and oversight to active personnel. In these organizations, memoranda of agreement (MOA), joint unit instructions, and/or wing instructions, group/squadron OIs will be coordinated between the respective MXG/CCs and will be applicable to both the active and ARC associate unit partner organizations. Submit MOAs between active duty and ARC units to the respective MAJCOMs for approval.

1.22. (ANG) For blended and reverse associate units where active and ANG personnel are incorporated as a single unit and the ANG "owns" the aircraft, equipment and other resources these units will follow ANG instructions, supplements and other ANG guidance pertinent to the aircraft maintenance organization.

1.23. Individual Mobilization Augmentees (IMA). The AFRC provides AMUs with manpower augmentation through IMA authorizations. Refer to AFI 36-2115, *Assignments within the Reserve Components*, AFI 36-2619, *Military Personnel Appropriation (MPA) Man-Day Program,* AFI 36-2629 *Individual Mobilization Augmentee Management,* AFI 36-3209, *Separation and Retirement Procedures*

for Air National Guard and AF Reserve Members, and AFMAN 36-8001, *Reserve Personnel Participation and Training Procedures*.

1.24. Civilian Visitors. Units will not permit civilian visitors to operate any item of military equipment when such operation could cause, or reasonably be perceived as causing an increased safety risk.

1.24.1. Civilian visitors include:

1.24.1.1. AF family members who are not employed by the AF or assigned to a military service.

1.24.1.2. All civilians who are visiting another unit/installation and are not performing their normally assigned duties.

1.24.1.3. Retired DoD employees.

1.24.2. Civilian employees, contractor employees, and other civilian personnel who must operate AF equipment as part of their assigned duties are not considered civilian visitors.

1.24.3. This policy is effective regardless of how closely military personnel supervise the civilian visitors. In addition, civilian visitors will not operate any AF equipment, specialized vehicles, and any other equipment that requires training to operate, unless they have been specifically trained in the operation of such equipment.

1.24.4. Civilian visitors may not be allowed in the flightline area if munitions are present IAW AFMAN 91-201 explosive siting criteria.

1.24.5. This policy is not intended to preclude AF units from hosting civilian visitors and affording them the opportunity to see their AF at work.

1.25. Lean. Maintenance managers at all levels are encouraged to apply Smart Ops 21principles to their work activities. Utilize Smart Ops 21principles for substantial continuous improvement. The goal of Smart Ops 21 is to identify and eliminate waste. Contact your MAJCOM functional manager for a list of Smart Ops 21consulting and educational resources. MAJCOMs are encouraged to request waivers to policy barriers hindering Smart Ops 21activities as long as the intent of the policies are met.

Section 1B—ALC/AMARC ONLY

1.25. (ANG) The Smart Ops 21 functional manager is NGB/A4PE.

1.26. Maintenance Discipline. Maintenance discipline involves integrity in all aspects of the maintenance process. It is the responsibility of all maintenance personnel to comply with all written guidance to ensure required repairs, inspections, and documentation are completed in a safe, timely, and effective manner. Supervisors are responsible for enforcing and establishing a climate that promotes maintenance discipline. All personnel who fail to maintain maintenance discipline standards will be held accountable.

1.26.1. Compliance Terminology. For the purposes of this instruction, the following definitions apply:

1.26.1.1. ***Shall, Must, Will*** - Indicate mandatory requirements. (Will is also used to express a declaration of purpose for a future event.)

1.26.1.2. ***Should*** - Indicates a preferred method of accomplishment.

1.26.1.3. ***May*** - Indicates an acceptable or suggested means of accomplishment.

1.27. Use of Technical Orders (TO) and Supplements. Use of the prescribed technical data to maintain aerospace equipment is mandatory and is described in AFI 21-303, *Technical Orders* and 00-5 series technical orders. The AF is modernizing the TO system using the Technical Order Concept of Operations (TO CONOPS) as a foundation. The goal of the modernization effort is to provide user friendly, technically accurate, and up-to-date digital technical data at the point of use that is acquired, sustained, distributed and available in digital format from a single point of access for all technical data users. TO users shall access technical data using a viewing device called an Electronic Tool (E-Tool). E-Tools (desktop and laptop computers, hand held devices, etc.) are common infrastructure allowing access to all logistics information systems and will automatically update TOs, provide automated change requests (similar to AFTO IMT 22) and integrate with other Maintenance Information Systems (MIS). AF TOs shall be available for downloading via the AF Portal either automatically or on a case-by-case basis. AF maintenance personnel will use E-Tools where available. Funding for E-Tools will be IAW the FY Annual Planning and Programming Guidance.

1.27.1. Supervisors will:

1.27.1.1. Strictly enforce adherence to and compliance with TOs and supplements.

1.27.2. Maintenance Group Planning Function will:

1.27.2.1. Establish procedures for shipping TOs, E-Tools, support equipment associated with E-Tools, and supplements to support mobility requirements.

1.27.3. Maintenance Support Group will:

1.27.3.1. Establish and manage TOs and supplements according to TO 00-5-1 and AFI 33-360.

1.27.4. All personnel will:

1.27.4.1. Recommend improvements or corrections for TO deficiencies IAW TO 00-5-1. Personal e-mail/faxes are not acceptable methods of updating or revising TOs. The AFTO IMT 22 prescribed in TO 00-5-1 may be submitted as an attachment to an e-mail to report problems of a TO, however, replies to recommended changes are for information only. Official TO updates are the only valid authority for correcting a technical deficiency and implementing change.

1.27.4.2. Continually assess the currency, adequacy, availability, and condition of their TOs and supplements.

1.27.4.3. Ensure waivers to, deviations from, or additional technical data procedures are issued using approved official communication methods. Refer to AFMCMAN 21-1, *AF Materiel Command Technical Order System Procedures,* for assistanance procedures.

1.27.5. Maintenance Group Records Section will:

1.27.5.1. Ensure all authorized technical data variances are kept with aircraft/equipment historical records until no longer applicable.

1.27.6. MAJCOMs will ensure that any new or modified configurations or maintenance conditions are coordinated with, and approved by, the Program Manager (PM) (formerly known as System Manager) responsible for the operational safety, suitability, and effectiveness (OSS&E) of the systems and end-items prior to implementation.

1.28. Publications. MAJCOMs will supplement this AFI. Units must tailor procedures to the unique aspects of their own maintenance operation and publish directives (instructions, supplements, and, for functional areas, operating instructions according to AFI 33-360, for areas where more detailed guidance or specific procedures will ensure a smooth and efficient operation. Adhere to the following procedures:

1.28.1. Do not publish unit instructions or Operating Instructions (OI) to change or supplement TOs. Units must use procedures in AFI 21-303, and TO 00-5-1 to update TOs.

1.28.2. Coordinate directives with all appropriate unit agencies.

1.28.3. Conflicts between administrative and technical publications will be resolved in favor of the technical publication.

1.28.4. Conflicts between procedural technical publications and weapon system specific technical publications will be resolved in favor of the weapon system specific technical publication.

1.28.5. Conflicts between Air National Guard/AF Reserve and AF administrative publications are resolved IAW AFI 33-360.

1.28.6. Technical Data Checklists: These provide abbreviated step-by-step procedures for operation and maintenance of systems and equipment in the sequence deemed most practical, or to ascertain operational readiness of equipment and minimum serviceable condition**.** Develop, control and maintain checklists IAW AFI 21-303, TO 00-5-1, and MAJCOM instructions.

1.28.7. Functional Checklists: Functional Checklists are not required to be formatted IAW TO 00-5-1. Functional Checklists are required for use by functional areas(s) during actions such as aircraft crash, severe weather warning or evacuation, self-inspections, activity inspections etc. Checklists are developed by the functional area or using activity and as a minimum are titled and dated. **Functional Checklists are NOT used in place of or to circumvent technical data** for operation, servicing, inspection or maintenance of aircraft, aircraft systems and all other equipment supporting aircraft and munitions maintenance. MAJCOMs and/or unit supplements may provide additional guidance for management and use of checklists.

1.28.7.1. Functionals will review functional checklists annually

1.29. Waiver Request. MAJCOMs are not permitted to deviate from this instruction without receiving written approval from HQ USAF/A4M. Units must submit waiver requests through the MAJCOM. See Sample **Attachment 10** for template.

1.30. Operating Instructions (OI). OIs are not published to change AF instructions, policy or TOs. Wing or group instructions pertaining to maintenance are published as OIs IAW AFI 33-360. When crossing group lines, OIs must be coordinated and approved by the affected commanders and published as wing instructions. Wing instructions will be published when expanded guidance encompasses other group responsibilities. Management Operations Office will be the Office of Primary Responsibility (OPR) for maintenance policy guidance and consolidation. IAW AFI 33-360, units may supplement this instruction in lieu of creating individual OIs as mandated in this instruction.

1.30.1. Management Operations Office will ensure functionals review all OIs for accuracy, intent and necessity.

1.30.2. The appropriate safety function reviews any OI affecting munitions operations or safety; including all locally developed checklists, instructions, supplements, plans, or operating procedures relating to nuclear surety (AFI 91-101, *AF Nuclear Weapons Surety Program*).

1.31. Support Agreements (SA). Maintenance organizations may be tasked to support functions not related to the primary unit mission. Intra-service, inter-service, inter-command, and international support agreements outline the degree of support provided and the responsibilities of the supported function. The agreements must be developed and reviewed in terms of possible impact on the primary unit mission and all other existing agreements and fully coordinated with the Management Operations Office, Plans and Programs Office or the Logistics Readiness Squadron (LRS) plans function.

1.32. Performance-Based Activities. This section identifies the basic responsibilities for managing performance-based activities (e.g., contract maintenance, Most Efficient Organization, or High Performance Organization). Additional guidance may be found in AFI 63-124, *Performance-Based Services Acquisition (PBSA)* and AFI 38-203, *Commercial Activities Program.*

1.32.1. Contractors have historically provided significant support to the U.S. Armed Forces. Contractor support can augment existing capabilities, provide expanded sources of supplies and services, bridge gaps in the deployed force structure, leverage assets, and reduce dependence on U.S.-based maintenance. The war fighter's link to the contractor is through the contracting officer or the contracting officer's representative (e.g., QAR, COTR, QAE). For MEO and HPO, contact the unit commander.

1.32.2. Developing Performance-Based Requirements Documents. Performance-based requirements documents (e.g., Statement of Objectives, Statement of Work, Performance Work Statements) focus on desired outcomes and performance standards that communicate what the contactor is asked to provide. Requirements documents provide desired outcomes, performance standards, milestones (if appropriate), and metrics which not only measure the contractor's performance but reflect the management imperatives and initiatives that drive the AF (e.g., Mission Capable Rate) and other key efficiency and effectiveness metrics. Requirements documents do not provide "how to" details that dictate the contractor's organization, management, personnel development, or approach to completing work. The only exceptions are safety, environmental management, and security when the contractor operates on a military installation. Additionally, the contractor is required to follow applicable TOs when performing maintenance. Unlike MEO and HPO, contractor operations and personnel are not supervised by government personnel. Any changes to the scope of the work shall be reflected in an official change to the requirements document, which is provided to the contracting officer for modification of the contract.

1.32.3. HQ USAF/A4M Responsibilities:

1.32.3.1. Establish and approve policies and procedures for direction and management of the performance-based activity.

1.32.3.2. AF maintenance focal point for all inter-service and interagency matters pertaining to the performance-based activity.

1.32.3.3. Ensures requirements for measurement, documentation, and reporting of the performance-based activity performance exist.

1.32.3.4. Ensures policies and procedures contain provisions for continuation of required operation and services in the event of disruption, termination, or default of the performance-based activity.

1.32.4. MAJCOM Responsibilities:

1.32.4.1. Designates focal points for organizational, functional, and technical questions pertaining to each performance-based activity program.

1.32.4.2. Specifies measurement areas and performance levels required for aircraft, systems, and equipment operated or maintained by performance-based activities.

1.32.4.3. Specifies the forms, methods of documentation, and frequency of reporting used to assess perfmance-based activities and ensures these requirements are included in the PMAP.

1.32.4.4. Approves base-level requests that would permit a single Federal Aviation Administration (FAA) certified Airframe/Powerplant (A/P) contractor technician maintaining contracted logistics support (CLS) aircraft to repair and sign off their own Red X's when sent to recover aircraft off-station.

1.32.4.5. Identifies the qualifications, training requirements and responsibilities for quality assurance personnel assigned to surveil performance-based activities.

1.32.4.6. Develops and publishes contingency procedures for support of continuing operations in the event of disruption, termination, or default of contract.

1.32.4.7. Ensures units with assigned quality assurance personnel meet requirements of AFI 63-124 and other applicable guidance.

1.32.5. Unit Responsibilities:

1.32.5.1. Designates a focal point for all functional, technical, and quality assurance matters pertaining to performance-based activities. Ensures the organizational relationship, physical location, and lines of communication between the Functional Director/Commander, quality assurance personnel, contracting officer, and the performance-based activity, promote efficiency and continuity of operations. If maintenance requires technical assistance for evaluation and/or repair beyond TO limits, the request shall be made IAW AFMCMAN 21-1.

1.32.5.2. Ensures that a focal point (e.g., Environmental Coordinator) is identified as the MXG (or equivalent) for all Environmental, Safety, and Occupational Health requirements, compliance, and, as appropriate, worker protection issues for affecting performance-based activities. The Environmental Coordinator focal point will lead the installation Candidate Process analysis program as identified in AFPD 90-8, *Environmental, Safety, and Occupational Health*/AFI 32-7080/7086 and assist installation tenants and other organizations as required."

1.32.6. In coordination with the contracting officer and the MXG/CC (or equivalent), provide specific guidance to the performance-based activity to ensure proper maintenance discipline and flight worthiness of aircraft and subsystems.

1.33. Maintenance Information Systems (MIS). MIS refers to automated maintenance information systems included in the maintenance portfolio and the AF Knowledge Services (AFKS). MIS includes systems and applications that support and enable maintenance business processes. MIS will be used to document maintenance actions. MIS or work control documents (WCD) and aircraft forms will be docu-

mented by the individual completing the task. MIS provides maintenance supervisors with products to evaluate organizational effectiveness and to aid in decision-making processes at all levels. As the maintenance portfolio owner, AF/A4M has central authority for policy and guidance covering all MIS IAW applicable AF 33-series publications. AF/A4M must have control over the proliferation of unit- or MAJCOM-unique MIS. If a unit desires to use a system other than the authorized standard MIS, whether commercial off-the-shelf (COTS), government off-the-shelf (GOTS) or locally generated, the unit must submit a request for permission to their MAJCOM 3-digit Maintenance Management Division (e.g., A4M, A4N, A4D). MAJCOM 3-digits functional managers shall coordinate on all requests and forward through the MAJCOM 2-digit to AF/A4M for final consideration/approval via written or e-mail means.

1.33.1. MIS Data. Data contained, entered, and retrieved in MIS is "Sensitive/For Official Use Only (FOUO)." Safeguards have been put in place to ensure control of this "Sensitive/FOUO" data with access through "military only" systems. Use is limited to authorized personnel who have been granted access through a controlled process. Each MIS has additional protection with unique, individually granted, need-to-know USERID/Password assurances. It is vital, especially during contingency operations, to capture maintenance data at every location to provide in-depth current/after action analysis of AF, MAJCOM, and unit efforts for deployments and contingencies.

1.34. Maintenance Management Metrics. Metrics provide a measurement of performance and capability. Leaders, supervisors and technicians must have accurate and reliable information to make decisions. Primary concerns of maintenance managers are how well the unit is meeting mission requirements, how to improve equipment performance, identifying emerging support problems, and projecting future trends. Maintenance management metrics—sometimes called quality performance measures or indicators—are a crucial form of information used by maintenance leaders to improve the performance of maintenance organizations, equipment and people when compared with established goals and standards. Metrics often take the form of an "On-time Delivery Rate Graph" or a "Status of Personnel Training Slide," presenting a gauge of an organization's effectiveness and efficiency. Properly used, metrics are roadmaps that help determine where you've been, where you're going, and how (or if) you're going to get there.

1.34.1. The overarching objective of AF maintenance is to maintain aerospace equipment in a safe, serviceable and ready condition to meet mission needs. Maintenance management metrics serve this overarching objective and shall be established or maintained by Headquarters AF, Major Commands, Wings and/or Squadrons to evaluate/improve equipment condition, personnel skills and long-term fleet health. Metrics shall be used at all levels of command to drive improved performance and adhere to well-established guidelines. Metrics must be:

1.34.1.1. Accurate and useful for decision-making.

1.34.1.2. Consistent and clearly linked to goals/standards.

1.34.1.3. Clearly understood and communicated.

1.34.1.4. Based on a measurable, well-defined process.

1.34.2. Analysis is crucial to improving organizational performance and is the key component of the metrics management process. Commanders and maintenance managers must properly evaluate maintenance metrics and rely upon the maintenance analysis section for unbiased information. Analysis sections shall draw upon information from various maintenance information systems for data. A good maintenance manager does not strive to "chase numbers" for the sake of looking good. However, the

manager uses metrics to focus resources and personnel to improve maintenance processes. Managers must also clearly understand and communicate the crucial linkage between goals, standards and metrics. The AF sets goals and standards for organizations, personnel and weapons systems that facilitate evaluation, comparisons and improvements. These standards are published separately by senior leadership and should be clearly understood at all levels of command. Leaders at every level must also support analysis and review metrics to properly drive improved performance. Maintenance analysts manage and track this process, but maintenance metrics, and the resulting improvements they drive, are inherently a leadership responsibility.

1.35. Communications. Effective maintenance requires efficient communications. Radios must be available to expedite personnel, equipment, materiel, and maintenance data throughout the maintenance complex. An authorized communication system must be selected with the capability to effectively support the maintenance communication requirements, including mobility and host base interoperability IAW AFI 33-202, *Network and Computer Security.*. Wireless LANs (WLANs) must comply with all applicable AF 33-series publications. Radios shall be frequency-programmable. Unit commanders shall develop communication plans according to mission requirements.

1.35.1. Personal electronic or communication devices (e.g., cell phones, beepers, pagers, portable music/video players, electronic games) are prohibited on the flightline, munitions areas, hangars, and/or other industrial work areas. This prohibition does not include common areas such as office areas, break or locker/ready rooms. Government equipment issued for the performance of official duties must be appropriately marked/identified and are exempt from this prohibition.

1.36. Maintenance Training. Maintenance training provides initial, recurring and advanced proficiency, qualification, or certification skills needed by a technician to perform duties in their primary series. The overall capability of a unit depends on the state of training for maintenance personnel. Training is essential to improving and sustaining unit capability and is one of the most important responsibilities of commanders and supervisors. Commanders and supervisors must give priority support to training. When balancing resources, (e.g., aircraft, support equipment, facilities, tools, funding, personnel), maintenance training carries an equal priority with the production workload. For maintenance training policy and guidance, refer to AFMCI 21-108, *Maintenance Training and Production Acceptance Certification Program*.

1.37. Individual Mobilization Augmentees (IMA). The AFRC provides AMUs with manpower augmentation through IMA authorizations. Refer to AFI 36-2115, *Assignments within the Reserve Components*, AFI 36-2619, *Military Personnel Appropriation (MPA) Man-Day Program,* AFI 36-2629 *Individual Mobilization Augmentee Management,* AFI 36-3209, *Separation and Retirement Procedures for Air National Guard and AF Reserve Members*, and AFMAN 36-8001, *Reserve Personnel Participation and Training Procedures*.

1.38. Civilian Visitors. Units will not permit civilian visitors to operate any item of military equipment when such operation could cause, or reasonably be perceived as causing an increased safety risk.

1.38.1. Civilian visitors include:

1.38.1.1. AF family members who are not employed by the AF or assigned to a military service.

1.38.1.2. All civilians who are visiting another unit/installation and are not performing their normally assigned duties.

1.38.1.3. Retired DoD employees.

1.38.2. Civilian employees, contractor employees, and other civilian personnel who must operate AF equipment as part of their assigned duties are not considered civilian visitors.

1.38.3. This policy is effective regardless of how closely military personnel supervise the civilian visitors. In addition, civilian visitors will not operate any AF equipment, specialized vehicles, and any other equipment that requires training to operate, unless they have been specifically trained in the operation of such equipment.

1.38.4. Civilian visitors may not be allowed in the flightline area if munitions are present IAW AFMAN 91-201 explosive siting criteria.

1.38.5. This policy is not intended to preclude AF units from hosting civilian visitors and affording them the opportunity to see their AF at work.

1.39. Lean. Maintenance managers at all levels are encouraged to apply Smart Ops 21principles to their work activities. Smart Ops 21is a “common sense” approach for substantial, continuous improvement. The goal of Smart Ops 21is to identify and eliminate waste. Contact your MAJCOM functional manager for a list of Smart Ops 21consulting and educational resources. MAJCOMs are encouraged to request waivers to policy barriers hindering Smart Ops 21activities as long as the intent of the policies are met.

Chapter 2

SAFETY

2.1. General Safety Guidance. Maintenance personnel are exposed to a large variety of hazardous situations, machinery, equipment, and chemicals. Most hazardous situations can be avoided by simply following procedures, asking for help when needed, and using personal protective equipment (PPE). Supervisors must be knowledgeable of and enforce AFOSHSTDs, TOs, and AF instructions applicable to their operations and ensure personnel are educated on safety requirements applicable to the job. Personnel work more safely and efficiently when properly trained, supervised and motivated.

2.2. AFOSH Guidance. Use AFOSHSTDs where federal standards either do not exist, do not adequately cover a function, contain less stringent criteria, or when consolidation of information is beneficial for use in the workplace. Use AF functional directives and technical data in conjunction with AFOSHSTDs. If conflicting guidance exists, the weapon system specific technical data will take precedence. See **Attachment 1** for AFOSHSTDs applicable to aircraft maintenance activities.

2.3. Hazards. All managers and supervisors must incorporate Operational Risk Management (ORM) within the workplace. Identify, eliminate or control, and document hazards to minimize risk associated with uncertainty in the decision-making process. Additional guidance can be found in AFI 90-901, *Operational Risk Management Program*, and AFPAM 90-902, *Operational Risk Management Guidelines and Tools*. Managers and supervisors at all levels must recognize the sources of hazards and apply appropriate safety practices to avoid injuries to personnel and damage to equipment by following established procedures and directives, asking for help when needed, and using the appropriate personnel protective equipment (PPE). Control potential physical, fire, and health hazards by proper training prior to job accomplishment, appropriate work procedures, and supervisory controls IAW AFOSHSTDs and TOs. When written directives are not available for the task being performed, the supervisor, with safety staff help, completes a job safety analysis (JSA) to ensure worker, equipment, and work environment compatibility. Procedures for JSAs are contained in AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH)*".

2.4. Hazard Abatement Program. Implement and follow the AF Hazard Abatement Program to protect all AF personnel from work-related deaths, injuries, and occupational illnesses. Under this program, personnel identify potential hazards within the work environment. After hazards have been identified, determine the adequacy of current directives and procedures, provide appropriate training to affected personnel, and provide a method to track and control the training and hazard correction/abatement processes. See **Attachment 1**, Table A-1 for appropriate AFOSHSTDs, TOs, and other applicable directives. Document safety plans, actions, hazards, and personnel training with the appropriate AF forms listed below.

2.4.1. AF IMT 3, **Hazard Abatement Plan**; AFI 91-301.

2.4.2. AF IMT 55, **Employee Safety and Health Record**; AFI 91-301.

2.4.3. AF IMT 457, **USAF Hazard Report**; AFI 91-202, *USAF Mishap Prevention Program*.

2.4.4. AF Form 1118, **Notice of Hazard**; AFI 91-301.

2.5. Safety Equipment. Hazards should be engineered out, isolated, guarded against or a safer chemical used as a substitute whenever possible before considering the use of PPE. PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering or administrative controls. When PPE is required ensure personnel are provided the appropriate PPE for the hazard and are trained in its use, inspection and care. Contact the installation ground safety or Bioenvironmental Engineering (BE) for assistance in the selection of PPE. Review AFOSHSTD 91-501, *Air Force Consolidated Occupational Safety Standard* for additional information on PPE.

2.6. AF Mishap Prevention Program. Implement and follow AFI 91-202 to protect AF resources. All AF personnel have the responsibility under the mishap prevention program to identify workplace hazards, to include equipment and environmental situations that places AF personnel, equipment, or facilities at risk. After hazards have been identified, assess the risks associated with each hazard, determine and take action(s) needed to reduce the risk by: engineering the hazard out; or imposing procedural actions (operational limits, frequent inspections, protective equipment, or stopping until corrective action is taken); and/or educating and training personnel on the hazards and the safety procedures to be followed to reduce the chances of a mishap occurring. Ensure all personnel receive safety, fire protection, and health on-the job training upon initial assignment and whenever there is a change in equipment, procedures, processes or safety, fire protection, and health requirements. Well-trained and educated personnel are the greatest deterrent to mishaps in the workplace. Supervisors must document safety-related training on AF IMT 55, **Employee Safety and Health Record,** IAW AFI 91-301.

2.6.1. **(Added-ANG)** As a minimum, the following will be documented on the AF IMT 55.

2.6.1.1. **(Added-ANG)** HAZCOM training.

2.6.1.2. **(Added-ANG)** Fall arrest training.

2.6.1.3. **(Added-ANG)** Fire safety.

2.6.1.4. **(Added-ANG)** Fire Extinguisher.

2.6.1.5. **(Added-ANG)** Lockout/Tagout.

2.6.1.6. **(Added-ANG)** Hearing conservation.

2.6.1.7. **(Added-ANG)** PPE training.

2.6.1.8. **(Added-ANG)** Ladder Safety.

2.6.1.9. **(Added-ANG)** Manual lifting training.

2.6.1.10. **(Added-ANG)** Confined Space training.

2.6.1.11. **(Added-ANG)** ORM training.

2.6.1.12. **(Added-ANG)** Explosive safety training.

2.6.1.13. **(Added-ANG)** CPR training.

2.6.1.14. **(Added-ANG)** Heat/cold stress training.

2.6.1.15. **(Added-ANG)** Respiratory protection.

2.6.1.16. **(Added-ANG)** Fetal Protection.

2.6.1.17. **(Added-ANG)** Occupational Health Physical requirements.

2.6.1.18. **(Added-ANG)** Supervisor's Safety Training.

2.7. Safety Inspections. Accomplish hazard assessment and identification through the application of occupational safety, fire prevention, and health inspections, evaluations, and surveys. Supervisors perform self-inspections to assess the safety environment of the unit. Most AFOSHSTDs contain sample checklists for unit self-inspections. Also, use locally developed checklists tailored to specific unit requirements. Personnel from wing or base-level safety, BE, Fire Protection, and environmental inspectors conduct unit inspections, evaluations, and surveys according to AFI 91-301 and AFI 32-7086, *Hazardous Materials Management*.

2.7.1. Occupational Safety and Health Administration (OSHA) officials, as representatives of the Secretary of Labor, may conduct inspections of non military-unique workplaces and operations where AF civilian personnel work. (The inspections may be unannounced). OSHA inspectors may question or privately interview any employee, supervisory employee, or official in charge of an operation or workplace.

2.7.2. Federal OSHA officials may perform OSH inspections of AF workplaces in areas where the US holds exclusive federal jurisdiction (including government owned contractor operated facilities).

2.7.3. State OSHA officials, operating under a federally approved plan and subject to the terms of any variance, tolerance, or exemption granted by the Department of Labor, may enforce state OSHA standards in contractor workplaces. At overseas location, local government agencies may conduct inspections of AF operations where host nation personnel are employed or contractor facilities or operations as stipulated in the status of forces or country-to-country agreement IAW AFI 91-301.

2.8. Flightline Safety. Adhere to aircraft flightline safety guidance in AFOSHSTD 91-100; *Aircraft Flightline-Ground Operations and Activities,* TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*; and equipment TOs. AFOSHSTD 91-100 contains safety guidance for towing and taxiing aircraft, aircraft jacking operations, aircraft cleaning and decontamination, aircraft tire mounting and servicing operations, flightline vehicle operations, and hot refueling. TO 00-25-172 contains safety guidance for aircraft servicing operations (all gaseous and liquid servicing), aircraft grounding and bonding, concurrent servicing operations (CSO), hot refueling, and combat or contingency operations. Follow established procedures in AFOSHSTD 48-20, *Occupational Noise and Hearing Conservation Program*, when operating AGE or auxiliary power units.

2.9. Flightline Driving. Motor vehicles operating on the flightline present a clear and possible danger to aircraft, equipment, and ground personnel. Guard against carelessness, haste, and disregard of safety standards. These factors are the primary sources of collisions and personnel injury. All operators of vehicles on the flightline must first obtain training and possess a valid flightline driving permit. Follow the general safety requirements for flightline vehicle operations found in AFOSHSTD 91-100 and AFJMAN 24-306, *Manual for the Wheeled Vehicle Driver,* AFI 13-213*, Airfield Management and Base Operations,* and local instructions. Supervisors will familiarize all personnel authorized to operate vehicles on the flightline with the aircraft marshaling signals found in AFI 11-218, *Aircraft Operation and Movement on the Ground*.

2.10. Work Center Safety Guidance. Use the general work center safety guidance in AFOSHSTD 91-66*, General Industrial Operations*, AFOSHSTD 91-100*,* equipment TOs, and local instructions. Follow AFOSHSTD 91-66 and AFSOSHSTD 91-501, *AF Consolidated Occupational Safety Standard*, for

safe practices in operation and maintenance of base facilities, such as, buildings and grounds, general housekeeping, ladders, office safety practices, emergency eyewash and showers, and finger ring policies. It also addresses safety precautions for electrical facilities and electronic equipment, such as, electrical emergency equipment, protective equipment, fire prevention, cardiopulmonary resuscitation (CPR), first aid training, clothing and jewelry. It also contains guidance for aircraft hangar operations, tool safety, material handling, fall protection, housekeeping, and operation and maintenance of compressed air systems, maintenance stands, lifting devices, and aerospace ground equipment (AGE). See **Attachment 1** for AFOSHSTDs applicable to aircraft maintenance activities.

2.11. Confined Spaces. A confined space is any area that is large enough to bodily enter; and has limited/restricted means of entry or exit; and is not designed for continuous human occupancy. The hazards associated with confined spaces are numerous, some example of hazards workers may encounter include atmospheric hazards such as an oxygen enriched or depleted environment; flammable, explosive and toxic gases; and engulfment or entrapment hazards. Many of these hazards are not readily apparent, detectable by odor, or visible, which may result in workers entering confined spaces without consideration of the potential dangers. Commanders, functional managers, and supervisors must ensure all confined spaces that fall under their purview are properly identified, both permit and non-permit required, and implement a confined spaces program as outlined in AFOSHSTD 91-25, *Confined Spaces*. Also see AFOSHSTD 48-137, *Respiratory Protection Program*, and TO 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells*, for specific requirements. Supervisors will ensure all personnel required to enter a confined space are properly trained, equipped, and qualified and that the training is documented prior to entry. For assistance in establishing an effective confined space program contact the installation ground safety office.

2.12. Munitions Safety Guidance. Use munitions safety requirements found in AFMAN 91-201, *Explosive Safety Standards*; 11A-, 11P-, and 13A-series TOs (explosive and egress handling safety); AFI 21-112, *Aircrew Egress System Maintenance*; and specific equipment TOs. AFMAN 91-201 contains safety topics, such as, explosive safety program elements, explosive facility licenses, quantity distance criteria, handling of aircraft, remotely piloted vehicles and drones containing explosives, fire protection, storage and compatibility standards, transportation, etc. The 11, 11A-, 11K-, 11P-, 13A-, and 21M- series TOs deal with the specifics of handling and maintaining explosive items or components. AFI 21-112 pertains to the handling of egress and escape systems and personnel training, certification, and decertification.

2.13. Lockout and Tagout Concept. Use procedures to isolate machinery or equipment (in off-equipment areas) from all potentially hazardous energy. When the unexpected energizing, startup, or release of stored energy could cause injury, machinery or equipment is locked out or tagged out before qualified personnel perform any servicing or maintenance. Instruct all personnel in the safety significance of lockout or tagout procedures. Find complete guidance for instituting an effective program in AFOSHSTD 91-501.

2.14. Warning Tags. For on-equipment aircraft maintenance, use the AF Form 1492, **Warning Tag**, to "flag" a condition that could cause damage or injury if ignored. The tag is designed to preclude the inadvertent activation of a system that should not be activated. Do not use the AF Form 979, **Danger Tag**, for on-equipment aircraft maintenance. Warning tags will be used during maintenance actions as required by applicable technical data, and/or local procedures. They are not intended for in-flight use. If a system is required to be de-activated for flight (eg., thrust reversers, galley oven etc.), the system will be deacti-

vated using a circuit breaker collar, or other approved method, and an applicable warning statement entered in the AFTO Form/IMT 781A IAW TO 00-20-1.

2.14.1. Use the perforated bottom portion of the tag to provide a "cross-check" with the aircraft forms. Insert this portion of the tag through the aircraft forms binder ring, aligned with its corresponding entry. Each warning tag must match an existing AFTO Form/IMT 781A entry. One AFTO Form/IMT 781A entry may contain several warning tags only if they pertain to the same discrepancy.

2.14.1.1. **(Added-ANG)** Units performing major inspections under the paperless ISO/HSC process may use a warning tag status board/tracking sheet to track warning tags associated with the inspection.

2.14.1.2. **(Added-ANG)** Units performing major inspections who do not utilize the paperless ISO/HSC concept may also utilize a warning tag status board or tracking sheet to document warning tags associated with the inspection. If utilized, the tracking sheet must be inserted into the front of the 781A. Upon completion of the inspection, the warning tag tracking sheet will become part of the AFTO 781 forms package and will remain a part of the historical record for each aircraft. An entry will also be input in the AFTO Form/IMT 781A and the applicable aircraft MIS identifying installation of warning tags.

2.14.1.3. **(Added-ANG)** If utilized, the warning tag status board/sheet will indicate the following information:

2.14.1.3.1. **(Added-ANG)** Warning Tag number.

2.14.1.3.2. **(Added-ANG)** Tag location. Example: Ext power access door.

2.14.1.3.3. **(Added-ANG)** Warning statement, including reason for restriction.

2.14.1.3.4. **(Added-ANG)** Reference to the original discrepancy in the 781A; See page__, Block__. (Not required for paperless ISO/HSC concept.).

2.14.1.3.5. **(Added-ANG)** Employee name, employee number, and date of individual installing warning tag.

2.14.1.3.6. **(Added-ANG)** Employee name, employee number, signature, and date of individual authorized to remove warning tag.

2.14.1.3.7. **(Added-ANG)** Personnel must review the warning tag tracking board/sheet prior to performing any aircraft maintenance.

2.14.1.3.8. **(Added-ANG)** Warning Tag discrepancy blocks must refer back to the original discrepancy that necessitated the Warning Tag by using the “see page __, item __” format. MIS documentation of Warning Tag discrepancies will be linked to the original JCN via the WCE/WES option. Do not enter “see page __, item __” statement when entering/clearing a Warning Tag discrepancy in the MIS.

2.14.1.3.9. **(Added-ANG)** The reason for the Warning Tag entry will be indicated in the discrepancy block. The Warning Tag discrepancy will also include an accompanying “Warning Note.” The entry and clearing of the Warning Note will follow documentation procedures outlined in T.O. 00-20-1. For example: (X Each)Warning Tag(s) (tag #(s)____) installed for removal/replacement of MLG selector valve to prevent operation of the landing gear system see page ____ item____NOTE: DO NOT OPERATE LANDING GEAR

2.14.1.3.10. **(Added-ANG)** Clearing the Warning Tag discrepancy will require only one authorized signature in the "inspected by" block and last name initial over the Red X symbol in the symbol column. Annotate the corrected by block with a statement such as: Warning tag(s) removed (IAW applicable technical data). Condition no longer exists.

2.14.1.3.11. **(Added-ANG)** When warning tags are grouped under one discrepancy, entries may be cleared individually by entering the following statement in the corrective action block: Warning Tag # __ removed, name of individual, employee number, and date. The Red X will be cleared by an authorized individual by following the procedures above.

2.14.1.3.12. **(Added-ANG)** Laminated Warning Tags (if used) will be controlled/issued in the Tool Accountability System (TAS),(if TAS is utilized), as a set. The Master Inventory Listing (MIL) will identify the set by purpose of use (e.g., ISO, Phase, HSC, engine change, gear change, etc.). As a minimum, the MIL will contain the number of tags in the set.

2.14.1.3.13. **(Added-ANG)** During scheduled maintenance (e.g., ISO, Phase, HSC) it may become necessary to operate a system/component with multiple warning tag(s) installed. Due to the complexity of operating systems in this environment, additional precautions must be followed. Whenever a system must be operated during scheduled maintenance when multiple warning tags are installed, the following procedures will be followed:

2.14.1.3.14. **(Added-ANG)** Obtain ISO/Phase Controller approval for operation of the affected system/component. Approval may be coordinated in advance.

2.14.1.3.15. **(Added-ANG)** The ISO/Phase Controller, or designated representative, will assign a qualified 7-level or above to supervise operation of the system/component.

2.14.1.3.16. **(Added-ANG)** The appointed supervisor will coordinate with all work centers that have warning tags installed on the system/component required for operation.

2.14.1.3.17. **(Added-ANG)** When components are removed from the aircraft, a qualified 7 level or above from each work center having warning tags installed on the affected system will verify adequate measures have been taken to safely operate the system/component. (e.g., install caps/plugs, pull additional circuit breakers, install temporary hoses.).

2.14.1.3.18. **(Added-ANG)** Before operation of the affected system/component, the immediate work area will be cleared of all personnel not directly involved in the operation.

2.14.1.3.19. **(Added-ANG)** Clear communication with all personnel involved in the maintenance action will be established and maintained throughout operation of the affected system/component.

2.14.2. Units establish procedures for amplification of these minimum requirements.

2.15. Danger Tags. Will only be used when an immediate hazard exists and specific precautions are required to protect personnel or property or as required by TOs, instructions, or other directed requirements. Tags will be placed on damaged equipment and immediate arrangements made for the equipment to be taken out of service and sent to the repair shop. Do not use the AF Form 979, **Danger Tag**, for on-equipment aircraft maintenance.

2.16. Contracted Operations.

2.16.1. AFI 91-301, *AF Occupational and Environmental Safety*, *Fire Protection, and Health (AFOSH)*, does not apply to private contractor employees or the working conditions of private contractor employees performimg work under government contracts. Contractors are solely responsible for compliance with OSHA standards for the protection of their employees. The AF's interest is to protect AF personnel, equipment and facilities meaning that specific safety requirements in AFOSH-STDs or AF TOs must be complied with by contractor personnel when non-compliance would clearly present the potential to harm or damage government resources. Examples include, but are not limited to, the lockout/tagout program, personnel requirements for specific tasks (e.g., aircraft towing), and use of certain safety equipment that prevents personnel from becoming incapacitated and subsequently damaging resources (e.g., eye protection during aircraft liquid oxygen servicing). The AF is not responsible for ensuring that contractors comply with "personal" safety requirements that do not present the potential to damage government resources (e.g., hearing protection, safety shoes, AF IMT 55, etc.). In addition, the government is not responsible for medical examinations, hearing testing, substance abuse testing, etc., for contractor employees.

2.16.2. Per AFMAN 91-201, *Explosive Safety Standards*, para 1.2.2, the contracting officer provides appropriate portions of AFMAN 91-201, Explosives Safety Standards to the contractor. Also, weapons safety personnel will advise the contractor on explosives safety standards.

2.17. Safety "Knock It Off." Due to the inherent danger to life, limb, and property associated with maintenance operations, personnel require a means to pause or terminate an operation or situation which they perceive is unsafe or too dangerous. When crew leaders become task-focused, junior personnel are often better able to assess the danger; however, deferring to the experience and judgment of the crew leader, they may choose to remain silent, missing an opportunity to break the mishap sequence chain. Operators have long used the call words "Knock it Off" in their profession; maintenance commanders and supervisors should foster the same culture in their units so that a simple, but recognizable "audible" from anyone can prevent a potential mishap.

2.18. Environmental, Safety and Occupational Health Management System (ESOHMS) or Environmental Management System (EMS).

2.18.1. All maintenance personnel shall incorporate consideration of the environmental aspects and impacts along with the health and safety hazards and risks of their maintenance operations in all aspects of their daily duties to demonstrate implementation of the installation ESOHMS IAW AFPD 90-8, *Environment, Safety, and Occupational Health*. All shop level personnel, unit environmental coordinators (UECs), identified organizational cross-functional ESOHMS team members, and commanders shall participate in the installation ESOHMS process. Commanders shall also participate in the management review process of the installation ESOHMS as appropriate.

2.18.2. All personnel shall complete Environmental Management System (EMS) awareness training. Organizational cross-functional EMS team members shall complete cross-functional EMS team member training when the next training class is offered at the installation. Commanders or EMS management personnel shall complete EMS manager training when the next EMS manager training class is offered at the installation.

2.19. Environmental and Health Working Groups (E&HWG).

2.19.1. Installation weapon system squadrons/organizations will plan to participate in the periodic Systems Group and Sustainment Group weapon system environmental and health working groups or their equivalent IAW AFPD 90-8. The purpose of the weapon system E&HWGs are to receive input about weapon system issues and concerns and provide updates on system changes that may impact the installation environment or the maintainer's health or safety.

2.19.2. Nuclear Weapons Intrinsic Radiation Safety. Nuclear-capable units must establish an intrinsic radiation (INRAD) program to ensure that INRAD exposure for all personnel conducting maintenance, on-load and off-load, transport, or storage of nuclear weapons is "as low as reasonably achievable" (ALARA). Find complete guidance for instituting an effective INRAD program in AFI 21-108, *Air Force Nuclear Weapons Intrinsic Radiation Safety Program.*

2.20. (Added-ANG) Use of Cordless tools and Mag light type flashlights on JP-8 serviced aircraft.

2.20.1. **(Added-ANG)** The use of cordless tools and Mag light type flashlights (or other battery powered tools/flashlights not approved for use in a Class I, Division I, hazardous atmosphere) are authorized for use on JP-8 serviced aircraft as long as the following is adhered to. Interiors (flight deck, fuselage etc.) are not considered a classed environment regardless if the aircraft is hangared or not.

2.20.1.1. **(Added-ANG)** Cordless tools must not be used during fuel servicing.

2.20.1.2. **(Added-ANG)** Cordless tools/lights must not be used during fuel system/tank/cell maintenance, to include removal of any panels that provide access to fuel cells/tanks, or probes, and engine enclosures.

2.20.1.3. **(Added-ANG)** Cordless tools must not be used within five feet of a fuel vent.

2.20.1.4. **(Added-ANG)** Batteries must not be charged or changed in a Class I hazardous atmosphere.

2.20.1.5. **(Added-ANG)** Cordless tools must not be used in the vicinity of known or suspected fuel leaks.

2.20.1.6. **(Added-ANG)** Mag light type flashlights may be used for all routine maintenance actions, to include fuel servicing, as long as they are not used within 1 foot of fuel vents and are 6 volts or less.

Chapter 3

GENERAL RESPONSIBILITIES FOR COMMANDERS AND KEY LEADERS

3.1. General. This chapter outlines responsibilities for commanders and key leaders involved in maintenance activities. Due to diversity of maintenance structures, responsibilities are assigned at the appropriate level as applicable. For the purpose of this instruction, in units where there is not a MXG/CC responsible for maintenance, the applicable civilian director of maintenance (DOM) will ensure compliance with all responsibilities in this instruction. ***NOTE:*** For the purpose of this instruction, contractor equivalents are as follows: A1C – aircraft servicer or apprentice/journeyman; SrA (1 year time in grade)--aircraft worker or field maintenance worker or higher; SSgt--aircraft mechanic or field maintenance mechanic or higher; TSgt--senior mechanic or craftsman; MSgt – lead mechanic; SMSgt/CMSgt/ maintenance officer--foreman or branch chief or higher. ***NOTE:*** The terms and responsibilities associated with the sections identified in this chapter may differ or may not be applicable to all units, based on unit size, mission, and MDS assigned (e.g., Rescue Squadrons).

3.2. Wing Commander (WG/CC) Responsibilities. The WG/CC allocates resources to meet all mission requirements. The WG/CC should ensure the maintenance organization is not overly tasked with augmentation duties outside maintenance functional areas. Where maintenance resources are not available, reductions in mission requirements may be necessary. Commanders organize maintenance according to AFI 38-101. The relationship between maintenance capability and successful mission accomplishment needs to be clearly understood. The WG/CC:

3.2.1. Establishes a close working relationship with Group Commanders to ensure an understanding of the requirements and capabilities of maintenance actions. Commanders will communicate and cooperate to enhance the wing's maintenance and sortie generation capability.

3.2.2. Conducts a daily "Wing Standup" meeting. The meeting should include, at a minimum, a review of the previous day, current day, and next day's activities, focused on identifying and resolving issues with executing the established flying and maintenance schedule.

3.2.2. **(ANG)** N/A to the ANG: As a minimum, conducts a weekly "Wing Standup" meeting. The meeting should include, at a minimum, a review of the previous week, current week, and next week's activities, focused on identifying and resolving issues with executing the established flying and maintenance schedule.

3.2.3. Implements the Base Support Plan augmentation force to support combat sortie generation activities.

3.2.4. Establishes and ensures the unit self-inspection program is implemented IAW AFI 90-201, *Inspector General Activities* and MAJCOM guidance.

3.2.5. Ensures a coordinated wing instruction is developed to control tools, equipment, and electronic devices from all wing agencies dispatching to aircraft parking/runway/taxi areas and MXG maintenance areas IAW **Chapter 1**, **Chapter 10**, and **Chapter 14** of this instruction.

3.2.6. Participates in quarterly QA and monthly scheduling meetings to keep in touch with maintenance issues.

3.2.7. Ensures combined MXG and OG participation in all organizational planning, programming, and budgeting actions. MXG and OG involvement in unit deployment/employment planning is criti-

cal to the development of the unit's combat capability and requires close coordination with the Maintenance Operations Flight Plans, Scheduling, and Documentation (MOF PS&D).

3.2.8. Ensures maintenance and operations develop a joint annual maintenance and flying program. Establishes a balance between the OG requirement for sorties and MXG maintenance capability. Establishes a joint MXG and OG planning and scheduling cycle to ensure the best use of aircraft, equipment, and personnel to accomplish short term sortie production and long term fleet health.

3.2.9. Provide augmentees for the nestable fuel tank build up (NFTBU) team as required to support any wartime UTC tasking.

3.2.10. Establishes a Crash Damaged or Disabled Aircraft Recovery (CDDAR) capability. Publishes a wing OI containing specific responsibilities for all applicable base agencies.

3.2.11. Ensures effective management of the Foreign Object Damage (FOD) Program and the Dropped Object Prevention (DOP) program.

3.2.11.1. Ensure a coordinated Wing OI is developed and all personnel are aware of the FOD and DOP programs.

3.3. Wing Vice Commander (WG/CV) Responsibilities. In addition to other duties as assigned by the WG/CC, the WG/CV will:

3.3.1. Manage the Foreign Object Damage (FOD) Program. The WG/CV is the FOD Prevention Program Manager and appoints a qualified technical sergeant (or above), civilian equivalent, or contractor if designated by performance work statement, as the FOD Prevention Monitor IAW **Chapter 14** of this instruction.

3.3.2. Manage the Dropped Object Prevention (DOP) Program. The WG/CV is the DOP Program Manager and appoints a qualified individual as the DOP Program Monitor IAW **Chapter 14** of this instruction.

3.4. Maintenance Group Commander (MXG/CC) Responsibilities. MXG/CCs (or equivalent) are responsible for the aircraft and equipment maintenance required to ensure balance between sortie production and fleet management. In addition to the responsibilities listed below, the MXG/CC must also ensure Additional Maintenance Requirements and Programs in **Chapter 14** of this instruction are complied with.

3.4.1. The MXG/CC (or equivalent) will:

3.4.1.1. Ensure manpower and all levels of supervision are equitably distributed for all duty periods based on manning and workload.

3.4.1.2. Institutionalize Operational Risk Management (ORM) within the workplace. Identify, eliminate or control, and document hazards to minimize risks IAW AFI 90-901, *Operational Risk Management Program.*

3.4.1.3. Ensure compliance with all applicable AFOSHSTDs and Mishap Prevention Program IAW AFI 91-202.

3.4.1.4. Establish a radiation protection program IAW AFOSHSTD 48-9, *Radio Frequency, Radiation (RFR) Safety Program*, when applicable.

3.4.1.5. Ensure organizational compliance with all Federal, State and local laws pertaining to environmental regulations and pollution prevention.

3.4.1.6. Ensure a focal point is identified as the MXG Environmental Coordinator for environmental, safety, and occupational health requirements, compliance, and worker protection issues. Refer to AFPD 90-8, AFI 32-7080, *Pollution Prevention Program*, and AFI 32-7086, *Hazardous Materials Management*, for additional guidance.

3.4.1.7. Ensure maintenance work schedules (days on/off and shift length) are established to consider local environmental conditions (heat/cold) for the safety and health of the assigned personnel.

3.4.1.8. Ensures strict adherence to technical data and management procedures.

3.4.1.9. Ensure maintenance is only performed by personnel who are trained, qualified, and certified, unless under the direct supervision of a trainer or certifier.

3.4.1.10. Ensure standardization of maintenance discipline, procedures, organizational structures, compliance, and management philosophy. The objectives of standardization are to ensure greater interoperability, improve maintenance quality and ensure maintenance effectiveness.

3.4.1.11. When applicable, ensure adherence to command war reserve materiel (WRM) missile and PGM control policy IAW AFI 21-201.

3.4.1.12. Establish local procedures for management and maintenance of assigned ground instructional training aircraft (GITA) to ensure they remain useful and safe within guidelines stated in **Chapter 14** of this instruction, AFI 84-103, *U.S. Air Force Heritage Program* and AFMAN 23-110-series.

3.4.1.13. Coordinate with the base fire department, safety, and airfield operations in developing adverse weather procedures for protecting aircraft and equipment IAW AFOSHSTD 91-100, AFI 10-229*, Responding to Severe Weather Events*, and MDS-specific technical data.

3.4.1.14. Ensure aircraft maintenance data is accurate by establishing and supporting a data integrity team (DIT). This team is not required in contract and civil service organizations unless specified in the statement of work (SOW), performance work statement (PWS) or performance requirements statement (PRS). If the contract/civil service organization does not have a DIT, they shall establish a process to ensure data integrity is maintained (commercial derivative aircraft are exempted and shall comply with guidance in AFI 21-107, *Maintaining Commercial Derivative Aircraft*). Ensure members assigned to the DIT are qualified and provided sufficient time to accurately assess the data. Ensure each aircraft maintenance work center performs a review of all documentation entered into IMDS-CDB/G081 daily IAW TO 00-20-2, *Maintenance Data Documentation.*

3.4.1.15. Ensure the Maintenance Operations Flight (MOF) develops procedures to update and ensure Geographical Location (GEOLOC) codes for on/off-station possessed aircraft are updated/correct in IMDS location subsystem. (G081 units are exempt as long as a HHQ agency accomplishes this requirement.)

3.4.1.16. Ensure MIS and aircraft forms are documented by the individual completing the task. ***EXCEPTION:*** For Red Ball maintenance, follow locally developed documentation procedures.

3.4.1.16. **(ANG)** N/A to the ANG. The following only applies to the ANG. Ensure MIS and aircraft forms are documented by the individual completing the task, when possible. In circumstances where this is not practical, another individual may document MIS, but the actual individual's employee number (G081)/ userid (IMDS-CDB) that completed the task will be entered in MIS and it will match the aircraft forms.

3.4.1.17. Develop local procedures for Red Ball maintenance to include parts delivery, maintenance procedures, documentation methods, and follow-on actions IAW **Chapter 14** of this instruction.

3.4.1.18. If established, ensure activity inspections are conducted as required by **Chapter 8** of this instruction and MAJCOM guidance.

3.4.1.19. Develop a wing instruction to control tools, equipment, and electronic devices from all wing agencies dispatching to aircraft parking/runway/taxi areas and MXG maintenance areas IAW **Chapter 1**, **Chapter 10**, and **Chapter 14** of this instruction.

3.4.1.20. Oversee the development and publication of all maintenance-related OIs.

3.4.1.21. Establish written guidance on individual responsibilities and specific procedures for CANN actions (**Chapter 5**, **Chapter 11** & **Chapter 14** of this instruction). Aircraft possessed by AFMC for depot maintenance will not be cannibalized without approval from the applicable ALC Program Manager and in coordination with the MAJCOM functional manager.

3.4.1.22. Approve in process inspection (IPI) listings.

3.4.1.23. Appoint a Radar Warning Receiver (RWR)/Radar Threat Warning (RTHW) manager IAW **Chapter 14** of this instruction.

3.4.1.24. Ensure compliance with Identification Friend or Foe (IFF) Mode-IV Program IAW **Chapter 14** of this instruction.

3.4.1.25. Ensure the Maintenance Standardization and Evaluation Program (MSEP) requirements are implemented IAW **Chapter 8** of this instruction.

3.4.1.26. Ensure effective management of the group's total maintenance training program IAW AFI 36-2201 and AFI 36-2232. Ensure maintenance training is accomplished according to the published (monthly) training plan and the awaiting and overdue backlogs are eliminated. Provide aircraft, personnel, and equipment to support the maintenance-training program.

3.4.1.26. **(ANG)** N/A to the ANG. The following only applies to the ANG: Ensure that maintenance training throughout the respective group is accomplished according to the published (monthly) training plan and the awaiting and overdue backlogs are kept to a minimum. The MXG/CC exercises oversight authority for all maintenance training.

3.4.1.27. Ensure squadrons develop plans to rotate personnel, as necessary, to enhance the mission and develop individual experience and knowledge. ***NOTE:*** N/A to the ARC.

3.4.1.28. Ensure an orientation program is developed and conducted for all personnel newly assigned to all unit maintenance/activities. As a minimum, topics must include unit mission, Air and Space Expeditionary Forces (AEF) vulnerability, tasking plans, supply procedures, FOD program, general flightline and work center safety rules, environmental issues, block training, and corrosion control IAW AFI 36-2232.

3.4.1.29. Ensure training requests identified on AF IMT 898, **Field Training Requirements Scheduling Document**, are coordinated and approved.

3.4.1.30. Manages the maintenance/munitions-training program to include course development content, ancillary, qualification, and maintenance training activities. Publishes monthly training schedules outlining specific aircraft course and equipment requirements.

3.4.1.31. Ensure squadrons not possessing 2W1X1 personnel establish a chaff/flare training program. As a minimum, the program will include academic, explosive safety, and load/unload training. The program will be administered using the following guidance; as a minimum, the academic program will include:

3.4.1.31.1. Applicable TOs and publications.

3.4.1.31.2. Applicable safety discipline/practices.

3.4.1.31.3. Security requirements.

3.4.1.31.4. Aircraft familiarization.

3.4.1.31.5. Stray voltage checks (as required).

3.4.1.31.6. Munitions characteristics.

3.4.1.31.7. Local requirements.

3.4.1.32. Ensure fire extinguisher, hazard communication (HAZCOM), and appropriate ancillary training programs are established for personnel performing on-/off-equipment maintenance duties. Ensure all occupational health requirements are documented IAW AFI 91-301.

3.4.1.33. Utilize the QA program to ensure standardized inspection and maintenance procedures.

3.4.1.34. Establish written procedures to review and clear repeat, recurring, and cannot duplicate (CND) discrepancies.

3.4.1.35. Establish and ensure a strong and positive, routine interface between Maintenance Data Systems Analysis (MDSA) and QA.

3.4.1.36. Approve depot-level assistance requests (IAW **Chapter 1**) after they are coordinated with PS&D, QA, and all applicable maintenance organizations. QA forwards the requests (as required) to the MAJCOM for review and approval.

3.4.1.36. **(ANG)** The 162 FW shall coordinate with LM Aero for depot level assistance for the UAE F-16 block 60 aircraft. The 178 FW shall coordinate with the RNAF maintenance liaison office for RNAF owned F-16 aircraft depot level assistance

3.4.1.37. Ensure the publication library or publication sets, including TOs are established.

3.4.1.38. Designate a focal point for all functional, technical, and QAE matters pertaining to performance-based activity (as required). See **Chapter 17**.

3.4.1.39. Provides maintenance crosstell information to applicable MAJCOM functional managers, lead command weapon system management offices, deployed maintenance activities, and Single Manager offices as appropriate by the most expedient means possible to ensure dissemination to all affected agencies IAW **Chapter 1** of this instruction.

3.4.1.40. In coordination with the OG/CC, review and approve the weekly, monthly, quarterly, and annual flying/test schedules IAW **Chapter 7** of this instruction.

3.4.1.41. Ensure the maintenance capability is considered in development of the flying program.

3.4.1.42. Approve the monthly maintenance and training plans. May authorize the Munitions Flight Commander/Chief to chair the munitions scheduling and training meetings and publish schedules.

3.4.1.43. Ensure unit procedures are established to reconcile training munitions issued for flight-line requirements IAW AFI 36-2217, *Munitions Requirements for Aircrew Training*.

3.4.1.44. Exercise combat sortie generation IAW **Chapter 14** of this instruction as applicable.

3.4.1.45. Determine Agile Combat Support (ACS) requirements, utilizing the smallest Unit Type Codes (UTCs) to meet capability, tailoring them as required; identify deploying personnel (and alternates) by name; and take any necessary actions to acquire additional support or equipment as required prior to deployment. Provide readiness status to the OG/CC of personnel and equipment available to support ACS requirements. The OG/CC is responsible for reporting readiness of supporting maintenance UTCs.

3.4.1.46. Ensure squadrons comply with provisions in AFI 10-201, *Status of Resources and Training Systems*. The MXG/CC will coordinate with the OG/CC as required to ensure accurate, timely reporting of readiness capability.

3.4.1.47. Ensure all personnel assigned to maintenance are used to accomplish critical wartime tasks, tank build-up, and munitions build-up before releasing them for non-maintenance duties.

3.4.1.48. Ensure UTC requirements are reviewed and annually briefed to senior maintenance supervision, to include all SNCOs.

3.4.1.49. Accomplish quarterly reviews of maintenance limiting factors (LIMFACS), shortfalls, and simulation requests.

3.4.1.50. Establish minimum levels for essential maintenance assets to include aircraft, engines, pods, AGE, vehicles, etc.

3.4.1.51. Conducts a meeting to establish game plan and priorities at the beginning of exercises and contingencies.

3.4.1.52. Appoint a Stock Record Account Number (SRAN) engine manager (if a host unit), or a unit engine manager (UEM) (if a tenant unit), to accomplish duties outlined in TO 00-20-254-series.

3.4.1.53. Function as the OPR for the Intermediate Repair Enhancement Program (IREP) IAW **Chapter 11** of this instruction and ensure a meeting is conducted at least quarterly.

3.4.1.54. Chair the Product Improvement Program (PIP) R&M meeting IAW **Chapter 8** of this instruction.

3.4.1.55. Ensure an effective Flash Blindness Protective Device Maintenance Program is accomplished IAW **Chapter 14** of this instruction.

3.4.1.56. Implement an effective Corrosion Prevention and Control Program IAW AFI 21-105, *Aerospace Equipment Structural Maintenance*, and MAJCOM directives.

3.4.1.57. Ensure squadron commanders (SQ/CC) and supervisors at all levels are responsible for the Vehicle Management Program, ensuring compliance with the provisions of AFI 24-302, *Vehicle Management*, and AFPAM 24-317, *Vehicle Control.*

3.4.1.58. Ensure the financial program is managed IAW AFI 65-601, *Budget Guidance and Procedures*.

3.4.1.59. Promote unit self sufficiency and repair enhancement through the effective use of maintenance resources according to AFI 21-123, *The AF Repair Enhancement Program (AFREP)*, TO 00-25-195, *AF Technical Order System Source, Maintenance and Recoverability Coding of AF Weapons Systems, and Equipment*, and TO 00-20-3*, Maintenance Processing of Reparable Property and the Repair Cycle Asset Control System*.

3.4.1.60. Develop an impoundment program and ensure compliance with the procedures IAW **Chapter 9** of this instruction.

3.4.1.61. Ensure a records management program is established according to AFI 37-138, *Records Disposition-Procedures and Responsibilities*, AFMAN 37-123, *Management of Records*, and *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil**.

3.4.1.62. Ensure a compliance-structured self-inspection program is established IAW **Chapter 14** of this instruction and MAJCOM directives. This program is not required for contract organizations unless specified in the SOW, PWS, or PRS.

3.4.1.63. Ensure the wing oil analysis program (OAP) complies with AFI 21-124, *Oil Analysis Program* and MAJCOM directives.

3.4.1.63. **(ANG)** And IAW ANGI 21-105, *Corrosion Control, Nondestructive Inspection, and Oil Analysis Programs.*

3.4.1.64. Ensure a nuclear surety program is implemented (if applicable) IAW AFI 91-101, *AF Nuclear Surety Program*, and nuclear munitions are maintained, handled and accounted for IAW AFI 21-204, *Nuclear Weapons Maintenance Management* .

3.4.1.65. Ensure effective management of the Engine Trending and Diagnostic (ET&D) program.

3.4.1.66. Ensure effective management of weight and balance (W&B) program IAW **Chapter 8** of this instruction .

3.4.1.67. Coordinate with OG/CC to establish Functional Check Flight (FCF), Operational Check Flight (OCF), and High Speed Taxi Check programs.

3.4.1.68. Manage the hangar queen program IAW **Chapter 14** in this instruction.

3.4.1.69. Establish Crashed, Damaged, or Disabled Aircraft Recovery (CDDAR) capability IAW applicable MDS technical data and **Chapter 14** of this instruction. Ensure resources and trained personnel are available to perform responsibilities of the CDDAR program.

3.4.1.70. Ensure Aircraft Structural Integrity Program (ASIP) is established IAW AFI 63-1001, *Aircraft Structural Integrity Program* and **Chapter 14** of this instruction.

3.4.1.71. Establish local manufacture procedures and controls.

3.4.1.72. Establish a dedicated crew chief (DCC) program IAW **Chapter 4** of this instruction. Brief the WG/CC monthly on the DCC experience levels/grades and on any need to waive requirements.

3.4.1.72. **(ANG)** N/A to the ANG except for the 116 ACW and 153 AW active duty personnel.

3.4.1.73. Designate an OPR for hot refuel training (if applicable) IAW **Chapter 14** of this instruction.

3.4.1.74. Control assignment of group facilities. Submit the necessary documents for new construction and modifications.

3.4.1.75. Ensure aircraft shelters at bases with permanently assigned aircraft are maintained, unless otherwise stipulated in contracting arrangements, IAW **Chapter 14** of this instruction (If an aircraft shelter is used for other than its designed purpose, the using activity will maintain it).

3.4.1.76. Develop a 10-year facility plan specifying maintenance, upgrade, and replacement projections for the group's facilities. Update and coordinate this plan with the base Civil Engineer annually. Coordinate and prioritize group maintenance facility work orders monthly.

3.4.1.77. Ensure maintenance requirements (e.g., aircraft turnaround, alternate fuel cell, hot refueling, end-of-runway (EOR) check area, engine run spots, explosive load (cargo) areas) are included in the base parking plan.

3.4.1.78. Ensure adequate communication devices are available and appoint an OPR for assigned land mobile radios (LMR) IAW **Chapter 14** of this instruction.

3.4.1.79. Ensure repair cost evaluations are performed and appropriate levels of review and repair authorization are established in squadrons, flights, and repair sections IAW TO 00-20-3, TO 00-25-240, *Uniformed Repair/Replacement Criteria for Selected USAF Support Equipment (SE)* and TO 35-1-25, *Economic Repair Criteria for Support Equipment (SE)*.

3.4.1.80. Ensure effective use of the AF Engineering and Technical Services/Contracting Engineering Team Specialists (AFETS/CETS) according to AFI 21-110, *Engineering and Technical Services*, *Management and Control* and use appropriate engineering materials as prescribed in AFI 21-401, *Engineering Data Storage, Distribution, and Control*, and AFI 21-403, *Acquiring Engineering Data*.

3.4.1.81. Ensure the protection and security of aircraft, equipment and facilities.

3.4.1.82. Control the duty assignment of newly assigned maintenance officers. Ensure career development and training of maintenance officers IAW AFI 36-2611, *Officer Professional Development*. Ensure guidance in AFI 36-2101, *Classifying Military Personnel (Officer and Enlisted)* is followed.

3.4.1.82. **(ANG)** May rotate maintenance officers, within ANG manpower directives, to enhance mission and develop individual experience and knowledge.

3.4.1.83. Establish the group maintenance awards and recognition program to meet AF and MAJCOM requirements IAW AFI 36-2818, *USAF Maintenance Awards Program*.

3.4.1.84. Ensure MXG activities serviced by an off-base PMEL establish a TMDE collection point. The collection point coordinator is the single point-of-contact between the MXG work centers and the servicing TMDE Flight and is trained by the servicing TMDE Flight. Designate the

collection point primary and alternate coordinator in writing. The TMDE collection point shall perform the applicable responsibilities of this instruction, paragraph **5.14.6.**, production control section.

3.4.1.84. **(ANG)** N/A to the ANG. The following only applies to the ANG: TMDE Collection Point. Ensure MXG activities serviced by an off-base PMEL establish a TMDE collection point. The collection point coordinator is the single point-of-contact between the MXG work centers and the servicing TMDE Flight. The WG/CC shall designate the collection point primary and alternate coordinator in writing.

3.4.1.85. Ensure procedures are developed to properly turn in recoverable and consumable items IAW AFMAN 23-110.

3.4.1.86. Designate the Installation Maintenance Advisor when applicable, to the Aero Club according to AFI 34-217, *AF Aero Club Program.*

3.4.1.87. Deploy MRTs and equipment to recover aircraft IAW **Chapter 14** of this instruction and applicable MAJCOM guidance.

3.4.1.88. Approve reassignment of CMSgts and officers within the MXG.

3.4.1.89. Appoint hot refueling/hot defueling OPRs for the MXG.

3.4.1.90. Monitor unusual materiel conditions for investigation, consideration of fleet-wide potential, and reporting IAW paragraph **14.3.** of this instruction.

3.4.1.91. Engine Lead the Fleet (Pacer) Program. Lead the Fleet Program is used to determine actual distress modes of an engine in the field. The Lead the Fleet Program provides early intelligence on engine integrity, reliability, and maintainability before a majority of the fleet is impacted. The program is also designed to proved engineering data and procurement lead-time for orderly updating and modification of the engine, as well as for the engine controls and accessories.

3.4.1.91.1. Ensure the wing engine Lead the Fleet (Pacer) Program established for engine type IAW the following documents: MOUs, MOAs, Propulsion Center of Excellence Best Practice 01-14, **https://wwwmil.wpafb.af.mil/asc/lp/pcoe/best_practices/bp-01-14.doc**, and AFI 21-104, *Selective Management of Selected Gas Turbine Engines*.

3.4.1.92. Ensures the egress section “safes” all static display aircraft according to 00-80-series and weapon system TOs.

3.4.1.93. **(Added-ANG)** Monitor the assignment and use of all maintenance personnel to ensure equitable distribution of skilled people. Ensure all personnel assigned to Maintenance are used to accomplish critical wartime tasks before releasing them for non-maintenance duties.

3.4.1.94. **(Added-ANG)** Sign the SCR.

3.4.1.95. **(Added-ANG)** Assign a manager for the engine-run, qualification/certification program IAW AFI 11-218.

3.4.1.96. **(Added-ANG)** Appoint, when required, a WWM. The MXG/CC appoints a WWM, who is the most qualified Aircraft Armament Systems (2W1XX) and is the functional manager for AFSC 2W1X1. In cases where the function is not represented by full time personnel, the MXG/CC shall appoint a full time representative. In cases where a 2W100 Chief Master Sergeant is not assigned to the Maintenance Group, the MXG/CC may request a waiver for the most qualified

2W1 SMSgt to serve as the WWM for up to 24 months. Submit waivers to NGB/A4MW for approval.

3.4.1.97. **(Added-ANG)** May authorize the use of non-2W1X1 personnel, for alert detachments only, as load crewmembers but not load crew chiefs (See Chapt 12 for requirements).

3.4.1.98. **(Added-ANG)** Ensure that the unit has implemented an effective Corrosion Prevention and Control Program IAW ANGI 21-105.

3.4.1.98.1. **(Added-ANG)** Publish an OI outlining local policies and procedures.

3.4.1.98.2. **(Added-ANG)** Designate a qualified NCO with appropriate technical background and corrosion control experience to serve as the unit corrosion prevention and control manager.

3.4.1.99. **(Added-ANG)** Establish a vehicle control program for their group.

3.4.1.100. **(Added-ANG)** Maintenance Group Critical Compliance Objectives (CCOs). CCOs are overarching objectives which encompass several requirements outlined in this AFI and are applicable to all most all personnel in the Maintenance Group. When making maintenance management decisions, all leaders in the maintenance organization should consider how the decision impacts the unit's ability to meet these objectives. Not meeting these objectives will have a high potential to result in serious injury, loss of life, excessive litigation, or severe adverse mission impact. MXG/CCs will ensure unit personnel focus on meeting the CCOs identified in table below.

Table 3.1. (Added-ANG) Critical Compliance Objectives (CCOs)

CCO Title	CCO Nomenclature
Maintenance Discipline	Maintain a culture of technical data adherence and compliance with directives throughout the Group.
Safety	Eliminate on-duty mishaps by implementing and enforcing sound Operational Risk Management (ORM) and Maintenance Resource Management (MRM) principles.
Tool and Equipment Management	Ensure tool and equipment accountability and control at all levels throughout the Group.
Foreign Object Damage (FOD) Prevention	Minimize FOD incidents by implementing and enforcing the Wing FOD prevention program.
Munitions Management	Ensure 100% accountability, control, and inventory of all munitions assigned to the Group account.
Fleet Management	Ensure a balance between operational requirements, aircraft utilization, and fleet readiness.
Forms/Maintenance Information System Documentation	Ensure accurate documentation of maintenance actions performed by Group personnel.
Training Management	Ensure all required training actions for unit personnel are accomplished and documented.
Environmental	Ensure organizational compliance with all Federal, State and local laws pertaining to environmental regulations and pollution prevention.

3.5. Maintenance Group Deputy Commander (MXG/CD) Responsibilities. The MXG/CD assists the MXG/CC with responsibilities in Paragraph **3.4.1.** and **Chapter 14** of this instruction.

3.5.1. The MXG/CD (or equivalent) chairs the daily maintenance production/scheduling meeting. The purpose of the daily meeting is to verify aircraft and equipment utilization and scheduled maintenance requirements for the next day, establish work priorities, and coordinate schedule changes. This meeting ensures all maintenance requirements are effectively scheduled and the flying and maintenance schedule problems are resolved. As the meeting chairperson, the MXG/CD will:

3.5.1.1. Ensure meeting topics, as a minimum, include: aircraft status, MICAP and Repair Cycle Status, AF IMT 2407, **Weekly/Daily Flying Schedule Coordination**, actions, current day flying and maintenance schedule execution and remaining portion of the current day's schedule, review previous day's flying and maintenance schedule deviations to the published schedule IAW MAJCOM guidance, supply MICAPs, prioritizing aircraft requiring/competing for shared resources, and review special inspections (SIs), TCIs, TCTOs, depot field team (DFT)/contract field team (CFT) schedules.

3.5.1.1.1. AMUs will brief current aircraft status and repair plans emphasizing attention to high visibility aircraft (impounded aircraft, hangar queens, etc.).

3.5.1.1.2. MXS will brief status and progress of inspections and any problems with projected flow/time line. Include status of back line aircraft and refurbishment aircraft when under MXS control. Discuss engine spare status and requirements.

3.5.1.2. Perform the following reviews weekly: review next week's flying and maintenance schedule to de-conflict and prioritize aircraft requiring/competing for shared resources weekly. Review any overdue special inspections and TCIs and planned corrective action. Review status of TCTOs that will ground with 30 days and completion plan. Review DFT/CFT schedule requirements. Review previous week's deviations to flying and maintenance schedules.

3.5.1.3. Ensure meeting attendees, as a minimum, include the MOF/CC/SUPT, Operations Officer/Maintenance Superintendent (MX SUPT), AMU and squadron production supervisors, AMU schedulers, and representatives from MOC, MSL, MOF PS&D, MOF EM, and QA.

3.5.1.4. Develop maintenance capability in conjunction with the production activities.

3.5.1.5. Coordinate between maintenance and operations.

3.5.1.6. Ensure critical equipment, facilities, and materiel resources are allocated and establish overall priorities.

3.6. MXG Superintendent (SUPT) Responsibilities. The MXG SUPT ensures consistent maintenance practices according to technical data and management procedures throughout the group. The MXG SUPT ensures QA and maintenance training programs meet the needs of the group and the intent of higher headquarters instructions. The MXG SUPT oversees maintenance facilities, aircraft support equipment procurement and maintenance, resolves conflicting maintenance requirements between units, and in coordination with unit leadership, rotates personnel, as necessary, to enhance mission accomplishment and develop individual experience and knowledge. The MXG SUPT is directly responsible to the MXG/CC and shall:

3.6. (ANG) N/A to the ANG. All subparagraphs of **3.6.** are also N/A.

3.6.1. Serve as a technical advisor to the MXG/CC.

3.6.2. Advise the MXG/CC on personnel, morale, and welfare issues.

3.6.3. Provide liaison between the staff and production supervisors.

3.6.4. Advise the MXG/CC on problems not identified through maintenance data systems or QA inspection reports.

3.6.5. Serve as the group's focal point for enlisted manning.

3.7. Squadron Commander (SQ/CC) Responsibilities. The SQ/CC (or equivalent) performs command functions outlined by public law or directives common to all AF SQ/CCs. They are responsible to the MXG/CC for overall squadron leadership. In addition, the SQ/CC will:

3.7.1. Ensure manpower and all levels of supervision are equitably distributed for all duty periods based on manning and workload.

3.7.2. Ensure compliance with the Environment Safety and Occupational Health Management System (ESOHMS) programs as identified in AFPD 90-8, the AFI 90-8XX series of ESOH instructions, AFPD 91-3, *Occupational, Safety, and Health*, AFI 91-301, and the AFI 32-70XX series environmental instructions.

3.7.3. Ensure group radiation protection program IAW AFOSHSTD 48-9, *Radio Frequency, Radiation (RFR) Safety Program*, is implmented when applicable.

3.7.4. Ensure compliance with unit Environmental Protection Agency (EPA) program IAW AFI 32-7042, *Solid and Hazardous Waste Compliance.*

3.7.5. Designate a unit environmental coordinator (UEC).

3.7.5. **(ANG)** N/A to ANG. The following only applies to the ANG. MXG/CC will designate a group Environmental Coordinator.

3.7.6. Ensure strict adherence to technical data and all other written management procedures.

3.7.7. Enforce sound maintenance, supply discipline, and financial management practices.

3.7.8. Review status of training programs monthly. Ensure upgrade training and maintenance qualification programs emphasize quality and are not primarily focused on meeting minimum upgrade time frames.

3.7.9. Ensure functional publication libraries are established and maintained IAW AFI 33-360 and AFI 33-322, *Records Management Program.*

3.7.10. Ensure the unit is capable of deploying in response to wing taskings. Coordinate with the LRS Logistics Plans function and unit supervisors to prepare to execute plans. Initiate squadron deployment planning and provide inputs to plans.

3.7.10. **(ANG)** This function may be accomplished at the group level at MXG/CC option.

3.7.10.1. Designate a focal point for deployments. This person will be referred to as the Unit Deployment Manager (UDM).

3.7.10.2. When evaluating taskings, the UDM considers other plans that task the unit, personnel/equipment requirements, and LIMFACs. Perform unit duties and responsibilities in AFI 10-403,

Deployment Planning and Execution, **Chapter 4**, Deployment Execution Equipment Preparation Requirements, and **Chapter 5**, Personnel Preparation and Deployment Execution Requirements.

3.7.11. Ensure the MXG/CC is notified of any critical shortages of personnel, aircraft, equipment, or components that might affect the unit's ability to generate aircraft sorties.

3.7.12. Review OPLAN 8044, Emergency War Order (EWO), applicable DOC statements, mobility, contingency, and exercise plans and ensure squadron processes are established to meet tasked requirements.

3.7.13. Ensure personnel authorized and assigned are adequate to support the unit mission and tasking plans. Coordinate with wing manpower office representatives for assistance in preparing requests to MAJCOM for UMD adjustments. Monitor additional duties, leave, training requirements, and details.

3.7.14. Monitor all personnel working outside of their primary AFSC to ensure that it does not hamper mission accomplishment.

3.7.15. Implement and manage self-inspection, retention and career motivation, security, mobility, and personnel reliability programs, as applicable.

3.7.16. Establish a squadron vehicle management program as required by AFI 24-302, and designate a vehicle control officer (VCO).

3.7.16. **(ANG)** N/A to the ANG. The following only applies to the ANG: Complies with the group vehicle program as required by AFI 24-301 and designates a squadron vehicle control officer/NCO, if required.

3.7.17. Administer the squadron safety program. Establish a Mishap Prevention Program for the Squadron IAW AFI 91-202 and **Chapter 2** of this instruction. Appoints a squadron safety monitor to coordinate with the flights to ensure all personnel obtain the required safety training. Ensure safety information is available and personnel in hazardous areas are aware of safety implications.

3.7.18. Ensure personnel are trained and resources are available for CDDAR Program.

3.7.19. Manage unit flying crew chief (FCC) program IAW **Chapter 14** of this instruction, if applicable.

3.7.20. Ensure facilities comply with AF industrial environmental standards IAW AFI 91-301 and report deficiencies to BE.

3.7.21. (If applicable) Ensure the Munitions Squadron/Flight has sufficient Secret Internet Protocol Router Network (SIPRNET) and Non-secret Internet Protocol Router Network (NIPRNET) capability. Internet connectivity in the munitions storage area is not optional; it is critical to the war fighting effort and is required at each operating location. Accurate and timely up-channel munitions reporting depend on this connectivity. Additionally, ensure computer equipment is capable of running the following software applications: Tactical Munitions Reporting System (TMRS), Combat Ammunition System (CAS), Munitions Control 2000 (MC2K), Digitized technical data, and the IMDS-CDB/G081.

3.7.22. (If applicable) Ensure intrusion detection systems (IDS) are installed in permanent facilities when required to store munitions IAW DoD 5100.76-M, *Physical Security of Sensitive Conventional*

Arms, Ammunition, and Explosives. When IDS is not available, protect munitions as outlined in AFI 31-101, *The AF Physical Security Program.*

3.7.23. (If applicable) Ensure a Keep Enlisted Experience Program (KEEP) is utilized by unit supervisory personnel and conduct maintenance retention calls IAW **Chapter 14** of this instruction

3.7.24. Monitor new requirements for training, equipment authorizations, special tools, E-Tools, workspace, facilities, and manning for impact on unit's capability to perform its mission.

3.7.25. Appoint custodians to manage the Custodian Authorization and Custody Receipt Listing (CA/CRL).

3.7.26. Ensure turn-in of consumable/expendable XB3 material and scrap is properly accomplished IAW AFMAN 23-110.

3.7.27. Provide oversight for all contract maintenance performed IAW **Chapter 17** of this instruction.

3.7.28. Supports USAF awards program IAW 36-2818.

3.7.29. **(Added-ANG)** Participates in quarterly QA reviews.

3.7.30. **(Added-ANG)** Endorses adding an individual to the SCR and forwards to the QA Supt. for final review prior to submission to the MXG/CC for approval and inclusion on the SCR (**EXCEPTION:** the 116 ACW squadron commanders have approval for inclusion on the SCR).

3.7.31. **(Added-ANG)** Maintains a current copy of the unit personnel manpower roster (UPMR). Maintains a record of personnel actions and verifies entry of approved actions into the personnel data subsystem.

3.7.32. **(Added-ANG)** Actively support the Unit MSEP by attending quarterly MSEP Summary meetings, validating all self inspection results in their span of control, and thoroughly investigating all failed task evaluations and non-compliant self inspection items.

3.7.33. **(Added-ANG)** Submit corrective action summaries to the MXG/CC for all failed task evaluations within their span of control on a monthly basis.

3.8. Operations Officer/Maintenance Superintendent (MX SUPT) Responsibilities. The Operations Officer/MX SUPT is also referred to as Maintenance Operations (formerly maintenance supervision). As applicable, Maintenance Operations advises the SQ/CC on technical matters, leads a mission-focused maintenance effort, and manages resources necessary to accomplish the mission. They provide necessary administration to manage assigned responsibilities, control maintenance through production supervisors, flight chiefs, section, and shop chiefs. The MX SUPT is responsible to the Operations Officer. Maintenance Operations will:

3.8.1. Ensure manpower and all levels of supervision are equitably distributed for all duty periods based on manning and workload.

3.8.2. Implement group's radiation protection program IAW AFOSHSTD 48-9, *Radio Frequency, Radiation (RFR) Safety Program*, when applicable.

3.8.3. Develop and monitor environmental protection guidance. Ensure compliance with AFPD 90-8, the AFI 90-8XX series and AF 32-70XX series environmental directives and applicable environmental protection/compliance guidance. Develop and monitor environmental protection guidance. Designate a UEC to work environmental coordination, implementation, and compliance with the

installation MXG/OG Environmental Coordinator, the installation environmental flight, the installation ESOHMS/EMS team and the installation Hazardous Material Management Process (HMMP) team for ESOH issues.

3.8.3. **(ANG)** N/A to the ANG. The following only applies to the ANG: Monitors environmental protection guidance. Ensures compliance with AFPD 90-8 and ensures compliance with Air Force 32-70XX series environmental directives and applicable environmental protection / compliance guidance.

3.8.4. Ensures HAZCOM and Hazardous Material (HAZMAT) management programs are followed IAW AFI 90-821, *Hazard Communication* and AFI 32-7086 and any local policy or applicable directives. Also reference related 48- and 91-series AFOSHSTD.

3.8.5. Coordinate with medical service agencies responsible for monitoring potentially hazardous environmental conditions within maintenance and industrial areas.

3.8.6. Enforces strict adherence to technical data and management procedures. Ensures all supervisors understand the importance of using current technical data and advocates use of the TO improvement program IAW TO-00-5-1.

3.8.7. Ensure maintenance is only performed by personnel who are trained, qualified, and certified, unless under the direct supervision of a trainer or certifier.

3.8.8. Ensure compliance with AFI 91-series safety directives, appropriate AFOSHSTD, and applicable industrial safety publications. Document occupational training requirements IAW AFI 91-301.

3.8.9. Ensure accurate daily documentation of maintenance actions, to include the MIS.

3.8.10. Ensure MIS and aircraft forms are documented by the individual completing the task. ***EXCEPTION:*** For Red Ball maintenance, follow locally developed documentation procedures.

3.8.10. **(ANG)** Ensure MIS and aircraft forms are documented by the individual completing the task, when possible. In circumstances where this is not practical, another individual may document MIS, but the actual individual's employee number (G081)/ userid (IMDS-CDB) that completed the task will be entered in MIS and it will match the aircraft forms. As soon as practical, the individual who completed the task will complete the MDC and verify the corrective action.

3.8.11. Ensure timely and accurate engine data is provided to the EM element for all applicable engines.

3.8.12. Establish procedures to prevent FOD and dropped objects IAW **Chapter 14** of this instruction.

3.8.12. **(ANG)** N/A to the ANG. The following only applies to the ANG: Manages the responsibilities in the FOD and DOP program IAW **Chapter 14** of this instruction.

3.8.13. Monitor and update local IPI requirements; forward to QA a list of squadron tasks requiring IPIs IAW **Chapter 8** of this instruction.

3.8.14. Establish procedures to control repair cycle assets.

3.8.14. **(ANG)** N/A to the ANG. The following only applies to the ANG: Complies with procedures to control repair cycle assets IAW TO 00-20-3.

3.8.15. Ensure compliance with MXG LMR Program IAW **Chapter 14** of this instruction.

3.8.16. Enforce MAJCOM standards on location of G-files (hard copy or electronic TO-library carried on aircraft) as applicable.

3.8.17. Coordinate with other squadrons to develop and execute a rotation plan for all applicable AFSCs to balance grade, skill level and experience of personnel between AMUs and back shops. Ensure military personnel are rotated, as necessary, to enhance individual experience and knowledge. The WWM will perform this function for AFSC 2W1X1 (Not applicable to the ARC).

3.8.18. Manage the SCR (MXG/CC for the ARC). Ensure the SCR is reviewed quarterly (ANG semi-annually) by appropriate work center supervisors to verify that all entries are current and accurate, and prerequisites including applicable training, testing, evaluation, or other requirements for task certification have been completed. Take appropriate, timely action to decertify/recertify personnel affected by non-judicial punishment actions or other administrative actions affecting maintenance qualifications. Sign the SCR, signifying personnel listed on the roster are certified and qualified to accomplish tasks requiring certification and inspector authorizations. (Not applicable to the ANG).

3.8.19. Ensure a sufficient number of personnel are qualified to perform mission critical tasks listed on the SCR Table in **Chapter 14** of this instruction. Reviews and approves individuals for addition to the SCR.

3.8.20. Ensure aircraft/SE is available to support unit training objectives.

3.8.21. Ensure personnel are qualified to support dual load operations (DLO), CSO, and hot refueling operations (as applicable).

3.8.22. Train subordinate officers and SNCOs.

3.8.22. **(ANG)** Ensure that anyone performing maintenance utilizes an AF Form 623, *Individual Training Record Folder*, and Career Field Education and Training Plan (CFETP) or automated training products to provide a record of qualification, regardless of military rank or civilian grade.

3.8.23. Ensure procedures for identifying, recording, and clearing repeat, recurring, and CND discrepancies are understood and followed.

3.8.24. Establish a technical administration function and an internal distribution system (as required) to centrally administer technical maintenance functions required by their subordinate flights.

3.8.25. Establish a method to distribute maintenance cross-talk/crosstell messages, QA newsletters, policy announcements, technical notifications, and other important maintenance information for which no formal notification process exists.

3.8.26. Review and evaluate management and production effectiveness. Analyze personnel and equipment performance history using QA reports. Initiate management actions to meet new workloads or correct reported/perceived deficiencies.

3.8.27. Recommend personnel for QA duty positions to MXG/CC.

3.8.28. Ensure an annual maintenance plan is developed and reconciled with the flying schedule and flying requirements to ensure maintenance can support the annual flying/test program. Participate in the maintenance planning cycle.

3.8.29. Attend the MXG daily production maintenance meeting.

3.8.30. Review applicable support agreements (SA) annually or as required and makes recommendations to Maintenance Operations Squadron (MOS) for changes.

3.8.31. Review the SORTS and AEF Reporting Tool (ART) information for their organization.

3.8.32. Ensure a squadron SERENE BYTE or PACER WARE response capability exists IAW AFI 10-703, *Electronic Warfare Integrated Reprogramming*, as applicable.

3.8.33. Ensure a squadron Corrosion Control Program is implemented and managed.

3.8.33. **(ANG)** N/A to the ANG. The following only applies to the ANG: Ensures the MXG Corrosion Control Program is complied with.

3.8.34. Ensure a squadron Refurbishment Program is implemented and managed (as applicable).

3.8.35. Closely monitor aircraft/equipment impoundments.

3.8.36. Ensure OAP is monitored and administered IAW AFI 21-124.

3.8.36. **(ANG)** And IAW ANGI 21-105.

3.8.37. Ensure squadron CDDAR Program responsibilities are established.

3.8.38. Ensure squadron ASIP responsibilities are accomplished IAW the ASIP OI, AFI 63-1001 and **Chapter 14** of this instruction. All point of contact information will be provided to the ASIP manager.

3.8.39. Manage the squadron CANN program.

3.8.39. **(ANG)** N/A to the ANG. The following only applies to the ANG: Monitors cannibalization actions.

3.8.40. Ensure security, storage maintenance, and proper use of equipment according to AFMAN 23-110.

3.8.41. Designate Flight Chiefs (ARC follows MAJCOM guidance). ***EXCEPTION:*** Munitions flight chiefs will be appointed by the SQ/CC IAW AFI 21-201.

3.8.41. **(ANG)** N/A to the ANG. The following only applies to the ANG: Designates Supervisors. The best-qualified people are selected within the constraints of AFMAN 36-2108. **EXCEPTION**: Munitions Element supervisors shall be appointed IAW AFI 21-201.

3.8.42. Ensure the UMD is consistent with the organizational structure in AFI 38-101.

3.8.43. Maintain a current copy of the Unit Personnel Manpower Roster (UPMR). Allocates projected gains against pending or actual vacant slots. Maintain a record of personnel actions and verify approved personnel data subsystem entries are updated.

3.8.44. Monitor workforce availability. Ensure shift scheduling considers additional duties, leave, ancillary training, and details to provide maximum capability and minimize work force degradation.

3.8.44.1. Review and support the monthly (quarterly for ANG) Weapons Load Training (WLT) schedule.

3.8.45. Ensure special experience identifier (SEI) qualified individuals are matched against proper SEI positions on the UPMR. Ensures SEIs are awarded to individuals meeting the qualification criteria and are reflected in the personnel data subsystem. (Not applicable to the ARC).

3.8.45. **(ANG) EXCEPTION:** Applicable to the 116 ACW and 153 AW active duty personnel.

3.8.46. Coordinate permanent change of assignment (PCA) actions. Ensure required documentation is completed and submitted. Ensure the SQ/CC and squadron technical-administration section is briefed on all pending and completed PCA actions. (Not applicable to the ARC).

3.8.46. **(ANG) EXCEPTION:** Applicable for the 116 ACW and 153 AW active duty personnel.

3.8.47. Ensure deferred maintenance, PRD and back-ordered parts are properly managed. Periodically review on-line supply products.

3.8.48. Review the D23, Repair Cycle Asset Management Listing, or G081 and other pertinent supply products to ensure proper asset management.

3.8.49. Ensures Special Purpose Recoverables Authorized Maintenance (SPRAM) accounts are established IAW AFI 21-103, **Chapter 11** of this instruction, and AFMAN 23-110.

3.8.49. **(ANG)** To include AME.

3.8.50. Ensure reporting of materiel deficiencies according to TO 00-35D-54*, USAF Deficiency Reporting and Investigating System*.

3.8.50. **(ANG)** The 162 FW shall report deficiencies to LM Aero for UAE F-16 block 60 aircraft. The 178 FW shall report deficiencies to the RNAF maintenance liaison office for RNAF owned F-16 aircraft.

3.8.51. Monitor requirements for composite tool kits (CTK), special tools and SE and take necessary action to ensure availability, as required IAW **Chapter 10** of this instruction.

3.8.52. Coordinates with WWM on all issues affecting AFSC 2W1X1 personnel to include: work center/organizational manpower authorization change requests (ACR), AFSC changes, cross training, re-training, special duty requests, special assignment actions (SWAP, Palace Chase, etc), overseas DEROS extensions/IPCOT requests and physical profile changes.

3.8.53. Distributes projected gain/loss lists and maintenance manpower requests (MMR) to all work centers and establishes suspenses for updates. Ensures approved personnel actions have been received for all updates then submits consolidated updates to programs

3.8.53. **(ANG)** N/A to the ANG (**EXCEPTION:** Applicable for the 116 ACW and 153 AW active duty personnel).

3.8.54. **(Added-ANG)** Reviews and consolidates monthly maintenance plan inputs from flights/sections and forwards to PS&D.

3.8.55. **(Added-ANG)** Ensures personnel are identified to meet deployment tasking according to the unit's DOC statement IAW AFI 10-403, AFI -10-215, and AFMAN 10-401.

3.8.56. **(Added-ANG)** Monitors tool and equipment management and special tool needs IAW **Chapter 10** of this instruction. Also enforces procedures for control, storage, and management of AME, Dash 21 equipment, and Maintenance Safety and Protection Equipment (MSPE) according to AFI 21-103.

3.8.57. **(Added-ANG)** Evaluates maintenance quality, the qualifications of personnel, and training deficiencies by working with element supervisors and by observing personnel performance. Review MSEP results and trends, target areas for improvement, and also recognize quality performers.

3.8.58. **(Added-ANG)** Actively support the Unit MSEP by attending quarterly MSEP Summary meetings, validating all self inspection results in their span of control, and thoroughly investigating all failed task evaluations and non-compliant self inspection items.

3.8.59. **(Added-ANG)** Submit corrective action summaries to the immediate supervisor for all failed task evaluations within their span of control on a monthly basis.

3.9. Flight Commander/Flight Chief or AMU OIC/Superintendent (SUPT). The AMU OIC/SUPT and Flight Commander/Flight Chief is responsible to the squadron Operations Officer for the leadership, supervision, and training of all assigned personnel. Flight commander/chief positions are rated on IAW 36-2406. AMU OICs/SUPTs and Flight Commanders/Chiefs may delegate responsibilities involving day-to-day functioning of sections and elements, as appropriate. Some responsibilities listed may only apply to particular flights or squadrons, and therefore only apply if the function is performed. AMU OICs/ SUPTs and Flight Commanders/Chiefs will:

3.9.1. Manage shift manpower distribution and make necessary adjustments. Equitably distribute all levels of supervision based on manning and workload to supervise all duty periods. Identify imbalances between authorizations and the number of personnel assigned, or between authorized and assigned skill levels or grades to Operations Officer/MX SUPT.

3.9.2. Execute the squadron's Mishap Prevention Program for the Flight/work center IAW AFI 91-202 and **Chapter 2** of this instruction. Ensure all personnel obtain the required safety training. Ensure safety information is available and personnel in hazardous areas are briefed about the dangers. Identify requirements to BE, ensuring facilities meet AF industrial environmental standards IAW AFI 91-301.

3.9.3. Monitor and ensure environmental health physicals and respirator training, initial and recurring requirements, are accomplished when required for assigned personnel IAW applicable 48-series AFOSHSTDs.

3.9.4. Ensure AF IMT 55, is documented IAW AFI 91-301, and applicable AFOSHSTDs.

3.9.5. Enforce lock-out/tag-out procedures IAW **Chapter 2** of this instruction and AFOSHSTD 91-501.

3.9.6. Ensure organizational compliance with all federal, state, and local laws pertaining to environmental regulation and pollution prevention IAW the installation ESOHMS/EMS program. Enforce local environmental protection guidance and monitor compliance. Supervisors will work closely with the base Civil Engineer's environmental office and the ESOHMS/EMS cross-functional team to identify specific local requirements.

3.9.7. Enforce strict adherence to technical data and management procedures. Ensure all supervisors understand the importance of using current technical data, advocate use of the TO improvement program, and ensure work center TO files are maintained IAW TO 00-5-1.

3.9.8. Ensure general housekeeping, safety, security and environmental control and AFOSHSTDs are followed.

3.9.9. Ensure requirements in TO 11A-1-60 are complied with when certifying items associated with explosives such as: MERS, TERS, pylons, launchers, rafts, bomb racks, ejection seats, fire suppression bottles, survival equipment and gun systems and components. Ensure they are explosive free prior to being turned-in to LRS or the Defense Reutilization Marketing Office (DRMO).

3.9.10. Ensure aircraft and equipment forms and MIS documentation are completed, accurate and accomplished for each shift. Ensure aircraft status is accurately reflected in both the maintenance forms and the MIS.

3.9.11. Sign Exceptional Releases (ER) IAW TO 00-20-1 when authorized by the MXG/CC IAW **Chapter 14**, **Table 14.1.**. of this instruction.

3.9.12. Ensure MIS and aircraft forms are documented by the individual completing the task. ***EXCEPTION:*** For Red Ball maintenance and computer down-time, follow locally developed documentation procedures.

3.9.12. **(ANG)** Ensure MIS and aircraft forms are documented by the individual completing the task, when possible. In circumstances where this is not practical, another individual may document MIS, but the actual individual's employee number (G081)/ userid (IMDS-CDB) that completed the task will be entered in MIS and it will match the aircraft forms. As soon as practical, the individual who completed the task will complete the MDC and verify the corrective action.

3.9.13. Monitor cannibalization actions.

3.9.14. Review deferred maintenance weekly for accuracy and to determine if appropriate and timely actions are being taken. Use MIS screens/Automated Records Check and coordinate with the production supervisor for accomplishment.

3.9.15. Review the aircraft automated records check after it has been validated by the section NCOIC IAW **Chapter 7** of this instruction.

3.9.16. Ensure operator inspections and user servicing requirements are accomplished on all assigned support equipment IAW TO 00-20-1.

3.9.17. Ensure sections (and elements) maintain records of inspection, lubrication, and maintenance of industrial equipment IAW TO 00-20-1 on AFTO IMT 244, **Industrial/Support Equipment Record**, or AF IMT 2411, **Inspection Document**.

3.9.18. Comply with TO 33K-1-100, *TMDE Calibration Interval Technical Order and Work Unit Code Reference Guide*, applicable calibration measurement summaries (CMS), and TO 00-20-14, in the use, care, handling, transportation and calibration of TMDE owned by the flight.

3.9.19. Evaluate maintenance quality, personnel qualifications, and training of assigned personnel. Recognize quality performers.

3.9.20. Review/update flight IPI requirements listing annually and route through Operations Officer/ MX SUPT for consolidation and MXG/CC approval. Forward to QA for review, standardization, and publication.

3.9.21. Ensure only designated personnel listed on SCR verify MICAPs/Urgency of Need (UND) 1A and JA requirements.

3.9.22. Select personnel to perform Special Certification tasks IAW **Chapter 14**, **Table 14.1.** of this instruction and forward names to Operations Officer/MX SUPT for approval.

3.9.22. **(ANG)** N/A to ANG. The following only applies to the ANG. Select personnel to perform Special Certification tasks IAW **Chapter 14**, **Table 14.1.** of this instruction and forward names to Operations Officer/MX SUPT.

3.9.23. Ensure training requirements are executed to support established training plan and individual AFSC Career Field Education and Training Plans (CFETP). Ensure all personnel complete the shop level Pollution Prevention (P2) Training Program and the ESOHMS training requirements as applicable.

3.9.24. Ensure CUT requirements are identified as required by the unit mission IAW **Chapter 1** of this instruction and AFI 36-2232. Ensure CUT does not interfere with upgrade/qualification training.

3.9.25. Ensure procedures are followed to identify, record, and clear repeat, recurring, and CND discrepancies.

3.9.26. Review MDSA, QA, and other management reports to determine appropriate management actions to meet new workloads, target deficiencies, and identify and correct root causes.

3.9.27. Review MSEP results and trends and target areas for improvement.

3.9.28. Review current and updated publications and inform personnel of any significant changes. Ensures work center publications are current and required publications are available to meet work center needs.

3.9.29. Provide inputs to maintenance and flying schedules, and execute scheduled maintenance plans.

3.9.30. Ensure personnel are identified to meet deployment tasking according to the unit's DOC statement IAW AFI 10-403, AFI 10-215, *Personnel Support for Contingency Operations (PERSCO)*, and AFMAN 10-401, *Operation Plan & Concept Plan Development and Implementation*.

3.9.31. Establish flight-specific emergency action procedures to respond to disaster control and severe weather and forward to MOC for possible inclusion into wing procedural or Quick Reaction functional checklists. Fully understand and be prepared to implement specific disaster control duties and squadron responsibilities pertaining to aircraft/SE movement and personnel evacuation IAW AFI 10-2501, *Full Spectrum Threat Response Planning and Operations*, AFMAN 32-4004, *Emergency Response Operations,* AFI 10-229, and unit directives.

3.9.31. **(ANG)** If applicable.

3.9.32. Actively solicit inputs and promotes the PIP IAW **Chapter 8** of this instruction.

3.9.33. Ensure the Corrosion Control Program is implemented and properly managed IAW AFI 21-105.

3.9.33. **(ANG)** ANGI 21-105 also.

3.9.34. Establish and review vehicle requirements/authorizations and ensure compliance with vehicle management procedures.

3.9.35. Ensure personnel are familiar with the unit CDDAR Program and understand local procedures designed to protect personnel and prevent further damage to aircraft, equipment, and other resources.

3.9.36. Manage the flight's responsibilities in the FOD and DOP program IAW **Chapter 14** of this instruction.

3.9.37. Provide input/oversee the unit's FCC Program, if applicable.

3.9.38. Establish a flight Precious Metals Recovery Program, as applicable, IAW AFMAN 23-110 and retain/file records IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil/**.

3.9.38. **(ANG)** N/A to ANG. The following only applies to the ANG. Complies with the MXG Precious Metals Recovery Program, as applicable, IAW AFMAN 23-110 and retain/file records IAW AFMAN 37-139, *Records Disposition Schedule* located at **https://afrims.amc.af.mil/**.

3.9.38.1. Ensure procedures are followed to control disposal of recoverable materials, including scrap metal and silver-bearing materials, IAW AFMAN 23-110 and TO 00-25-113, *Conservation and Segregation of Critical Alloys and Precious Metal Bearing Parts and Scrap.*

3.9.39. Assign section supervisors.

3.9.40. Manage additional duties, leaves, ancillary training, and assign personnel to balance workload and minimize negative impacts on the work force.

3.9.41. Coordinate the work shift schedule with the production supervisor and Operations Officer/ MX SUPT to ensure sufficient people are available to support the mission.

3.9.42. Ensure personnel are coded with appropriate SEI on the UPMR IAW AFI 36-2232.

3.9.43. Ensure proper asset management by reviewing MIS data records, the D23, and other pertinent products to minimize shortfalls. When applicable, ensure warranty items are loaded in MIS according to applicable directives. Accomplish deficiency reports (DR) on warranted item failures IAW TO 00-35D-54, and AFMAN 64-110*, Manual for Weapons Systems Warranties*. Coordinate with the QA product improvement manager (PIM), as needed.

3.9.44. Ensure reparable parts are promptly processed through repair channels within the required time frame IAW AFMAN 23-110.

3.9.45. Approve requirements for bench stocks and provide guidance as to the type, location and use by one or more sections. Spot check bench stocks to evaluate adequacy, supply discipline, and housekeeping.

3.9.46. Consolidate section inputs for items received in supply requiring functional check, operational programming or calibration. Submit the listing to the LRS Materiel Management flight.

3.9.47. Coordinate all new AGE requirements through the AGE Flight Chief to ensure support capability and eliminate unnecessary duplication of equipment.

3.9.48. Ensure tool/equipment and bench stock storage areas are managed IAW **Chapter 10** and **Chapter 11** of this instruction.

3.9.49. Manage administrative details, including personnel performance reports, additional duties, training, appointments, etc.

3.9.50. Review all AFTO Forms 22 for accuracy and applicability prior to submission to QA, or LSC for loading related issues.

3.9.51. **(Added-ANG)** Actively support the Unit MSEP by attending quarterly MSEP Summary meetings, validating all self inspection results in their span of control, and thoroughly investigating all failed task evaluations and non-compliant self inspection items.

3.9.52. **(Added-ANG)** Submit corrective action summaries to the immediate supervisor for all failed task evaluations within their span of control on a monthly basis.

3.10. Section NCOIC. The section NCOIC is responsible to the Flight CC/Chief or AMU OIC/SUPT for the leadership, supervision, and training of assigned personnel. The section NCOIC is a first-line manager

and supervisor of maintenance production and, as such, is the technical authority and advisor in that area. When sections are subdivided, element leaders perform the appropriate functional responsibilities. The section NCOIC will:

3.10.1. Establish a work center safety program designed specifically for mishap prevention and identification/abatement of hazards IAW AFOSHSTDs, AFI 91-202, and other applicable safety directives.

3.10.2. Monitor, track, and ensure occupational safety, fire prevention, occupational and environmental health requirements, and respirator training (initial and recurring) are accomplished for assigned personnel. Ensure AF IMT 55 is documented IAW AFI 91-301.

3.10.3. Enforce strict adherence to technical data and management procedures. Ensure all supervisors and technicians understand the importance of using current technical data, advocate use of the TO improvement program, and ensure work center TO files are maintained according to TO 00-5-1. Conduct face-to-face counseling with personnel who violate directives.

3.10.4. Ensure housekeeping, safety, security and environmental control standards are followed.

3.10.5. Perform production and supervisory inspections.

3.10.6. Ensure aircraft and equipment forms and MIS documentation are completed, accurate and accomplished for each shift. Ensure aircraft status is accurately reflected in both the maintenance forms and the MIS.

3.10.7. Review the work center's discrepancies in the MIS on a daily basis (IMDS-CDB screen #100/380 and G081 screen #8069/9129A/67033) to monitor scheduled and deferred events. Close, reschedule, or defer all events beyond their scheduled start date and time.

3.10.8. Review transcribed AFTO 781-series IMTs/forms, as applicable, and work center MIS data entries for the previous day, and all preceding non-duty days, for job accuracy and completeness (IMDS-CDB Screen #100 and G081 Screen #67137).

3.10.9. Ensure all personnel assigned to nuclear-equipped units annotate the work center event (WCE) with the statement "Two-Person Concept Applies" IAW Nuclear Surety procedures in applicable 91-series AFIs.

3.10.10. (For AMUs only) Validate aircraft automated records checks and submit to AMU OIC/SUPT for review IAW **Chapter 7** of this instruction for records check procedures.

3.10.11. Ensure MIS and aircraft forms are documented by the individual completing the task. ***EXCEPTION:*** For Red Ball maintenance, follow locally developed documentation procedures.

3.10.11. **(ANG)** Ensure MIS and aircraft forms are documented by the individual completing the task, when possible. In circumstances where this is not practical, another individual may document MIS, but the actual individual's employee number (G081)/ userid (IMDS-CDB) that completed the task will be entered in MIS and it will match the aircraft forms. As soon as practical, the individual who completed the task will complete the MDC and verify the corrective action.

3.10.12. Evaluate maintenance quality, personnel qualifications, and training of assigned personnel. Nominate quality performers for Flight/AMU recognition.

3.10.13. Determine maintenance tasks requiring IPIs. Forward the IPI listing to Flight CC/Chief or AMU OIC/SUPT.

3.10.14. Ensure TMDE maintenance and calibration requirements are accomplished.

3.10.14. **(ANG)** Ensure TMDE that is overdue calibration, is not used without NGB/A4MM approval for calibration extension.

3.10.15. Develop workcenter training requirements. Evaluate assigned personnel and determine their individual training needs. Track training requirements and ensure personnel attend required training. Ensure training documentation is accurate. When applicable, ensure Air Education Training Command (AETC)-developed training materials are used to supplement qualification training.

3.10.16. Ensure personnel are trained on MIS subsystems.

3.10.17. Develop CUT requirements as required by the unit mission IAW **Chapter 1** of this instruction and AFI 36-2232. Ensure CUT does not interfere with upgrade/qualification training.

3.10.18. Review, evaluate, and take corrective action based on QA and other inspection reports.

3.10.19. Ensure personnel follow procedures for identifying, recording and clearing repeat/recur and CND discrepancies.

3.10.20. Review current and updated publications and inform personnel of any significant changes. Ensures work center publications are current and required publications are available to meet work center needs.

3.10.21. Ensure section personnel coordinate all flightline on-equipment aircraft maintenance with the flightline expediter.

3.10.22. Ensure personnel and equipment are identified and prepared to deploy for taskings IAW AFI 10-403, AFI 10-215, and AFMAN 10-401.

3.10.23. Actively solicit inputs and promotes the PIP IAW **Chapter 8** of this instruction.

3.10.24. Conduct and report self-inspections IAW **Chapter 14** of this instruction and local directives.

3.10.25. Manage CTK and Supply Programs (e.g., bench stocks, and operating stocks) IAW **Chapter 10** and **Chapter 11** of this instruction.

3.10.26. Manage the section's Repair Cycle Program. Review the D23 weekly and other pertinent supply products to ensure proper supply discipline.

3.10.27. Provide work and workforce planning factors (projected leaves, section backlog, etc) to the Flight CC/Chief or AMU OIC/SUPT. Advises the Flt CC/Chief of any factors limiting the maintenance capability.

3.10.28. Ensure supervisors perform KEEP responsibilities IAW **Chapter 14** of this instruction.

3.10.29. Establish procedures to control, store, and manage alternate mission equipment (AME); maintenance, safety, and protective equipment (MSPE); and Dash-21 equipment according to AFI 21-103.

3.10.30. Maintain WRM assets such as parachutes, support equipment, vehicles, etc.

3.10.31. Identify items requiring calibration or operational check before installation. Provide a list of these items for distribution to LRS and maintenance.

3.10.32. Ensure technicians are available to assist with aircrew debriefing, as requested, to assess weapon system performance.

3.10.33. Designate Tow Team Supervisors and recommends individuals for addition to the SCR.

3.10.34. **(Added-ANG)** Maintains TMDE master ID number lists when required.

3.10.35. **(Added-ANG)** Maintains historical records. Element supervisors maintain AFTO Forms 95, *Significant Historical Data*, on selected, significantly repairable, serialized components for which historical failure data would enhance repair. Historical records are mandatory for SPRAM LRUs, and items asterisked in weapons system Dash 6 manuals. Historical records should be automated (TO 00-20-1).

3.10.36. **(Added-ANG)** Will review an electronic version of the Qualified Products Listing (QPL) to verify a cleaning product is authorized for use on aircraft/equipment. The QPL can be located at the following Air Force Corrosion Prevention and Control Office web site: (**https://www.afcpo.robins.af.mil**).

3.10.37. **(Added-ANG)** Notifies QA prior to start of the first TCTO accomplishment.

3.10.38. **(Added-ANG)** Actively support the Unit MSEP by attending quarterly MSEP Summary meetings, validating all self inspection results in their span of control, and thoroughly investigating all failed task evaluations and non-compliant self inspection items.

3.10.39. **(Added-ANG)** Submit corrective action summaries to the immediate supervisor for all failed task evaluations within their span of control on a monthly basis.

3.11. Production Superintendent (Pro Super). The production superintendent directs the overall maintenance effort of their unit. The pro super will be a SNCO or civilian equivalent. The pro super will:

3.11. (ANG) Production Supervisor (Pro Super). N/A to the ANG. The following only applies to the ANG: The Production Supervisor directs the overall maintenance effort of their unit. The Pro Super shall be a SNCO. At local option, Expediter and Production Supervisor duties may be combined provided all duties of both functions are performed. The Pro Super will:

3.11.1. Enforce strict adherence to technical data and management procedures. Advocate the importance of using current technical data and use of the TO improvement program IAW TO 00-5-1.

3.11.2. Ensure aircraft and equipment forms and MIS documentation are completed, accurate and accomplished. Ensure aircraft status is accurately reflected in both the maintenance forms and the MIS.

3.11.3. Sign ERs IAW TO 00-20-1 when authorized by the MXG/CC IAW **Chapter 14**, **Table 14.1.** of this instruction.

3.11.4. Direct the maintenance effort using available resources. Participate in developing and executing the monthly and weekly flying and maintenance schedules/plans.

3.11.5. Manage the maintenance production effort by assigning priorities to meet the flying and maintenance schedules. Aggressively works not-mission capable (NMC) aircraft.

3.11.6. Attend the MXG daily production maintenance meeting.

3.11.7. Fully understand actions required by the squadron under OPLAN 8044 or contingency plans. Develop, ensure currency of, and direct the aircraft generation sequence.

3.11.8. Fully understand and be prepared to implement specific disaster control duties and squadron responsibilities pertaining to aircraft/SE movement and personnel evacuation IAW AFI 10-2501,

AFMAN 32-4004, AFI 10-229, and unit directives. Maintain a current copy of the on-base disaster map with cordon overlay and appropriate functional checklists outlining duties during disaster exercises.

3.11.9. Determine/track/report aircraft status, including ETIC, IAW AFI 21-103 and MAJCOM/local directives.

3.11.10. Authorize CANN actions when authorized by the MXG/CC IAW **Chapter 14**, **Table 14.1.** of this instruction. Coordinate with appropriate agencies, and direct their unit personnel to accomplish CANN actions IAW **Chapter 14** of this instruction, and MAJCOM/local directives.

3.11.11. Thoroughly understand the unit CDDAR Program and local procedures designed to protect personnel and prevent further damage to aircraft, equipment, and other resources.

3.11.12. Inform MOC of the maintenance effort and coordinate with MOC and other squadrons for support. Provide aircraft status updates as required.

3.11.13. Verify MICAP conditions exist.

3.11.14. In conjunction with weapons expediter ensure requirements in AFI 21-201 and local instructions for munitions reconciliation are strictly followed.

Chapter 4

AIRCRAFT/HELICOPTER MAINTENANCE SQUADRON (AMXS/HMXS)

4.1. General. AMXS/HMXS services, inspects, maintains, launches, recovers assigned and transient aircraft (if applicable), and ensures all mobility requirements are met. There is normally one AMXS/HMXS per aircraft wing and one AMU for each assigned Operations Squadron (OS). In order to maximize the efficent use of resources, MAJCOMS may organize or align an AMU to support more than one OS. In MAF units (i.e., Tactical Airlift, Strategic Airlift and Air Refueling units), there will be one Support Flight for each AMXS/HMXS. SOF and CAF units will normally establish a support section in each AMU. ***NOTE:*** The terms and responsibilities associated with the sections identified in this chapter may differ or may not be applicable to all units, based on unit size, mission, and MDS assigned (e.g., rescue squadrons).

4.1. (ANG) General. N/A to the ANG. The following only applies to the ANG: Services, inspects, maintains, launches, recovers assigned and transient aircraft (if applicable), and ensures all mobility requirements are met. **NOTE**: The terms and responsibilities associated with the sections identified in this chapter may differ or may be N/A to all units based on unit size, mission, and MDS assigned.

4.1.1. Aircraft Generation. Aircraft generation is the cumulative effort required to launch and recover sorties. It includes activities that generate sorties and train personnel to generate sorties, and is predominantly accomplished in an on-equipment environment. Units will sustain capability to accomplish sortie generation for peacetime and wartime taskings. A typical sortie generation sequence usually begins with recovery of an aircraft from another mission. Because aircraft recovery and generation activities are directly related, aircraft recovery is the first step in aircraft generation.

4.1.2. On-equipment maintenance is performed to prevent equipment/system failures, repair them when they occur, and improve airframe availability and reliability.

4.1.3. Launching and recovering aircraft. Aircraft technicians ensure mission accomplishment by launching and recovering aircraft. During the launch and recovery of aircraft, deficiencies will be identified on aircraft and equipment. These deficiencies, in the form of jobs, are assigned job numbers, and repair priorities are aligned to most effectively meet mission requirements.

4.2. Squadron Commander Responsibilities. The squadron commander performs command functions outlined by public law, or directives common to all AF squadron commanders. The Commander is responsible to the MXG/CC for overall squadron management. General responsibilities are outlined in **Chapter 3** of this instruction.

4.3. Operations Officer/Maintenance Superintendent (MX SUPT) Responsibilities. The Operations Officer/MX SUPT is responsible to the SQ/CC for maintenance production. In addition to common responsibilities outlined in **Chapter 3** of this instruction, the Operations Officer/MX SUPT:

4.3.1. Assures standardized procedures and organizations among AMUs.

4.3.1. **(ANG)** If applicable.

4.3.2. Manages the IFF Mode-IV and RWR program IAW **Chapter 14** of this instruction.

4.3.2. **(ANG)** If applicable.

4.3.3. Develops written procedures in coordination with the WWM, Weapons Safety Manager, and Airfield Management for EOR inspections, as required.

4.3.3. **(ANG)** If applicable.

4.3.3.1. Ensures sufficient personnel, equipment, and facilities are assigned, maintained, and provided to properly perform EOR inspections IAW **Chapter 14** of this instruction.

4.3.4. Ensures each AMU provides input for development of an annual maintenance plan and reconciles it with MOF PS&D section to ensure maintenance capabilities are not exceeded and commitments can be met. Minimize aircraft and munitions reconfigurations.

4.3.5. Establish aircrew debriefing procedures.

4.3.6. Establish hot brake response procedures.

4.3.7. Coordinate with other maintenance squadrons to execute a rotation plan that balances grade, skill level and experience of all personnel between AMU, back shop and within different functions of an AFSC. Rotate personnel as necessary to broaden individual experience/knowledge. (N/A to the ARC)

4.3.8. Monitors the squadron DCC and Flying Crew Chief (FCC) programs.

4.3.8. **(ANG)** N/A to the ANG. The following only applies to the ANG. The DCC program does not apply to the ANG (except for the 116 ACW and 153 AW active duty personnel). Monitors the FCC program.

4.3.9. Ensures personnel understand the purpose of the AF IMT 2408, **Generation Maintenance Plan**, and the AF IMT 2409, **Generation Sequence Action Schedule**.

4.3.9. **(ANG)** Or electronic form containing the same information.

4.3.10. Ensures an explosive safety and chaff/flare academics and loading program for airlift, helicopter, and tanker units is established.

4.3.11. Publishes procedures covering the storage, control, and handling of starter cartridges (flightline and alert) to meet alert, contingency, and training, requirements.

4.3.12. Provide input to MDSA for the monthly metrics report to MAJCOM.

4.3.13. Oversees and coordinates daily hot pit operations as required.

4.3.14. For Centralized Aircraft Support System (CASS) units:

4.3.14.1. Ensures conditioned air ducts, liquid coolant hoses, start (bleed) air ducts, power cables, and any couplings used to interface with the aircraft are inspected for serviceability.

4.3.14.2. Provides housekeeping of the pits to include water or snow removal and removal of pit lids to provide access.

4.4. AMU. AMUs are responsible for servicing, inspecting, maintaining, launching, and recovering assigned aircraft, and ensuring all mobility requirements are met. AMUs may include the following sections: Aircraft, Specialist, Scheduling, Weapons, Debrief and Support.

4.5. AMU OIC/SUPT Responsibilities. The AMU OIC/SUPT is responsible to the Operations Officer/MX SUPT for sortie generation and the management/supervision/training of assigned personnel. The

AMU OIC/SUPT allocates personnel and resources to the production effort. In addition to the common responsibilities in **Chapter 3** of this instruction, the AMU OIC/SUPT:

4.5.1. Reviews PRDs daily and ensures proper maintenance actions are taken.

4.5.2. Reviews all aborts and ensures proper maintenance actions are taken.

4.5.3. Monitors aircraft phase/isochronal/periodic/Home Station Check (HSC (C-17)) flow.

4.5.4. Ensures sufficient number of personnel are engine run qualified IAW **Chapter 14** of this instruction.

4.5.5. Chairs a daily AMU maintenance production meeting.

4.6. Production Superintendent. The production superintendent is responsible for flightline maintenance production. In squadrons with eight or less assigned aircraft, production superintendent and flightline expediter duties may be combined provided duties of both functions are performed. Duties are outlined in **Chapter 3** of this instruction.

4.6. (ANG) Production Superintendent. N/A to the ANG. The following only applies to the ANG: The Production Superintendent is responsible for squadron maintenance production. The MXG/CC may combine Production Superintendent and flightline expediter duties. Duties are outlined in **Chapter 3**.

4.7. Flightline Expediter. The expediter ensures maintenance is accomplished. An expediter is assigned for each aircraft section. Expediters work for the Pro Super and manage, control and direct resources to accomplish scheduled/unscheduled maintenance to generate aircraft. The specialist expediter (if used), weapons expediter, back shop maintainers, and section NCOICs coordinate all aircraft maintenance actions with the flightline expediter. Expediters will:

4.7. (ANG) Flightline Expediter: N/A to the ANG. The following only applies to the ANG: Expediters lead people and manage resources to accomplish scheduled and unscheduled maintenance. Expediters work with the Pro Super and MOC in generating aircraft, ensuring maintenance accomplishment and sortie production by managing, controlling and directing allocated resources. MXG/CC may combine Flightline Expediter and Pro Super duties provided all duties of both functions are performed. Expediter's responsibilities:

4.7.1. Remain on the flightline when maintenance personnel are performing flightline maintenance and launching/recovering aircraft. Flightline expediters do not normally perform production inspections (e.g., sign off "Red Xs" and perform IPIs).

4.7.2. Review aircraft forms and sign ERs IAW TO 00-20-1 when authorized by the MXG/CC IAW **Chapter 14**, **Table 14.1.**. of this instruction.

4.7.3. In conjunction with weapons expediter ensure requirements in AFI 21-201 and local instructions for munitions reconciliation are strictly followed.

4.7.4. Enforce strict adherence to technical data and management procedures. Advocate the importance of using current technical data and use of the TO improvement program IAW TO-00-5-1.

4.7.5. Ensure aircraft and equipment forms and MIS documentation is complete, accurate and accomplished. Ensure aircraft status is accurately reflected in both the maintenance forms and the MIS.

4.7.6. Notify MOC and Pro Super when aircraft are ready for flight (crew ready and crew show), engine start, taxi, block-in, and aircraft configuration (e.g., fuel, munitions, cargo). AETC training organizations will notify the MOC and Pro Super only by exception (e.g., crew does not show, engine fails to start).

4.7.6. **(ANG)** Notify for ER also.

4.7.7. Fully understand and be prepared to implement specific disaster control duties and squadron responsibilities pertaining to aircraft/SE movement and personnel evacuation IAW AFI 10-2501, AFMAN 32-4004, AFI 10-229, and unit directives.

4.7.8. Maintain copies of the following in the expediter vehicle: flying schedule, emergency action and functional checklists, base grid map with cordon overlay, IPI listings, Minimum Essential Subsystem List (MESL), quick reference list (QRL) (if developed), a Work Unit Code (WUC) manual, and tracking device for aircraft status. Track the following information for each aircraft to include: aircraft serial number, location, priority, status and estimated time in commission (ETIC), configuration, OAP condition codes, fuel load, munitions load, and remarks. Show all limitations against the full systems list (FSL) and basic system list (BSL) column as itemized on the MESL IAW MAJCOM guidance. Reconnaissance units ensure devices depicting aircraft status comply with program security requirements.

4.7.9. Follow established cannibalization procedures and update CANN-action status on assigned aircraft.

4.7.10. Monitor aircraft OAP status and ensure sampling is completed IAW AFI 21-124.

4.7.11. Thoroughly understand the unit CDDAR Program and local procedures designed to protect personnel and prevent further damage to aircraft, equipment, and other resources.

4.7.12. Ensure parts are ordered with appropriate priorities. Document numbers are relayed to the Pro Super, MOC, and crew chiefs/specialists (for entry into aircraft forms), and parts are picked up expeditiously from the Aircraft Parts Store.

4.7.12. **(ANG)** N/A to the ANG. The following only applies to the ANG: Ensures parts are ordered using appropriate priorities, document numbers are relayed to the Pro Super and MOC. Expediters may verify MICAP requisitions.

4.7.13. Request support beyond AMU capability from the MOC.

4.7.14. Direct AGE drivers to position AGE as required and notify the AGE driver of AGE requiring maintenance.

4.7.15. Coordinate aircraft status (e.g., discrepancies, WUC/logistics control number (LCN), estimated time in comission (ETIC), job completion) and configuration status IAW AFI 21-103 with the MOC and the production superintendent.

4.7.16. **(Added-ANG)** Tracks all discrepancies identified during "Red Ball" maintenance and takes proper follow-up action if applicable.

4.8. Aircrew and Maintenance Debrief Section. The debrief section works for the AMU except in MAF/AFSOC units where it may be centrally located. Debriefing is conducted at the termination of each sortie/mission or when a sortie/mission is aborted. Aircraft scheduled for turn-around sorties/missions need not be debriefed if returned in landing status Code 1 or 2. However, debriefing is required, regardless

of landing status, after the last flight of the day for each aircrew. MAJCOMs will develop debrief procedures for Remote Split Operations for both aircraft and ground control stations to adequately capture all maintenance discrepancies.

4.8. (ANG) Maintenance Debrief. N/A to the ANG. The following only applies to the ANG: The MXG/CC shall establish a debriefing function and the MOC normally has overall management responsibility. At the MXG/CC option, the AMXS may be given the responsibility for Debrief.

4.8.1. Debrief sections will use aircraft fault reporting manuals to help identify fault codes and speed fault isolation. Include fault codes when documenting discrepancies in the aircraft forms. Use automated debrief tools such as the Computerized Fault Reporting System.

4.8.1.1. When fault reporting manuals are not published for the weapon system, units shall develop aircrew debriefing guides.

4.8.2. Debrief sections shall develop guides, if not already provided by the MAJCOM, that contain detailed procedures identifying responsibilities for dropped object reporting, aborts or In-Flight Emergencies (IFE), flight control impoundment actions, and engine malfunctions. Debriefing guides are reviewed and approved by QA.

4.8.3. Debrief sections use operational utilization update screens in MIS to enter flying time information. Debrief sections will develop procedures to ensure flying times and installed engine event history recorder (EHR) readings, if equipped, for both home station and deployed sorties/missions, are updated no later than the next duty day after occurrence.

4.8.4. Debrief aircrew following the procedures outlined in this instruction, AFI 21-103, and by completing applicable screens in the MIS automated debriefing subsystem.

4.8.4. **(ANG)** N/A to the ANG. The following only applies to the ANG: Discrepancies are sent to MOC either by automated or manual means. Assign status codes to aircraft according to AFI 21-103 and appropriate MESL. Debriefing personnel must thoroughly understand and use the MESL found in command supplements to AFI 21-103 or maintained on the ANG web site.

4.8.5. Check AFTO FORM/IMT 781H (appropriate blocks) for Flight Condition Data, Airframe Time, Block 13 Servicing Data, and signature of aircraft commander or designated representative.

4.8.6. Debrief personnel will input discrepancy and deviation information, utilization, and applicable flight data (to include landing status, system capability, and other applicable cause code) into the MIS. Expediters or production superintendents will ensure completed AFTO 781-series IMTs/forms are provided to the debrief function by the end of the flying day if debriefs have been suspended due to surges. AFTO 781-Series IMTs/forms will not be sent to Flying Operations before MIS updates. Local backup procedures will be used for recording data when the MIS becomes inoperable.

4.8.6. **(ANG)** Ensure that aircraft utilization data recorded on the AFTO Form 781, *Aircrew/Mission Flight Data Document*, is entered into the MIS. The responsibility for inputting all flight data shall be locally determined.

4.8.7. Debriefing record files are developed for each aircraft. Files are arranged by aircraft tail number. Include automated debriefing sortie recaps for the most recent five sorties (minimum) to help properly identify repeat/recur discrepancies (software disk back-up copies containing the same information required by hard copy debriefing information may be filed in lieu of hard copies).

4.8.8. Utilize MIS to identify and research discrepancies for Repeat/Recur trends, and document them accordingly in the AFTO Form/IMT 781A.

4.8.9. Debriefers, with the assistance of technicians, ensure previously documented discrepancies are reviewed and identified as repeat/recurs.

4.8.9.1. All repeat/recurs are identified on automated debriefing sortie recaps and in the AFTO Form/IMT 781A by automated method, red stamp, pen, marker, etc.

4.8.9.1.1. **(Added-ANG)** Debriefers shall inform the Pro Super, MOC and Expediter when a repeat/recur occurs.

4.8.9.1.2. **(Added-ANG)** Aircraft debriefing is necessary for all weapons or support systems, but is done differently depending on the complexity of the systems involved. Regardless of the debriefing option elected, procedures are set up to identify "Repeat/Recurring" discrepancies.

4.8.9.1.3. **(Added-ANG)** A repeat discrepancy on an aircraft occurs on the next or attempted sortie after corrective action has been taken and the system or subsystem is used and indicates the same malfunction.

4.8.9.1.4. **(Added-ANG)** A recurring discrepancy on an aircraft occurs on the second through fourth sortie or attempted sortie after corrective action has been taken and the system or subsystem is used and indicates the same malfunction.

4.8.9.1.5. **(Added-ANG)** A corrective action occurs when parts are removed, replaced, repaired, or when any form of troubleshooting adjustment or cleaning of contacts is accomplished.

4.8.9.1.6. **(Added-ANG)** A discrepancy in the aircraft forms requesting an in-flight ops check does not negate the identification of a repeat/recur discrepancy if the malfunction returns.

4.8.10. Use the appropriate landing status code (**Table 4.1.**) and the appropriate system capability code (**Table 4.2.**) for the completion of a sortie/mission.

4.8.11. Provide the MOC with aircraft identification numbers and system WUCs for each aircraft debriefed with a landing status Code-3 using the MESL in the MAJCOM Supp to AFI 21-103. The flightline Production Superintendent makes the final determination on the status of aircraft; MOC ensures the status is accurate and updates the status in the MIS.

4.8.12. Debriefers enter one of the deviation cause codes (**Table 4.3.**) into the MIS to indicate the reason for the deviation and the agency that caused a deviation (AFCSM 21-574, *Automated Debriefing*).

4.8.13. Debrief sections capture ASIP information for the Aircraft Structural Integrity Management Information System (ASIMIS) IAW AFI 63-1001, *Aircraft Structural Integrity Program* as directed by the PM. ***NOTE:*** Not applicable to F-16 or F-22A units.

4.8.14. Deployed Debriefing Procedures.

4.8.14.1. When debrief personnel are not deployed, the senior deployed maintenance officer/NCO ensures debriefing documents are completed by properly trained deployed maintenance personnel.

4.8.14.2. Use automated debrief tools as the primary debriefing instrument. If MIS is available at the deployed location, MIS will be used. Units include blank printouts of MIS debriefing screens or locally devised products in deployment packages for use if MIS is not available. Use blank

printouts as manual documentation method and send documents to home station for data transcribing by the most expeditious means available. Retain duplicates at the deployed site to help in future debriefings. Turn in, validate and reconcile all documents with the squadron debrief section upon re-deployment.

4.8.15. Debriefing Enhancements. Units have the option of using the following tools to enhance the debriefing process:

4.8.15.1. Cockpit Mock-up. Display cockpit photographs of each assigned MDS to permit identification of indicators and switches at the debriefing station. Actual size photographs are recommended. Dash-1 TO illustrations or engineering drawings may be substituted for photographs.

4.8.15.2. Radar Scope Malfunction Photographs. To assist in identifying faulty radar scope presentations, identify common scope malfunctions using processed radar scope camera film. Index and maintain photographs in the debriefing facility. Maintain duplicates in the appropriate avionics or support shop. When this method is used, the applicable photograph is referenced in the descriptive narrative of the fault for effective cross-referencing. Revise photographs when additional scope malfunctions are identified. Squadrons with weapon systems assigned that are not equipped with scope cameras are encouraged to provide photographs using base resources.

4.8.15.3. Airborne Videotape Recorder (AVTR) Playback Equipment. Use an AVTR playback machine and monitor (compatible with all MDS-installed equipment) during debriefing to assist in screening in-flight data.

4.8.16. Aviation Fuels Management and Accounting. Refer to AFI 23-202, *Buying Petroleum Products and Other Supplies and Services Off-Station,* for off-station purchases and fuels accounting information. During small deployments involving minimal maintenance support, the aircraft commander transmits fuel-servicing information using the most expeditious method to the Refueling Document Control Officer (RDCO)/Installation Control Officer (ICO).

Table 4.1. Landing Status Codes.

CODE	STATUS
Code 0	Ground abort.
Code 1	Aircraft mission capable with no additional discrepancies.
Code 2	Aircraft or system has minor discrepancies but is capable of further mission assignment within normal turnaround times.
Code 3	Aircraft or system has major discrepancies in mission essential equipment that may require extensive repair or replacement prior to further mis sion assignment. The discrepancy may not affect safety-of-flight and the aircraft may be NMC flyable.
Code 4	Aircraft or system has suspected or known radiological, chemical, or biological contamination.
Code 5	Aircraft or system has suspected or known battle damage.

NOTE: Debriefers enter code “8” in MIS for aircraft debriefed as code “4” or “5”. MESL requirements determine if aircraft mission capability status is NMC or PMC.

Table 4.2 System Capability Codes.

CODE	STATUS
Code 0	System flown with a known discrepancy, no additional discrepancies noted. System can be used.
Code 1	System used and performed satisfactorily. No maintenance required.
Code 2	System used and performed satisfactorily. A minor malfunction exists, but system is capable of further mission assignment.
Code 3	System performance was unsatisfactory. This system did not cause an abort.
Code 4	System performance was unsatisfactory. This system caused or contributed to an abort.
Code 5	System out of commission prior to takeoff.
Code 6	System installed but not used.
Code 7	System not installed.
Code 8	Aircraft or system has suspected or known radiological/biological contamination.

Table 4.3. Deviation Cause Codes.

CODE	DEVIATION REASON
ATx	Air Traffic
GAA	Ground Abort, before engine start, maintenance
GAB	Ground Abort, after engine start, before taxi, maintenance
GAC	Ground Abort, after taxi, maintenance
HQT	Higher Headquarters, MAJCOM
HQN	Higher Headquarters, NAF
HQP	Higher Headquarters, other
MTx	Maintenance
OPx	Operations
SUx	Supply
SYx	Sympathy
WXx	Weather
OTx	Other
Xxx	MAJCOM/Local Option

NOTE: Use x for any character for MAJCOM/local use.

4.8.16.1. **(Added-ANG)** During debriefing, debriefers are to remove the AF IMT 664, *Aircraft Fuels Documentation Log* from the forms binder, and return it to the aircrew.

4.8.17. **(Added-ANG)** Aircraft scheduled for turn-around sorties need not be debriefed if returned in code 1 or 2 status. However, debriefing is required, regardless of status, after the last flight of the day.

4.8.18. **(Added-ANG)** Ensure that there is emphasis of data collection during debriefing.

4.8.19. **(Added-ANG)** When automated Maintenance Data Documentation (MDD) Systems, including the debriefing portion are available; data must be input using procedures outlined in the appropriate user manuals or directives. When automated systems are not available, alternate methods must be used, until the data can be input. To the greatest extent possible, all efforts must be made to relay data as soon as possible to the input location.

4.8.20. **(Added-ANG)** MQ-1 (Predator)/MQ-9 (Reaper) Remote Split Operations (RSO) Debrief

4.8.20.1. **(Added-ANG)** Responsibilities:

4.8.20.1.1. **(Added-ANG)** LRE debriefer – Prior to aircraft launch, LRE debriefer will export active AFTO 718As from IMDS to a word document and post to CAOC's Predator website for Mission Crew Element (MCE) to review prior to aircraft handover. If website is unavailable, LRE debriefer will notify MCE debriefer that the website is offline and the MCE debriefer will print hard copy AFTO Form 781As from IMDS to give to MCE Pilot-in-Command (PIC). In the event of interchange, ground abort, or air abort LRE debriefer will post the replacement aircraft forms in similar fashion. LRE debriefer will perform final aircraft debrief with LRE PIC supplemented with discrepancies from MCE PICs. LRE debriefer will remove aircraft 781As from website after final debrief.

4.8.20.1.2. **(Added-ANG)** LRE PIC – Review AFTO Form 781 series forms binder prior to launch. Notify Mission Commander (MCC) and/or MCE PIC of aircraft tail number changes as they occur. Perform face-to-face debrief with LRE debriefer at the completion of every handover and landing.

4.8.20.1.3. **(Added-ANG)** MCE PIC – Review AFTO Form 781As on CAOC's Predator website prior to accepting airborne aircraft. If website is unavailable, MCE PIC will obtain aircraft 781A IMDS automated forms printout from MCE debriefer. MCE PIC may request the MCE debriefer and a system specialist to enter the GCS for on-the-spot debriefing and fault isolation. MCE PIC will perform face-to-face debrief with MCE debriefer immediately after aircrew changeover takes place. MCE PIC will hand-carry GCS AFTO Form 781 series forms binder and manual aircraft 781As to debrief (if website is offline). MCE PIC documents any aircraft PRDs on website. If website is offline, document aircraft discrepancies on manual AFTO 781As. Document any Ground Control Station (GCS) discrepancies in GCS AFTO Form As. MCE PIC will be available during debrief to answer question from the LRE debriefer or technicians.

4.8.20.1.4. **(Added-ANG)** MCE debriefer – Print 781A automated forms during period when notified by LRE debriefer or MCE PIC that CAOC's Predator website is unavailable. Dispatch system specialist as requested by the aircrew. Review GCS AFTO 781 series forms after aircrew changeovers, handback to LRE, or after KU-to-KU handover. MCE debriefer will return GCS forms binder and manual aircraft forms (if used) to the GCS after debrief. Enter GCS discrepancies into IMDS and notify affected work center. MCE debriefer will not enter aircraft discrepancies into IMDS as the aircraft may still be airborne and controlled by the LRE. Instead MCE debriefer will verify that discrepancies are accurately entered in the 781A on the website. MCE debriefer will confirm via telephone with LRE debriefer that all aircraft dis-

crepancies were received. Variations, such as the use of telephone, mIRC, and VOIP phones, are authorized during periods of communication outage with LRE (i.e. LAN outages). MCE debriefer will maintain a manual hardcopy of each aircraft discrepancy for a minimum of 30 days.

4.8.20.1.5. **(Added-ANG)** Multiple Aircraft Control GCS **(**MAC GCS) sensor operator – perform aircraft and MAC GCS face-to-face debrief with MCE debriefer upon aircrew changeover and aircraft handback to LRE regardless of landing status or previously reported discrepancies. This is necessary as PIC normally is in control of more than one aircraft and remains in MAC GCS until relieved.

4.8.20.2. **(Added-ANG)** Procedures:

4.8.20.2.1. **(Added-ANG)** LRE debriefer exports AFTO Form 781A from IMDS to a word document and uploads document to CAOC Predator website.

4.8.20.2.2. **(Added-ANG)** LRE PIC reviews aircraft AFTO 781 forms binder and relays pertinent configuration information to MCE PIC.

4.8.20.2.3. **(Added-ANG)** After launch, aircraft control is passed to MCE PIC for duration of mission. MCE PIC will review the aircraft 781 Forms on the CAOC Predator website prior to beginning a mission segment. LRE PIC performs LRE GCS debrief with LRE debriefer at this time.

4.8.20.2.4. **(Added-ANG)** During mission phase, MCE aircrew will perform face-to-face debrief with MCE debriefer after every aircrew changes, Ku-to-Ku handover, and handback regardless of landing status codes.

4.8.20.2.5. **(Added-ANG)** MCE debriefer will document discrepancies on AFTO Form 781A on CAOC Predator website during debrief and contact LRE debriefer to inform them of discrepancy. MCE aircrew that reported the discrepancy will be available at this time to answer additional questions from system technicians at the LRE.

4.8.20.2.6. **(Added-ANG)** After aircraft handback, MCE debriefer will contact LRE debriefer and inform LRE of landing status code and any discrepancies discovered during the MCE phase of the mission. MCE debriefer performs MCE GCS debrief at this time.

4.8.20.2.7. **(Added-ANG)** After aircraft landing, LRE PIC performs aircraft debrief with LRE debriefer for the launch/recovery phases of the mission.

4.8.20.2.8. **(Added-ANG)** Discrepancies reported by MCE PIC/debriefer will be entered in aircraft AFTO Form 781A during LRE debrief by LRE debriefer. LRE debriefer performs IMDS debrief of aircraft and LRE GCS using landing status codes and discrepancies from both the MCE and LRE phases of flight.

4.8.20.2.9. **(Added-ANG)** LRE debriefer removes AFTO Form 781A from CAOC Predator website after aircraft debrief.

4.8.20.3. **(Added-ANG)** Comm-out procedures:

4.8.20.3.1. **(Added-ANG)** LRE debriefer notifies MCE debriefer during times of SIPRNET or IMDS outages via STE/STU phone or VOIP phone.

4.8.20.3.2. **(Added-ANG)** MCE debriefer prints out AFTO Form 781A from IMDS, places them on a clipboard, and give them to the MCE PIC at crew step.

4.8.20.3.3. **(Added-ANG)** LRE PIC reviews aircraft AFTO 781 forms binder and relays pertinent configuration information, i.e. missile/equipment load, fuel load, aircraft configuration, etc. to MCE PIC.

4.8.20.3.4. **(Added-ANG)** After launch, aircraft control is passed to MCE PIC for duration of mission. LRE PIC performs LRE GCS debrief with LRE debriefer at this time.

4.8.20.3.5. **(Added-ANG)** During mission phase, MCE aircrew will handcarry aircraft 781A forms clipboard to perform face-to-face debrief with MCE debriefer after every aircrew change, Ku-to-Ku handover, and handback regardless of landing status codes.

4.8.20.3.6. **(Added-ANG)** MCE debriefer will communicate discrepancy by the most expedient and secure means (i.e. VOIP, mIRC, or STE/STU) to the LRE debriefer. MCE aircrew that reported the discrepancy will be available at this time to answer additional questions from system technicians at the LRE. MCE debriefer will maintain transmitted 781A discrepancies for a minimum of 30 days.

4.8.20.3.7. **(Added-ANG)** After aircraft handback to LRE, MCE debriefer will contact LRE debriefer and inform LRE of landing status code and any discrepancies – even if there are none - discovered during the MCE phase of the mission. MCE debriefer performs MCE GCS debrief at this time.

4.8.20.3.8. **(Added-ANG)** After aircraft landing, LRE PIC performs aircraft debrief with LRE debriefer for the launch/recovery phases of the mission.

4.8.20.3.9. **(Added-ANG)** LRE debriefer enters discrepancies reported by MCE PIC/debriefer in aircraft AFTO Form 781A. LRE debriefer performs IMDS debrief of aircraft and LRE GCS using landing status codes and discrepancies from both the MCE and LRE phases of flight.

4.8.20.4. **(Added-ANG)** Formal Training Unit (FTU) Debrief Procedures: Current FTU sorties do not fall under the remote split operations concept except when performing handover/handback syllabus training. However to standardize UAV debrief procedures worldwide, FTU units will mirror to the maximum extent possible the RSO debrief procedures.

4.9. Aircraft Section. The aircraft section consists of DCCs, ADCCs, FCCs, and aircraft technicians. This section is the primary work center responsible for maintaining assigned aircraft. This section performs tasks to include servicing, scheduled and unscheduled maintenance, pre-flights, thru-flights, basic post-flights, home station checks, special inspections, corrosion control, cleaning, ground handling, launch and recovery of aircraft, troubleshooting and adjustment, on-equipment repairs and component removal and replacement, documents maintenance actions, and manages aircraft forms. AMUs with 18 or more PAI aircraft will have two aircraft sections.

4.9. (ANG) Aircraft Section. N/A to the ANG. The following only applies to the ANG: The aircraft section consists of crew chiefs, FCCs, and aircraft technicians. This section is the primary work center responsible for maintaining assigned aircraft. This section performs tasks to include servicing, scheduled and unscheduled maintenance, pre-flights, thru-flights, basic post-flights, home station checks, special inspections, corrosion control, cleaning, ground handling, launch and recovery of aircraft, troubleshoot-

ing and adjustment, on-equipment repairs and component removal and replacement, documents maintenance actions, and manages aircraft forms. Based on the number of aircraft and personnel assigned, MXG/CC's have the option to split into more than one aircraft section.

4.9.1. Dedicated Crew Chief (DCC) Program. The objective of the DCC program is to directly assign a maintenance person to each aircraft to provide continuity/accuracy of aircraft forms, aircraft status, scheduled maintenance, and improve aircraft cosmetics. Personnel must have a minimum of 6 months experience on the MDS, be a staff sergeant or higher, and possess a 2A3X3A/B/J or 2A5X1/2 AFSC before selection as a DCC. The MXG/CC retains the authority to waive other aircraft maintenance AFSCs and time/rank requirements to be a DCC. The MXG/CC shall brief the WG/CC monthly on the DCC experience levels/grades and on any need to waive requirements. DCCs manage and supervise all maintenance on their aircraft. DCCs are selected on the basis of initiative, management and leadership ability, and technical knowledge. Each assigned aircraft must have an assigned DCC (optional for contractor and civil service maintenance functions as determined by the MAJCOM). DCCs will be selected and appointed in a ceremony hosted by the squadron commander and presented certificates.

4.9.1. **(ANG)** N/A to the ANG with the exception of the 116 ACW and 153 AW active duty personnel.

4.9.2. DCC Responsibilities. DCCs are first-level supervisors in the management and maintenance of their assigned aircraft. DCCs and ADCCs are qualified according to the applicable MDS Job Qualification Standards (JQS). If possible, the DCC should be the reporting official for the ADCC(s) assigned to their aircraft. ARC organizations shall reference MAJCOM policy for determination and assignment of crew chiefs. The DCC/ADCC will:

4.9.2. **(ANG)** N/A to ANG. The following only applies to the ANG. The ANG crew chief will:

4.9.2.1. Enforce strict adherence to and comply with technical data and management procedures. Advocates the importance of using current technical data IAW AFI 21-303, and use of the TO improvement program IAW TO 00-5-1.

4.9.2.2. Ensure aerospace equipment documentation and MIS documentation are completed, accurate and accomplished IAW 00-20 series TOs. Ensure aircraft status is accurately reflected in both the maintenance forms and the MIS.

4.9.2.3. Inform the section NCOIC and the flightline expediter of aircraft status.

4.9.2.4. Identify maintenance and support requirements to the expediter or section NCOIC.

4.9.2.5. Be knowledgeable of the aircraft's long-term problems, and takes steps to fix those problems.

4.9.2.6. Ensure timely corrective action is taken on all delayed and deferred discrepancies.

4.9.2.7. Perform helicopter vibration analysis in flight.

4.9.2.8. Coordinate with production superintendents, expediters, for downtime to accomplish scheduled and unscheduled maintenance.

4.9.2.9. Manage and supervise maintenance on their aircraft and accompany their aircraft during all aspects of maintenance.

4.9.2.10. Perform ground handling, servicing, basic post-flight, pre-flight, thru-flight, home station checks, phase and ISO inspections, acceptance and transfer inspections, special inspections, launch and recovery, quick turns, alert duties, maintenance ground test, corrosion control, wash, lubrication, and maintenance and modification preparations as applicable on their aircraft.

4.9.2.11. Perform engine operation when qualified and certified.

4.9.2.12. Ensure replacement parts are requisitioned and documentation is completed.

4.9.2.13. Attend pre- and post-dock meetings, accompanies the aircraft through scheduled inspection {optional for Programmed Depot Maintenance (PDM)} and assists the inspection dock NCOIC as needed.

4.9.2.13.1. Monitor the maintenance performed on their aircraft. Ensure AFTO 781-Series IMTs/forms and applicable MIS are documented during scheduled inspections.

4.9.2.13.2. Assist the dock NCOIC with completing the required document review and validation at the end of the inspection.

4.9.2.13.3. Perform scheduled document reviews and records checks using applicable MIS and automated aircraft forms IAW **Chapter 7** of this instruction.

4.9.2.13.4. Manage deferred discrepancies.

4.9.2.14. Inventory on-aircraft Dash-21 equipment when this responsibility is not assigned to another function.

4.9.2.15. Ensure Due-In from Maintenance (DIFM) assets within their control are turned into LRS.

4.9.2.16. Ensure aircraft TO G files kept on the aircraft are current and complete for use.

4.9.2.17. When authorized, ensure the DCC's and ADCC's name and rank is stenciled or painted on their aircraft. Follow the established wing paint scheme, unit standards, MAJCOM directives, and marking procedures in TO 1-1-8, *Exterior Finishes, Insignia and Marking Applicable to USAF Aircraft*.

4.9.2.17. **(ANG)** N/A to the ANG. The following only applies to the ANG: Ensure, when authorized, that crew chief and assistant crew chief's name and rank is stenciled or painted on their aircraft. Follow the established wing paint scheme, unit standards, and marking procedures in TO 35-1-3, TO 1-1-8, and ANGI 21-105.

4.9.2.18. Conduct OJT training/certifying as required.

4.9.2.19. **(Added-ANG)** Take oil samples, inspect magnetic chip detector/SEM-EDX and complete appropriate documentation, as required.

4.9.2.20. **(Added-ANG)** Perform aircraft document review.

4.9.3. Flying Crew Chiefs (FCC). Refer to **Chapter 14** of this instruction for FCC responsibilities.

4.10. Specialist Section. This section is responsible for aircraft systems troubleshooting, on-equipment repairs, component removal and replacement, aircraft avionics systems classified item management, and aircraft ground handling, servicing, and cleaning. The section may include avionics, propulsion, hydraulics, and electro/environmental technicians. Other functions may be added at the discretion of AMU lead-

ership. When used, the specialist section expediter coordinates maintenance priorities with the production superintendent and flightline expediters.

4.10. (ANG) Not all ANG AMFs have specialists assigned.

4.10.1. In addition to the common responsibilities in **Chapter 3** of this instruction, the specialist section NCOIC:

4.10.1.1. Actively promotes cross-talk with applicable maintenance units to obtain information on system/component repeat, recur and CND trends.

4.10.1.2. Provides support for Phase/Isochronal/Periodic/Home Station Check (HSC (C-17)) Inspections

4.10.1.3. Attends Phase/Isochronal/Periodic/Home Station Check (HSC (C-17)) Pre-Dock meetings if required to provide specialist support.

4.10.1.4. Support and maintain 2-level maintenance Advanced Targeting Pod (ATP) systems (e.g., LITENING and Sniper) as applicable.

4.10.1.5. Ensure accurate and timely pod and support equipment status is updated or verified daily in RAMPOD IAW AFI 21-103 Chapter 10

4.10.2. Avionics Specialists will:

4.10.2.1. Perform reprogramming of avionics systems as required by applicable mission directives, PACER WARE/SERENE BYTE messages, or TCTO requirements.

4.10.2.2. Maintain guidance and control systems.

4.10.2.3. Maintain communication and navigation systems including interphone cord repair.

4.10.3. Electronic Warfare (EW) specialist functions may be combined with the avionics specialists. EW Specialists will:

4.10.3.1. Maintain inventory control of all installed Electronic Counter Measure (ECM) AME and ECM pods.

4.10.3.2. Perform reprogramming of avionics/electronic warfare systems (to include electronic attack pods) as required by applicable mission directives, PACER WARE/SERENE BYTE messages, or TCTO requirements.

4.10.3.3. Load contingency and training configuration settings in ECM pods, infrared countermeasures systems, and RWR/RTHW systems, unless the equipment is assigned to another section.

4.10.3.4. Transport and load ECM pods.

4.10.3.5. Verify operation of the installed RWR/RTHW systems.

4.10.3.6. Coordinate with wing Electronic Warfare Officer (EWO), AMU and MXS/EMS/CMS production superintendents for EW integrated reprogramming.

4.10.4. If applicable, perform the following B-52 EW System (EWS) maintenance responsibilities:

4.10.4.1. Emergency and routine reprogramming of the following: ALQ-155/Sensor Integration, ALQ-172, ALQ 153 and ALR-46 systems as directed by EWO.

4.10.4.2. Load/maintain chaff magazines.

4.10.4.3. Coordinate Line Replaceable Unit (LRU) cannibalization actions in support of annual USM-464 End-to-End testing with the B-52 EWS section in the Avionics Flight.

4.10.4.4. Coordinate CND screening with the B-52 EWS section in the avionics flight.

4.10.5. If applicable, the B-52 Comm/Nav Mission Systems section (CNMS) will:

4.10.5.1. Maintain Offensive Avionics System (OAS), AN/ASQ-176, Strategic Radar (SR), AN/APQ-166. Inertial Navigation Set (INS), AN/ASQ-136. Electro-optical Viewing System (EVS), AN/ASQ-151. AVTR System.

4.10.5.2. Maintain communication and navigation systems including interphone cord repair.

4.10.6. Propulsion section specialists will:

4.10.6.1. Troubleshoot, repair, and replace aircraft propulsion systems and components.

4.10.6.2. Perform aircraft engine downloads if required by TOs.

4.10.6.3. Perform flightline engine borescope inspections.

4.10.6.4. Provide pertinent worksheets, historical records, and troubleshooting information regarding engine removals to the Propulsion Flight.

4.10.6.5. Be the squadron focal point for engine maintenance training.

4.10.6.6. Be actively involved in the wing FOD and engine trending programs.

4.10.6.6.1. When FOD is identified, other than minor sand nicks or scratches, notify the Wing FOD Monitor prior to blade blending. Ensure evaluated or repaired FOD is documented in the AFTO IMT 95, **Significant Historical Data**, IAW TO 00-20-1, and **Chapter 14** of this instruction.

4.10.6.6.1. **(ANG)** Or notify QA in the absence of the Wing FOD Monitor.

4.10.6.6.2. Notify the engine management section with the following information for input into the engine historical records; engine serial number, stage number, number of blades blended, depth of damage before and after blend, area of damage, and employee number of maintenance personnel.

4.10.7. Electro/Environmental (E&E) specialists will:

4.10.7.1. Troubleshoot, repair and replace aircraft E&E system components.

4.10.7.2. Maintain aircraft environmental control, bleed air, vacuum, pneumatic, installed fire extinguishing and suppressant systems, liquid oxygen (LOX) and gaseous oxygen (GOX) systems, and on-board oxygen generating systems (OBOGS) and components. The E&E section services, repairs, modifies and tests components of these systems, as required. Using organizations are responsible to inspect gaseous and cryogenic servicing carts prior to use. Users are responsible to ensure the quantity of the LOX or liquid nitrogen (LN2) in the aircraft servicing cart does not fall below minimum levels prior to or during servicing.

4.10.8. Hydraulics specialists will maintain on-equipment pneumatic, and hydraulic systems and components.

4.11. Weapons Section. This section normally consists of two elements; loading and maintenance. Weapons expediters are assigned to manage flightline operations. The maintenance section is not normally formed in squadrons supporting B-1, B-2, or B-52 aircraft. In squadron-sized fighter units, maintenance authorizations and responsibilities may be combined with those of the armament systems flight. MAJCOMs will determine applicable portions of the weapons responsibilities for contract and civil service organizations. Weapons loading tasks will adhere to the minimum requirements of the weapons certification and weapons task qualification programs.

NOTE: (ANG only) Weapons Element. This section normally consists of two sections: weapons loading and armament systems. Weapons expediters may be assigned to manage flightline operations. A weapons loading section NCOIC may be assigned to assist in managing flightline operations. Individual gun services and weapons release section NCOICs may be assigned to support management of armament systems sections. An armament systems section NCOIC may be assigned to assist in managing gun services, and weapons release sections. Weapons loading tasks must adhere to the minimum requirements of the weapons certification and weapons task qualification programs. In addition to the common section NCOIC responsibilities in **Chapter 3** of this instruction, the weapons element supervisor will perform the responsibilities of the weapons section NCOIC.

4.11.1. Weapons section NCOIC. In addition to the common section NCOIC responsibilities in **Chapter 3** of this instruction**,** the weapons section NCOIC:

4.11.1.1. Assists the WWM in recommending distribution of wing 2W1X1 personnel to satisfy weapons loading and on-equipment armament system maintenance requirements.

4.11.1.2. Advises the Operations Officer and notifies the WWM regarding factors which affect training, weapons loading or maintenance capabilities, load crew or Personnel Reliability Program (PRP) status, equipment and tester shortfalls and other key weapons related issues.

4.11.1.3. Recommends the most qualified personnel in the weapons section to be lead crew members.

4.11.1.4. Ensures the minimum required load crews indicated on the UCML/TTML are trained and certified to perform the mission (within the ARC, UCML minimums are determined by the MAJCOM). Maintains load crew integrity during training and evaluations to the maximum extent possible. Ensures all load crews are trained to perform aircraft functional checks.

4.11.1.4.1. In nuclear tasked units, load crew members and loading supervisors (including weapons expediters) are trained to perform weapons systems fault isolation and troubleshooting within the guidelines of the weapons system safety rules and applicable loading/troubleshooting technical procedures.

4.11.1.5. Ensures safe and reliable loading and maintenance procedures are used. Do not use more than one load crew to accomplish weapon loading and unloading tasks (DLO) on fighter/attack aircraft, unless authorized by the MAJCOM.

4.11.1.6. Maintains a visual aid or automated product depicting the current status of assigned load crews and members. Manually updates printed products from automated systems between issues. Printed products are not required if computer systems are networked or modem-interfaced with the weapons standardization (WS) load crew management system for on-line updates.

4.11.1.7. In coordination with the WS superintendent, ensures load training aircraft requirements and load crew proficiency evaluation schedules are developed. Includes these schedules in the

weekly and monthly maintenance plans. Ensures training aircraft are properly configured to support load-training requirements prior to scheduled training sessions.

4.11.1.8. Designates weapons expediters in writing. Weapons expediters report to the weapons section NCOIC. (ARC: Since expediters are not mandatory, units designate individuals to perform these duties.)

4.11.1.9. Ensures a checklist for each Primary Munition (PM) and Support Munition (SM) is on hand for each assigned load crew CTK, ***Exception:*** Not applicable to F-22A units. In coordination with the WWM, determines required quantities in test organizations.

4.11.1.10. Reviews all AFTO IMT 22 or Technical Order Data Change Requests (TODCR) (for -16, -33 TOs, and F-22A TOD) and routes to WS for review.

4.11.1.11. Ensures supervisory post-loads and maintenance inspections are performed and documented. Supervisors (expediters, shift supervisors, section NCOICs, etc.) performing supervisory post-load inspections require initial and annual qualification training by WS.

4.11.1.12. Ensures approval of locally manufactured equipment (LME) if not included in tech data or listed on the Munitions Materiel Handling Equipment (MMHE) Focal Point web site (**https://peonet.eglin.af.mil/mmhe/**) managed by the MMHE Focal Point, 615 Apalachicola Road Suite 101, Eglin AFB, FL 32542-6845.

4.11.1.12.1. Munitions/armament LME is specialized equipment designed to interface with or support munitions or armament suspension equipment such as tools, handling dollies, storage racks, maintenance stands, transport adapters, etc. All munitions/armament LME contained on the MMHE Focal Point web site meets applicable AFOSH, explosive safety, and USAF standards and is approved for local manufacture and use at unit level AF-wide. Drawing packages for these items are available to the unit via the MMHE Focal Point web site. Units must use MMHE Focal Point-designed munitions/armament LME for new procurements if a design exists and fills the requirement.

4.11.1.12.2. Munitions/armament LME, specifically designed to interface with or support munitions, which are not contained in technical data or on the MMHE Focal Point web site (i.e., hardened/protective aircraft shelter missile racks, “y”-stands, munitions chocks, specialized tools, etc.) must be coordinated at unit level and forwarded to the MAJCOM Functional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has AF utility, the drawings must be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site. Munitions/armament LME, not designed to interface with or support munitions, which are not contained in technical data or on the MMHE Focal Point web site, must be approved at the unit level. Units are encouraged to forward any such approved LME for possible inclusion on the MMHE Focal Point web site by sending an approved drawing package to the MAJCOM Functional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has additional AF utility, the drawing package shall be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site.

4.11.1.12.3. All LME must meet applicable AFOSH, explosive safety, and USAF standards. All equipment designated for use with nuclear weapons test and handling must meet requirements in AFI 91-103.

4.11.1.12.4. All LME must be maintained and inspected for serviceability on a regular basis IAW appropriate 00-20 series technical data. AFTO IMT 244s, or equivalent, shall be maintained for all LME items (racks, stands, adapters, etc.). Equipment without technical data must, as a minimum, be inspected every 180 days for corrosion, physical defect, and lubrication as required.

4.11.1.13. Ensures coded dies for nuclear applications are controlled according to AFI 91-104, *Nuclear Surety Tamper Control and Detection Programs*.

4.11.1.14. Ensures aircraft -6 armament system, AME, NIE inspections, TCTOs and aircraft functional checks (except phase/HPO) are accomplished as required to prevent overdues or over flight of equipment.

4.11.1.15. Tracks all assigned in-use AME and normally installed equipment (NIE) by aircraft tail number and position when installed (must be tracked in a MIS). If in ready use storage (not installed), AME and NIE must be tracked in the MIS or a WWM approved manual or automated product.

4.11.1.16. Ensures positive control/accountability/serviceability for suspension equipment accessories (cables, fittings, adapters, etc.).

4.11.1.17. Tracks F-16 acceleration monitor assemblies by serial number, showing aircraft tail number and installed position.

4.11.1.18. Ensures load crew certification records and automated products are sent with load crews to TDY location if loading tasks are to be performed. Obtain a signed copy of the Weapons Load Crew Management Program (WLCMP) or equivalent printout from WS.

4.11.1.19. Ensures personnel receive a documented supervisory review of and complete required prerequisite training before entering initial load crew training or performing flightline operations (e.g., cockpit familiarization, fire fighting, AGE.).

4.11.1.20. Ensures on-equipment serial number inventory, AFTO IMT 95 review and functional checks are performed on all AME and NIE installed as a result of transfer or acceptance inspection. Also perform inventory of applicable -21 authorizations.

4.11.1.21. Inspects 25 percent of weapons section CTKs, armament test and support equipment for serviceability, at least quarterly, and initiates corrective action as required. Schedules and tracks inspections to ensure 100 percent of CTKs, test, and support equipment will be checked over a one-year timeframe. Documents inspection results and uses for follow-up action and reference as necessary. Ensures inspection is documented on appropriate equipment form such as AFTO IMT 244 or AF IMT 2411.

4.11.1.21. **(ANG)** N/A to the ANG. The following only applies to the ANG: Inspects weapons element CTKs, armament test and support equipment for serviceability. Schedules and tracks inspections to ensure 100 percent of CTKs, test, and support equipment must be checked over a one-year timeframe. Documents inspection results and uses for follow-up action and reference as necessary. Ensures inspection is documented on appropriate equipment form such as AFTO IMT 244 or AF IMT 2411.

4.11.1.22. Ensures appropriate follow-up actions are accomplished for all armament system malfunctions. Monitors actions taken by supporting agencies on dispensers, suspension equipment,

training munitions, etc., which were involved with specific system malfunctions. Updates WWM by the first of each month for the previous month on weapons release reliability and gun fire-out rates along with corrective actions if required.

4.11.1.23. Monitors upgrade training, PRP status and qualifications of assigned work center personnel. Ensures MAJCOM Mandatory Course List (MMCL) requirements are met (if applicable).

4.11.1.23. **(ANG)** N/A to the ANG. The following only applies to the ANG: Monitors upgrade training, PRP status, and qualifications of assigned workcenter personnel.

4.11.1.24. Ensures sufficient computer systems are assigned to support network/modem interface with the WWM, WS, other weapons sections, armament systems flight, automated training systems and other agencies.

4.11.1.25. Establishes a SPRAM account to track F-15E encoder/decoders and power supplies and F-16 ruggedized nuclear remote interface units (as applicable, if not tracked by Armament Systems Flight).

4.11.1.26. Provides WWM monthly status on authorized/on-hand quantities and serviceability of AME/NIE/WRM, armament testers, support equipment, and personnel assigned (to include physical profiles/security status, and mal-assigned if applicable) by the first of each month.

4.11.1.27. See **Chapter 14** of this instruction for SCR, MRT, Protective Aircraft Shelter, End of Runway, self inspection program and CSO guidance.

4.11.1.28. Ensures (with WWM concurrence) that WS personnel are included on TDY's or deployment of more than 30 days to provide MPRL and recertification capability to deployed load crews. On TDY's where live munitions are to be fired/expended, regardless of length, the WWM will determine whether or not WS participation is required.

4.11.1.29. See **Chapter 14** of this instruction for KEEP program information.

4.11.1.30. See **Chapter 10** of this instruction for lost tool guidance.

4.11.1.31. Designates individuals authorized to perform and document production and supervisory inspections on the SCR.

4.11.1.32. See **Chapter 2** of this instruction for Safety guidance.

4.11.1.33. See **Chapter 9** of this instruction for Aircraft and Equipment Impoundment guidance.

4.11.1.34. Ensures appropriate amount of Dash-21 armament equipment is on-hand and accounted for IAW AFI 21-103.

4.11.1.35. Ensures individual tool kits are set up for each load crew (as specified on the UCML/TTML; numbers include lead crews). In coordination with the WWM, determines the number of weapons load crew CTKs required for load crews in bomber units, and those that support only test, evaluation or training operations. Coordinates with WWM on assigned weapons load crew CTKs for approval/signature of the Master MIL (**Chapter 10** of this instruction).

4.11.1.36. Ensures requirements for submitting AFTO IMT 375 on all weapons support equipment identified in TO 35-1-24 are accomplished. This process provides vital information and source documentation for ALCs to adequately reflect equipment sustainment costs, attrition rates, and to enable timely forecasting for replacement funding.

4.11.1.36. **(ANG)** N/A to UAE owned F-16 block 60 equipment and RNAF owned F-16 aircraft.

4.11.1.37. **Chapter 1** of this instruction for AF munitions policy, UCML/TTML requirements and duty shifts.

4.11.1.38. **Chapter 7** of this instruction for documenting maintenance.

4.11.1.39. Maintain current copy of task assignment listing (TAL) for assigned aircraft. Ensure individuals review TAL and applicable –16/-33 series T.O.s prior to reporting for initial and recurring weapons load training.

4.11.2. Weapons Loading Element. Personnel assigned to loading:

4.11.2. **(ANG)** N/A to the ANG. The following only applies to the ANG: Weapons Loading: The weapons loading supervisor is responsible to the weapons element supervisor for all loading operations, and must be knowledgeable of the assigned MDS maintenance and loading tasks. The loading supervisor coordinates maintenance priorities with the Flightline Expeditor and Pro Super. In addition to common element/workcenter supervisor responsibilities outlined in **Chapter 3** of this instruction, the weapons loading supervisor:

4.11.2.1. Load and unload munitions and weapons in support of daily flying training and contingency operations. Certification and qualification requirements for these operations are specified in WS section of this instruction.

4.11.2.2. Install and remove armament related suspension equipment, launchers, adapters, etc., on assigned aircraft to support configuration requirements for daily and contingency operations.

4.11.2.3. Perform functional and stray voltage checks required for loading operations.

4.11.2.4. Provide assistance to the weapons maintenance element when required.

4.11.3. Load Crew Chief. The load crew chief is responsible to the weapons section NCOIC for armament systems maintenance and loading of assigned aircraft. Load crew chiefs are normally NCOs with AFSC 2W151. Senior airmen may perform load crew chief duties when unit-manning status dictates. The weapons load crew chief:

4.11.3.1. Is responsible for and controls all actions concerning the aircraft during loading and unloading. No one is authorized access to the aircraft without load crew chief approval. The load crew chief may authorize other individuals to work on the aircraft provided they are briefed on emergency procedures, perform no maintenance or inspections which would jeopardize safety, hamper loading operations, or violate tech data. Access to the cockpit and/or applying power to the aircraft by other than the load crew during loading operations is prohibited unless coordinated through and approved by the weapon load crew team chief. ***EXCEPTION*:** During simultaneous loading/unloading and refueling during CSOs, the CSS is in charge. (See **Chapter 14** of this instruction for CSO guidance).

4.11.3.2. Supervises the loading and unloading of only one aircraft at a time.

4.11.3.3. Controls and ensures the number of personnel in the area during explosives handling operations are kept to a minimum.

4.11.3.4. Ensures compliance with AFI 91-101 when responding to unscheduled maintenance actions on nuclear loaded aircraft.

4.11.3.5. Monitors and ensures proper documentation of qualifications, proficiency, on-the-job and upgrade training of their crew members. Takes the necessary action to assist or provide any training opportunities.

4.11.3.5.1. In nuclear tasked units, train crew members to perform weapons systems fault isolation and troubleshooting within the guidelines of the weapons system safety rules and applicable loading/troubleshooting technical procedures.

4.11.3.6. Enforces compliance with and ensures all loading and maintenance operations are performed in accordance with established tech data and checklists.

4.11.3.7. See **Chapter 14** of this instruction for KEEP program information.

4.11.3.8. **(Added-ANG)** Permanent full-time (Technician/AGR) certified Weapons Load Crew Chiefs may load in any position. During UTAs, overseas deployments, exercises or inspections all three load crew members must be certified in their respective positions.

4.11.4. Weapons Maintenance Element. Personnel assigned to weapons maintenance (when this function is not formed, these tasks are performed by loading personnel):

4.11.4. **(ANG)** N/A to the ANG. The following only applies to the ANG: Weapons Maintenance functions are performed by the Armament Systems Section. The armament section performs on/off-equipment maintenance for assigned aircraft armament systems, guns, pylons, racks, launchers, and adapters. The section stores, maintains, and accounts for all AME, tools, stocks, and equipment assigned to the element. Gun services and weapons release supervisors may be assigned to support management of the armament shop. An armament shop supervisor may be assigned to assist in managing the gun and weapons release shops. In addition to common element/workcenter supervisor's responsibilities outlined in **Chapter 3** of this instruction, the gun, weapons release, and/or armament supervisors:

4.11.4.1. Install and remove all armament AME and NIE to facilitate other maintenance (FOM) or for repair action, to include acceptance and transfer inspections.

4.11.4.2. Perform aircraft troubleshooting and repair actions.

4.11.4.3. Perform aircraft armament systems functional checks and on-equipment Dash-6 inspection requirements on in-use AME and NIE.

4.11.4.4. Boresight aircraft guns.

4.11.4.5. Perform on-equipment TCTOs and weapons TCIs.

4.11.4.6. Maintain qualification on designated weapons related qualification tasks for the unit

4.11.4.7. Maintenance personnel may be certified as load crew members at the discretion of the weapons section NCOIC.

4.11.4.8. **(Added-ANG)** In addition to on-equipment maintenance functions above, complies with portions of paragraph **5.8.** not duplicated in weapons element supervisor responsibilities outlined in paragraph **4.11.**

4.11.5. Weapons expediter. The weapons expediter is responsible to the weapons section NCOIC for all armament systems maintenance and loading operations, and must be knowledgeable of the assigned MDS maintenance and loading tasks. The expediter coordinates maintenance priorities with the production superintendent.

4.11.5. **(ANG)** If a weapons expediter is not assigned the following duties must be performed by a weapons loading supervisor. A weapons loading supervisor may be assigned to assist in managing flightline operations.

4.11.5.1. Supervises/ actively monitors on-equipment armament systems maintenance.

4.11.5.2. Supervises/ actively monitors loading/unloading operations.

4.11.5.3. Tracks configuration of aircraft, suspension equipment, and weapons. Ensures 100 percent documented accountability of in-use AME/NIE, by location and status, whether installed or stored. (ARC expediters need not track accountability of stored AME if being tracked by the weapons section or armament flight chief.)

4.11.5.4. Informs the production superintendent of all start and stop times, status changes, delays and extensions.

4.11.5.5. Tracks munitions expenditures as follows:

4.11.5.5.1. Fill out an AF IMT 2434, **Munitions Configuration and Expenditure Document**, or locally produced form, on all aircraft configured and loaded to release or fire munitions. Record by serial number and location or position all armament related AME, NIE, or support equipment from which munitions items are expended. ***NOTE:*** Record NIE serial numbers only when munitions are loaded directly on the NIE versus the AME.

4.11.5.5.2. After an aircraft lands, reconciliation is performed by the weapons expediter. Expenditure information will be provided to munitions personnel as frequently as possible during the flying day. Every effort will be made to provide this information between aircraft goes. This requires continuous munitions and weapons expediter interface throughout the flying day.

4.11.5.5.3. A reconciliation of all expenditures is accomplished at the end of the flying day. After the reconciliation, copies of expenditure documents are distributed to PS&D, the munitions flight and, when required, the armament systems flight. The documentation action block is annotated when entries are made on item historical documents by the Armament Flight.

4.11.5.5.3. **(ANG)** Expenditure documents are not distributed to PS&D.

4.11.5.6. Coordinates with the MOC or munitions control for the delivery and pick-up of munitions items.

4.11.5.7. Coordinates accomplishment of all planned and unscheduled maintenance and inspections with the production superintendent.

4.11.5.7.1. Will ensure utilization of 5-skill and 7-skill level personnel for CUT tasks will be the standard practice, until no other means are available within the unit. Utilization of 3-skill level personnel for CUT tasks will only be used when assigned manning dictates, or if the individual has completed all mandatory CDCs, and core tasks and duty position tasks identified in the CFETP.

4.11.5.8. Monitors the safety of flightline weapons operations.

4.11.5.9. Supervises and assists load and maintenance crews during weapons release system fault isolation and troubleshooting.

4.11.5.10. Performs and documents supervisory post loads of explosives loaded aircraft and maintenance inspections.

4.11.5.10. **(ANG)** N/A to the ANG. The following only applies to the ANG: The post load does not take the place of the weapons load crew chiefs "post loading" portion of the applicable 1X-XXX-33-1-2CL-X checklist. Performs supervisory spot checks of post loads of explosives loaded aircraft and maintenance inspections using the following guidelines:

4.11.5.10.1. **(Added-ANG)** Post load inspections need include only a sampling of loaded aircraft and must be at least one aircraft per flying day. Wing Weapons Managers may require more frequent inspections based on unit needs.

4.11.5.10.2. **(Added-ANG)** Document post load in either AFTO Form/IMT 781A or in any locally determined electronic system.

4.11.5.11. Initiates (with approval) cannibalization action to remove/install AME/NIE from one aircraft to another. Ensure inspection requirements are carried forward/documented for all items that have specific periodic inspections (e.g., Electronic Control units, Gun System Control Panel). To prevent overfly, do not install the cannibalized item on an aircraft with more flight time than is remaining on the AME/NIE Dash-6 requirements (when possible). Inform PS&D when actions affect the aircraft inspection schedule.

4.11.5.12. Maintains a separate AF IMT 2430 **Specialist Dispatch Control Log**, or locally produced standardized form with WWM approval, for each shift. Ensures all required documentation is complete and accurate. As a minimum, the following fields of the AF IMT 2430 will be completed: "AS OF" (date), "JOB CONTROL" (filled out for maintenance actions that have JCNs; (e.g., 18-month inspections, PRDs), but not required for weapons loading tasks), "ACFT/TRAINER" (MDS), "SERIAL" (tail number/serial number of component), "TIME" ("Required" = start time, "Dispatched" = time completed, "Completed" = status code, (e.g., C/W, C/F, CANX)), "SPECIALIST(S) DISPATCHED" (load/maintenance crew number/name), "DISCREPANCY & REMARKS" (discrepancy/task performed). Transcribe any actions not complied with or cancelled to the next shift's AF IMT 2430.

4.11.5.12.1. Units may maintain one single AF IMT 2430 for weekly scheduled maintenance, in addition to the daily shift AF IMT 2430. Transcribe any actions not complied with or cancelled to the next week's scheduled maintenance AF IMT 2430.

4.12. Weapons Section (MH-53J/M and HH-60 Units). The MH-53J/M and HH-60 weapons section is a composite of both the flightline weapons section and armament flight. Weapons section NCOICs will comply with this chapter and the applicable positions of the section NCOIC responsibilities of **Chapter 3** of this instruction. Personnel will be formed into maintenance teams and will be qualified to perform on/off equipment maintenance. They will not load ammunition on the helicopter; the flight engineer or aerial gunner performs this task.

4.12. (ANG) N/A to the ANG. The following only applies to the ANG: Personnel are formed into maintenance teams and are qualified to perform on-off equipment maintenance and do not normally load ammunition on the aircraft. This is normally done by the flight engineer or aerial gunner.**.**

4.12.1. **Weapons Section NCOIC.** In addition to the common section NCOIC responsibilities in **Chapter 3** of this instruction, the weapons section NCOIC:

4.12.1.1. Advises the Operations Officer/MX SUPT and notifies the WWM (if one is assigned to the wing), regarding factors which affect training, armament systems, weapons loading or maintenance capabilities, maintenance teams, equipment and tester shortfalls and other key weapons related issues. Assists the WWM in recommending distribution of wing 2W1X1 personnel to satisfy weapons maintenance requirements (if applicable).

4.12.1.2. Designates weapons expediters in writing. Weapons expediters report to the weapons section NCOIC. (ARC: Since expediters are not mandatory, units designate individuals to perform these duties.)

4.12.1.3. Reviews all applicable AFTO IMT 22 or Technical Order Data Change Requests (TODCR).

4.12.1.4. Ensures supervisory post-loads and maintenance inspections are performed and documented. Supervisors (expediters, shift supervisors, section NCOICs, etc.) performing supervisory post-load inspections require initial and annual qualification training by WS.

4.12.1.5. Ensures aircraft Dash-6 armament system, AME/NIE inspections, TCTOs and aircraft functional checks are accomplished as required to prevent overdue inspections or over-flight of equipment.

4.12.1.6. Tracks all assigned in-use AME and NIE by aircraft tail number and position when installed (must be tracked in a MIS). If in ready use storage (not installed), AME and NIE must be tracked in a MIS or a WWM approved manual or automated product. AME, which have serial numbers not recognizable in the MIS (e.g., gun-mounts, ammunition canisters, chutes), will be tracked using automated products or an AF IMT 2434.

4.12.1.7. Ensures approval of LME if not included in tech data or listed on the MMHE Focal Point web site (**https://peonet.eglin.af.mil/mmhe/**) managed by the MMHE Focal Point, 615 Apalachicola Road, Suite 101, Eglin AFB, FL 32542-6845.

4.12.1.7.1. Munitions/armament LME is specialized equipment designed to interface with or support munitions or armament suspension equipment such as tools, handling dollies, storage racks, maintenance stands, transport adapters, etc. All munitions/armament LME contained on the MMHE Focal Point web site meets applicable AFOSH, explosive safety, and USAF standards, and is approved for local manufacture and use at unit level AF-wide. Drawing packages for these items are available to the unit via the MMHE Focal Point web site. Units must use MMHE Focal Point-designed munitions/armament LME for new procurements if a design exists and fills the requirement.

4.12.1.7.2. Munitions/armament LME, specifically designed to interface with or support munitions, which is not contained in technical data or on the MMHE Focal Point web site (i.e., hardened/protective aircraft shelter missile racks, “y”-stands, munitions chocks, specialized tools, etc.) must be coordinated at unit level and forwarded to the MAJCOM Functional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has AF utility, the drawings shall be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site. Munitions/armament LME, not designed to interface with or support munitions, which are not contained in technical data or on the MMHE Focal Point web site, must be approved at the unit level. Units are encouraged to forward any such approved LME for possible inclusion on MMHE Focal Point web site by sending an approved drawing package to the MAJCOM Func-

tional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has additional AF utility, the drawing package shall be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site.

4.12.1.7.3. All LME must meet applicable AFOSH, explosive safety, and USAF standards. All equipment designated for use with nuclear weapons test and handling must meet requirements in AFI 91-103.

4.12.1.7.4. All LME must be maintained and inspected for serviceability on a regular basis IAW appropriate 00-20 series technical data. AFTO IMT 244, or equivalent, must be maintained for all LME items (racks, stands, adapters, etc.). Equipment without technical data must, as a minimum, be inspected every 180 days for corrosion, physical defect, and lubrication as required.

4.12.1.8. Ensures positive control/accountability/serviceability for suspension equipment accessories (cables, fittings, adapters, etc).

4.12.1.9. Ensures personnel receive a documented supervisory review and personnel complete required prerequisite training before entering initial qualification training or performing flightline operations (e.g., cockpit familiarization, fire fighting, AGE, Explosive Safety, etc.).

4.12.1.10. Ensures on-equipment serial number inventory, AFTO IMT 95 review and functional checks are performed on all AME and NIE installed as a result of transfer or acceptance inspection. Also perform inventory of applicable -21 authorizations.

4.12.1.11. Ensures appropriate follow-up actions are accomplished for all armament system malfunctions. Monitors actions taken by supporting agencies on dispensers, suspension equipment, training munitions, etc., which were involved with specific system malfunctions.

4.12.1.12. Monitors upgrade training and qualifications of assigned work center personnel. Ensures MAJCOM Mandatory Course List (MMCL) requirements are met (if applicable).

4.12.1.13. Ensures sufficient computer systems are assigned to support network/modem interface with automated training systems and other agencies.

4.12.1.14. Designates individuals authorized to perform and document production and supervisory inspections on the SCR.

4.12.1.15. Ensures appropriate amount of Dash-21 armament equipment is on-hand and accounted for IAW AFI 21-103.

4.12.1.16. Ensures personnel maintain qualifications to install/remove aircraft guns and chaff/flare in support of daily flying training and contingency operations.

4.12.1.17. Establishes and monitors gun room security and explosive licenses if required.

4.12.1.18. Ensures AME and SPRAM accountability and control requirements are met IAW AFI 21-103. List assets as SPRAM if required.

4.12.1.19. If applicable, supports WRM gun maintenance requirements IAW AFI 25-101, *War Reserve Materiel (WRM) Program Guidance and Procedures*. Ensures all WRM guns and systems are serviceable to meet unit taskings.

4.12.1.20. Develops and implements a recognition program for assigned personnel.

4.12.1.21. Ensures compliance with hazardous material and hazardous waste management and air emissions record keeping as required for environmental compliance IAW installation ESOHMS/EMS policy/guidance and applicable environmental requirements and guidance.

4.12.1.22. Identifies to LRS all aircraft armament systems components by NSN that require acceptance inspections.

4.12.1.22.1. Acceptance inspection items that are returned to the LRS, requiring functional check or bench check prior to use, will be identified IAW TO 00-20-3, as requiring functional check or calibration every three years.

4.12.1.23. Ensures requirements for submitting AFTO IMT 375 on all weapons support equipment identified in TO 35-1-24 are accomplished. This process provides vital information and source documentation for ALCs to adequately reflect equipment sustainment costs, attrition rates, and to enable timely forecasting for replacement funding.

4.12.1.24. See **Chapter 14** of this instruction for SCR guidance.

4.12.1.25. See **Chapter 10** of this instruction for lost tool guidance.

4.12.1.26. See **Chapter 14** of this instruction for MRT guidance.

4.12.1.27. See **Chapter 14** of this instruction for Protective Aircraft Shelter (PAS) guidance.

4.12.1.28. Ensures personnel are trained to perform required security of high risk weapons at home station and deployed locations.

4.12.1.28.1. Training will include armory, anti-robbery, theft/recovery and resource protection procedures outlined in applicable AFI, OI, and DoD instructions.

4.12.1.29. Ensures personnel perform rescue/guillotine hoist arm and dearm procedures.

4.12.1.30. Ensures safe and reliable maintenance procedures are used.

4.12.1.31. In coordination with the WS superintendent (if applicable), ensures training aircraft requirements and crew proficiency evaluation schedules are developed. Includes these schedules in the weekly and monthly maintenance plans. Ensures training aircraft are properly configured to support training requirements prior to scheduled training sessions.

4.12.1.32. Inspects 25 percent of weapons section CTKs, armament test and support equipment for serviceability, at least quarterly, and initiates corrective action as required. Schedules and tracks inspections to ensure 100 percent of CTKs, test, and support equipment will be checked over a one-year timeframe. Documents inspection results and uses for follow-up action and reference as necessary. Ensures inspection is documented on appropriate equipment form such as AFTO IMT 244 or AF IMT 2411.

4.12.1.33. Provides WWM (if assigned) monthly status on authorized/on-hand quantities and serviceability of AME/NIE/WRM, armament testers, support equipment, and personnel assigned (to include physical profiles/security status, and mal-assigned if applicable) by the first of each month. ***NOTE:*** If WWM is not assigned, the weapons section NCOIC is required to forward this to the applicable MAJCOM by the 5th of each month.

4.12.2. Weapons Expediter. The weapons expediter is responsible to the weapons section NCOIC for all armament systems maintenance and loading operations, and must be knowledgeable of the

assigned MDS maintenance and loading tasks. The expediter coordinates maintenance priorities with the production supervisor.

4.12.2.1. Supervises /actively monitors on- and off-equipment armament systems maintenance.

4.12.2.2. Supervises/actively monitors loading/unloading operations.

4.12.2.3. Tracks configuration of aircraft, suspension equipment, and weapons. Ensures 100 percent documented accountability of in-use AME/NIE, by location and status, whether installed or stored.

4.12.2.4. Informs the production supervisor of all start and stop times, status changes, delays and extensions.

4.12.2.5. Tracks munitions expenditures as follows.

4.12.2.5.1. Fill out an AF IMT 2434, or locally produced form, on all aircraft configured and loaded to release or fire munitions. Record by serial number and location or position all armament related AME, NIE or support equipment from which munitions items are expended. ***NOTE:*** Record NIE serial numbers only when munitions are loaded directly on the NIE versus the AME.

4.12.2.5.2. After an aircraft lands reconciliation is performed by the weapons expediter. Expenditure information will be provided to munitions personnel as frequently as possible during the flying day. Every effort will be made to provide this information between aircraft goes. This requires continuous munitions and weapons expediter interface throughout the flying day.

4.12.2.5.3. A reconciliation of all expenditures is accomplished at the end of the flying day. After the reconciliation, copies of expenditure documents are distributed to PS&D, the munitions flight and, when required, the armament systems flight. The documentation action block is annotated when entries are made on item historical documents.

4.12.2.6. Coordinates with the MOC or munitions control for the delivery and pick-up of munitions items.

4.12.2.7. Coordinates accomplishment of all planned and unscheduled maintenance and inspections with the production supervisor.

4.12.2.8. Ensures flightline weapons operations are conducted safely.

4.12.2.9. Supervises and assists weapons maintenance personnel during weapons release system fault isolation and troubleshooting.

4.12.2.10. Performs and documents supervisory post loads of explosives loaded aircraft and maintenance inspections.

4.12.2.11. Initiates (with approval) cannibalization action to remove/install AME/NIE from one aircraft to another. Ensure inspection requirements are carried forward/documented for all items that have specific periodic inspections (e.g., Electronic Control Units, Gun System Control Panel, etc). To prevent overfly, do not install the cannibalized item on an aircraft with more flight time than is remaining on the AME/NIE Dash-6 requirements (when possible). Inform PS&D when actions affect the aircraft inspection schedule.

4.12.2.12. Maintains a separate AF IMT 2430, or locally produced standardized form with WWM approval (if assigned), for each shift. Ensures all required documentation is complete and accurate. As a minimum, the following fields of the AF IMT 2430 will be completed: "AS OF" (date), "JOB CONTROL" (filled out for maintenance actions that have JCNs; e.g., 18-month inspections, PRDs, but not required for weapons loading tasks), "ACFT/TRAINER" (MDS), "SERIAL" (tail number/serial number of component), "TIME" ("Required" = start time, "Dispatched" = time completed, "Completed" = status code, e.g., C/W, C/F, CANX), "SPECIALIST(S) DISPATCHED" (load/maintenance crew number/name), "DISCREPANCY & REMARKS" (discrepancy/task performed). Transcribe any actions not complied with or cancelled to the next shift's AF IMT 2430.

4.12.2.12.1. Units may maintain one single AF IMT 2430 for weekly scheduled maintenance, in addition to the daily shift AF IMT 2430. Transcribe any actions not complied with or cancelled to the next week's scheduled maintenance AF IMT 2430.

4.12.3. Weapons Element. Accomplishes other basic responsibilities of the MH-53J/M and HH-60 as follows:

4.12.3.1. Installs and removes armament related gun system equipment (e.g., IHAS cans, EGMS/GM/AHS, gun mounts, etc.) on assigned aircraft to support configuration requirements for daily and contingency operations.

4.12.3.2. Performs functional and stray voltage checks required for loading operations.

4.12.3.3. Installs and removes all armament AME and NIE to FOM or for repair action, to include acceptance and transfer inspections. Develops and implements a program for documenting issues and receipts of in-use AME.

4.12.3.4. Performs aircraft troubleshooting and repair actions.

4.12.3.5. Performs aircraft armament systems functional checks and Dash-6 inspection requirements on in-use AME and NIE. Performs armament systems pre-flight, through-flight and basic post-flight (BPO) inspections.

4.12.3.6. Boresights aircraft guns (if applicable).

4.12.3.7. Performs on-equipment TCTOs and weapons TCIs.

4.12.3.8. Maintains qualification on designated weapons related qualification tasks for the unit.

4.12.3.9. Maintains qualifications to install/remove chaff/flare.

4.12.3.9. **(ANG)** N/A to the ANG. The following only applies to the ANG: Perform chaff/flare loading as required.

4.12.3.10. Weapons sections do not repair, maintain, or issue aircrew/mobility small arms weapons (i.e., M9, M16, etc.).

4.12.3.10.1. Weapons sections will repair, maintain, track and issue small arms for armory security, maintenance security and courier operations for assigned/qualified weapons personnel only.

4.12.3.11. Performs off-equipment maintenance for assigned aircraft armament systems, guns, IHAS cans, EGMS GM/AHS system components, etc. and on-equipment weapons periodic phase inspections.

4.12.3.12. In coordination with PS&D, schedules and performs all inspections, TCTOs, time changes, maintenance and repair actions for aircraft armament systems suspension and release components and AME. When possible, NIE calendar- inspections are scheduled concurrently with the aircraft's nearest hourly inspection within the calendar interval. However, do not allow NIE/ AME scheduled inspections to become overdue (IAW Dash-6 TO).

4.12.3.13. Performs the weapons system on- and off-equipment portion of major inspections that pertain to the armament system.

4.12.3.14. Maintains WRM assets (if applicable).

4.12.3.15. Maintains equipment historical records (AFTO IMT 95) for AME, aircraft guns and weapons system NIE, if decentralized. If a MIS is available, it will be used for equipment historical records. Backup files will be maintained for those portions of historical records that are automated.

4.12.3.16. Performs off-equipment acceptance and transfer inspections on aircraft, to include NIE and AME. Inspections include.

4.12.3.16.1. Parts integrity inspections

4.12.3.16.2. Complete electrical and mechanical checks to include associated cables.

4.12.3.16.3. Updating/initiating historical records for each item.

4.12.3.17. In coordination with AMU PS&D, requisitions parts to satisfy time change requirements for aircraft armament or gun system components not identified in aircraft Dash-6 TOs.

4.12.3.18. Maintains the MIS data base for installed guns, gun systems, and gun component TCIs or inspection data IAW Dash-6 TO round-count limits. Use rounds information from the AF IMT 2434 or locally developed form to update the MIS.

4.12.3.19. **(Added-ANG)** Maintain weapons/munitions accounts as required.

4.12.4. Helicopter Unit WWM. ***NOTE:*** This paragraph will only be applicable when helicopter units are assigned to locations where no AFSC 2W100 WWM is assigned.

4.12.4.1. WWM. The weapons section NCOIC will perform the following duties of WWM.

4.12.4.1.1. Annually reviews DOC Statements, OPLANs, UCML/TTMLs, unit tasked UTCs (for equipment and personnel) and UMD to identify any disconnects or problems. Coordinates changes and appendices with the wing weapons and tactics function and the munitions flight. Reports any findings to MAJCOM.

4.12.4.1.2. Develops, in coordination with the explosive safety officer and airfield management, a wing OI or supplement to this AFI for parking, launch and recovery of explosive-loaded aircraft, end of runway procedures, and impoundment of aircraft with hung ordnance or jammed gun systems. The OI or supplement must include requirements to:

4.12.4.1.2.1. Arm and de-arm munitions-loaded aircraft in approved areas. Obtain approval from MXG/CC, OG/CC, Wing Safety, Airfield Management to perform immediately-prior-to-launch and "safing" procedures in aircraft parking areas for contingencies, unit exercises, and daily training missions as quantity/distance clearance allows.

4.12.4.1.2.2. Establish procedures for inspecting and "safing" hung munitions or external stores before aircraft return to parking areas. Control access to aircraft until munitions are made safe and cause of hung stores is identified. As a rule, ensure aircraft guns and rockets are "safed" in the de-arm area before aircraft return to open ramp parking areas.

4.12.4.1.3. Provide monthly manning, equipment and tester status to MAJCOM via e-mail or web site NLT the 5th of each month. Monitor the status of critical armament and weapons systems support equipment and testers for serviceability, accountability and status of TCTO modifications.

4.12.4.1.4. Inform the MAJCOM within 24 hours of any significant weapons or armament related issues such as dropped/hung munitions, equipment and aircraft release reliability or deficiency problems, and weapons safety or mishap issues.

4.12.4.1.4.1. If a unit has an incident, it is important to preserve the evidence to the maximum extent allowable by operational requirements and safety. An example would be segregating an aircraft gun versus destroying it if it poses no immediate danger. This allows for evaluation of all the evidence and the ability to recreate the mishap conditions.

4.12.4.1.4.2. If a malfunctioning munitions item (live or inert) causes a mishap, also notify OO-ALC/WM's Munitions Rapid Response Team at DSN 777-4865/5155, 775-5507/3208 and 777-AMMO or 775-AMMO, or the Hill AFB Command Post at 777-3007. This team is comprised of experts (engineers, equipment specialists, program managers and safety personnel) from the conventional weapons and munitions programs and can respond within 24 to 48 hours to assist in determining the cause of a failure. Initial contact, as soon as practical, shall allow the team to make travel arrangements and aids response time. For units with 20 or 30 MM gun systems use of the team is encouraged (not mandatory unless a safety issue exists) if the cause of a gun system jam cannot be easily determined or for recurring jams. Using the team provides highly valuable information regarding ammunition/gun system problems and allows ALC personnel to see issues first hand.

4.12.5. Helicopter Unit Weapons Standardization. The weapons section NCOIC will perform the following duties of Weapons Standardization. ***NOTE:*** Applicable only when helicopter units are assigned to locations where no core Weapons Standardization is assigned.

4.12.5.1. Academic Training. All 2W1X1's assigned to a wing regardless of duty position, and non 2W1 personnel who maintain specific weapons task qualification, are required to complete initial and recurring academic training. Complete initial academic training before the start of any practical training. Initial and recurring course outlines may be combined. Coordinate training requirements and course control documents annually through the wing weapons safety office or the safety officer and the Maintenance Training Flight (MTF).

4.12.5.1.1. Course control documents are tailored to unit and contingency needs and, as a minimum, cover the following items:

4.12.5.1.1.1. Publications, applicable weapons related local operating procedures or directives.

4.12.5.1.1.2. Safety (ground and explosive) and security.

4.12.5.1.1.3. Aircraft, munitions, AGE, SE, TMDE, and munitions trailer familiarization.

4.12.5.1.1.4. Testers, handling equipment and special tools.

4.12.5.1.1.5. Operations in revetments/protective aircraft shelters.

4.12.5.1.1.6. Weapons storage and security system vaults (tasked units).

4.12.5.1.1.7. Applicable command unique training requirements in MAJCOM 36-22XX supplements.

4.12.5.1.1.8. Hazards inherent during CSO.

4.12.5.1.2. Weapons academic training may fulfill the requirements for explosives safety training if requirements of AFMAN 91-201, are met.

4.12.5.2. Practical Training. Practical training starts when academic training is complete. The weapons section administers practical training to weapons team members on required munitions and aircraft weapons systems. They ensure practical training duplicates operational conditions to the maximum extent possible. Team members will be trained on loading and unloading procedures prior to qualification on munitions.

4.12.5.2.1. If a specific type or model of munition has been requisitioned but not received or not available, any type or model of the basic item may be used for task qualification training until receipt of the munition. Academic or task qualification instructors will teach the major differences between training and WRM munitions

4.12.5.2.2. Team members must be familiar with munitions serviceability criteria and munitions tie-down procedures.

4.12.5.2.3. Team members will be familiar with the operation of AGE and SE which may be used during loading operations, even if the items are not used on a routine basis. Training on this type of equipment is conducted during initial training and qualification.

4.12.5.3. Documenting Academic and Qualification Training.

4.12.5.3.1. Academic and qualification training conducted by the weapon section is normally documented in MIS, however, the WLCMP or equivalent may be used for this purpose.

4.12.5.4. Weapons Task Qualification. A weapons task qualification is a munitions-related task that does not require certification. Personnel receive initial and recurring (every 15 months) academic and practical training for these tasks. Recurring practical training and task qualification should be conducted during normal flightline operations to the maximum extent. Training is provided, documented and tracked by the weapons section for the following items:

4.12.5.4.1. Checklist Qualification: indicates the person operating the checklist is trained, knowledgeable and in-charge of the overall operation or task.

4.12.5.4.2. Installation/removal of impulse cartridges/squibs.

4.12.5.4.3. Pyrotechnics: load/unload.

4.12.5.4.4. Install and remove chaff/flare magazines and other defensive countermeasures as required.

4.12.5.4.5. Perform portions of the conventional loading checklist which pertain to delayed-flight or alert, and IPL/safing procedures.

4.12.5.4.6. Personnel are authorized to unload (only) ammunition in the GAU-2, GAU-18 or M240 caliber machine guns during Hot Gun emergency or gun jams that require safing prior to maintenance actions.

4.12.6. Supply/Support: Stores and maintains required tools and equipment and manages the supply and bench stock functions. ***NOTE:*** This step, and the remainder of paragraph **4.12.6.**, only apply if a helicopter unit weapon section is geographically separated from the HMXS support section. The need for a separate weapons support section will be determined locally.

4.12.6.1. Manages the supply function IAW AFMAN 23-110.

4.12.6.2. Performs user calibration and maintenance on flight TMDE.

4.12.6.3. Coordinates with TMDE to ensure calibration requirements are met.

4.12.6.4. Maintains the R-14 master ID listing.

4.12.6.5. Maintains CTKs, tool storage area and test equipment IAW **Chapter 10** of this instruction.

4.12.6.6. Maintains the flight TO and publication files.

4.12.6.7. Maintains supply management reports and listings (i.e., D23, D04, D18, D19 and Q13).

4.12.6.8. Manages consumables.

4.12.6.9. Manages HAZMAT and ESOH items IAW ESOH guidance.

4.13. UAV Weapons Section (MQ-1/9 Units).

4.13.1. All 2W1X1 manpower positions earned to support the MQ-1/9 shall be formed under a single work center designated as a weapons section. The weapons section shall support and perform training and certification/qualification for all MQ-1/9 weapons loading, armament systems, and suspension equipment inspections and maintenance.

4.13.1.1. The WWM will have management authority IAW **Chapter 12** of this instruction.

4.13.1.2. A separate armament flight will not be formed to support MQ-1/9 operations.

4.13.2. With the exception of those personnel designated by the WWM, all 2W1 personnel will be qualified/certified to perform both loading and on and off armament equipment maintenance and inspection functions.

4.13.2.1. The WWM will designate in writing weapons flight supervision and expediters to be certifiers at deployed locations (when utilized) for MPRL evaluations and load crew member recertification.

4.14. Plans, Scheduling and Documentation Section (AMU PS&D). AMU PS&D is the focal point for all maintenance planning of assigned aircraft. In MAF and ARC units, MOF PS&D performs AMU PS&D functions. Refer to **Chapter 7** of this instruction and MAJCOM instructions for additional AMU PS&D responsibilities.

4.14. (ANG) N/A to the ANG except the 116 ACW and 153 AW.

4.15. Support Section. The section may include the following sections/functions to support flightline maintenance and generation activities; support section (CTKs/special tools, E-Tools, test equipment, TOs, bench stock), Dash 21 equipment, AME, vehicles, mobility equipment and dedicated supply support functions to support the production effort. MAF and Low Density-High Demand (LD-HD) units will combine aircraft support functions into one Aircraft Support Flight (ASF). The ASF in the AMXS shall support all AMUs. Due to geographical separation, the CTK function may be decentralized into the AMUs. The NCOIC must possess a maintenance AFSC (2AXXX/2WXXX). Assign personnel for a minimum of 12 months. 2W1X1 personnel may be required to maintain task qualification/certification. MXG/CC approval is required for rotation under 12 months. Support sections must standardize procedures across the AMXS/HMXS for security, control, and accountability of equipment. Refer to **Chapter 11** of this instruction and AFMAN 23-110 for guidance on supply procedures. Refer to **Chapter 10** of this instruction for tool control guidance. Supply support procedures in this section do not apply to aircraft supported by Contractor Operated and Maintained Base Supply (COMBS). The Support section will:

4.15. (ANG) Support Section. The typical ANG unit does not have a Support Section, but when assigned the following will apply:

4.15.1. Maintain TOs IAW TO 00-5-1.

4.15.2. Maintain bench and operating stocks. See **Chapter 11** of this instruction for detailed procedures.

4.15.3. Ensure maintenance, control and storage of assigned AME, Dash-21 equipment, and Maintenance, Safety, and Protective Equipment (MSPE) IAW AFI 21-103. Develop local procedures to control and store other equipment not identified as Dash-21 equipment (e.g., MAF-aircraft galley items, U-2 pods panels, aircraft pylon attachment cover panels, aircraft covers/plugs) using AFI 21-103 guidelines.

4.15.4. Accomplish squadron deployment processes (e.g., equipment/supply preparation/recovery).

4.15.5. Maintain HAZMAT and ESOH items IAW AFI 32-70XX-series instructions, and AFPD 90-8.

4.15.6. Control and maintain TMDE IAW TO 33-1-27, *Maintenance Support of Precision Measurement Equipment*.

4.15.6.1. Limit user maintenance for TMDE assigned to support sections to those tasks within the squadron's capability.

4.15.6.2. Comply with TO 33K-1-100, *TMDE Calibration Interval Technical Order and Work Unit Code Reference Guide*; TO 00-20-14, and other applicable technical directives concerning the use, care, handling, transportation, and calibration of TMDE owned by the section.

4.15.6.3. Maintain and manage squadron LMR IAW **Chapter 14** of this instruction (as applicable).

4.16. AMU Supply Support. In addition to the responsibilities in **Chapter 11** of this instruction for maintenance supply support procedures, supply support will:

4.16.1. Requisition parts and use supply management products. Initiate follow-up action when necessary.

4.16.2. Notify the expediter of all back-ordered parts.

4.16.3. Maintain QRL as needed and provide it to technicians.

4.16.4. Track and process DIFM assets, to include warranty parts IAW AFMAN 64-110.

4.16.5. Manage reusable containers IAW AFI 24-202, *Preservation and Packing*, and TO 00-20-3.

4.16.6. Control and manage aircraft tail number bin (TNB) if stored within the support section. When FOM assets are colocated with TNB, they must be similarly controlled and managed.

4.16.7. Notify the expediter of tail number "mark for" changes.

4.16.8. Monitor the squadron CANN program and associated documentation.

4.16.9. Process the MICAP start in Mission Capable Asset Sourcing System (MASS) (applies to commands with a Regional Supply Squadron (RSS)).

4.16.10. Coordinates with RSS (if applicable) to upgrade, downgrade and cancel MICAP requirements.

4.16.11. Supply personnel will have access and be qualified on the following supply systems (as applicable) in order to perform UTC taskings: Integrated Logistic Systems-Supply (ILS-S), Discoverer Plus, MASS, SBSS, and other systems. Identify and document training in the CFETP.

4.17. (Added-ANG) Transient Aircraft. Provide maintenance for all transient aircraft as required.

4.17.1. **(Added-ANG)** The scope and depth of required technical data to support transient aircraft shall be determined by the MXG/CC. If technical data and qualified personnel are not available then the pilot or qualified air crew member must remain at the aircraft while basic servicing operations are performed. Under no circumstances shall maintenance be performed on transient aircraft without technical data and qualified personnel.

Chapter 5

MAINTENANCE SQUADRON (MXS)

5.1. General. The MXS consists of personnel from various AFSCs organized into flights: propulsion, avionics, TMDE, accessories maintenance, AGE, fabrication, armament systems, maintenance, and munitions flights. The MXS maintains AGE, munitions, off-equipment aircraft and support equipment components; performs on-equipment maintenance of aircraft and fabrication of parts; and provides repair and calibration of TMDE. If a MXS exceeds 700 authorizations, MAJCOMs may establish an Equipment Maintenance Squadron (EMS) and Component Maintenance Squadron (CMS) IAW AFI 38-101. Refer to AFI 21-200 and AFI 21-201 for guidance to determine if a Munitions Squadron is warrented. ***NOTE***: The terms and responsibilities associated with the sections identified in this chapter may differ or may not be applicable to all units, based on unit size, mission, and MDS assigned.

5.1. (ANG) General. N/A to the ANG. The following only applies to the ANG: The MXS is divided into Component Maintenance and Equipment Maintenance. Component Maintenance performs both on and off equipment maintenance on assigned aircraft and normally consists of Avionics, Propulsion, and Accessories. Equipment Maintenance performs both on and off equipment maintenance on assigned aircraft and normally consists of Fabrication, AGE, Inspection, and Munitions (when assigned). The extent of CUT tasking shall be locally determined. MDS peculiarities shall determine exceptions to the general organization of the MXS. **NOTE**: **The terms and responsibilities associated with the sections identified in this chapter may differ or may be N/A to all units based on unit size, mission, and MDS assigned.**

5.2. Squadron Commander Responsibilities. The squadron commander performs command functions outlined by public law, or directives common to all AF SQ/CCs. They are responsible to the MXG/CC for overall squadron management. General responsibilities are outlined in **Chapter 3** of this instruction. The SQ/CC recommends and the MXG/CC assigns flight commanders. Appoints Munitions Flight Chief IAW AFI 21-201.

5.3. Operations Officer/MX SUPT Responsibilities. The MXS Operations Officer/MX SUPT is responsible to the SQ/CC for maintenance production. The Operations Officer, assisted by the MX SUPT, manages the resources to accomplish the workload. In addition to general responsibilities in **Chapter 3** of this instruction, the Operations Officer/MX SUPT will:

5.3.1. Review and consolidate monthly maintenance plan inputs from flights/sections and forward to MOF PS&D.

5.3.2. Participate in the review of base level repair capability IAW TO 00-20-3, AFI 21-123 and MAJCOM supplements.

5.3.3. Ensure EOR procedures for transient aircraft are developed IAW TO 00-20-1 and MAJCOM supplements.

5.3.3. **(ANG)** N/A to the ANG.

5.3.4. Ensure procedures are developed by the MXS and WS for required weapons loading actions on transient aircraft, storage of transient aircraft impulse cartridges, and requisition and maintenance of weapons safing equipment for common transient types of aircraft.

5.3.5. Provide local manufacture capability and ensure fabrication process is controlled IAW **Chapter 10** of this instruction.

5.3.6. When applicable, ensure MXS personnel use the Engineering Data Service Center (EDSC) and Engineering Technical Service (ETS) personnel to obtain information and specifications when the information in TOs does not provide enough detail.

5.3.6. **(ANG)** Also may use JEDMICS when technical orders do not provide enough detail.

5.3.7. Appoint MXS production superintendents.

5.3.7. **(ANG)** If used.

5.4. Production Superintendent. If appointed, in addition to the general responsibilities in **Chapter 3** of this instruction, the MXS Pro Super will:

5.4.1. Monitor flightline operations and coordinate support and priority with other squadron production superintendents and MOC. Focus on aircraft generation and direct the overall maintenance effort of their respective units by placing priority on aircraft supporting operational requirements, scheduled and unscheduled aircraft maintenance, and aircraft used for maintenance and/or operations training. Aggressively work NMC aircraft.

5.4.2. Provide specialist non-availability to the MOC at the beginning of each shift and as changes occur for those specialists routinely dispatched.

5.4.3. Identify production requirements and shortfalls to the Operations Officer/MX SUPT.

5.4.4. Direct the overall maintenance effort of their units through the Flt CCs/Chiefs, section NCOICs, dock /element NCOIC to meet mission requirements.

5.5. Specialist Support.

5.5.1. In addition to general responsibilities in **Chapter 3** of this instruction, the section NCOIC will:

5.5.1.1. Coordinate with the MXS production superintendent on maintenance priorities before dispatching personnel.

5.5.1.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: In coordination with MOC and the Pro Super as applicable, on maintenance priorities before dispatching personnel.

5.5.1.2. Ensure TMDE, tools and technical data are available and used.

5.5.1.3. Ensure specialists order parts using MIS.

5.5.1.4. Maintain pod inventory and status reporting in RAMPOD on all assigned pods IAW AFI 21-103 Chapter 10.

5.5.2. Upon dispatch, technicians are responsible to the Expediter, section NCOIC, or dock/element NCOIC . Technicians will:

5.5.2. **(ANG)** Also Pro Super.

5.5.2.1. Report in before beginning the job.

5.5.2.2. Review aircraft IMTs/forms to determine status prior to beginning any maintenance on an aircraft.

5.5.2.3. Verify the status of AGE and SE prior to beginning the job.

5.5.2.4. Report job completions, stop times, ETIC slippage and significant problems.

5.5.2.5. Provide all document numbers for back ordered parts.

5.5.2.6. **(Added-ANG)** Ensure MIS accurately reflects AFTO Form/IMT 781 entries. Ensure entries are accurate and completed in a timely manner.

5.6. Accessories Flight. Normally performs maintenance on Electrical and Environmental (E&E) systems, egress systems, fuel systems and hydraulic systems.

5.6. (ANG) Accessories. N/A to the ANG. The following only applies to the ANG: This activity performs on-and-off equipment maintenance of aircraft systems and associated support equipment. It may be organized into the following shops: Pneudraulic, Electro-Environmental, Fuel Systems, and Egress.

5.6.1. Flt CC/Chief Responsibilities. In addition to the common responsibilities in **Chapter 3** of this instruction, the Accessories Flt CC/Chief will:

5.6.1.1. Ensure an Egress training program is established IAW AFI 21-112.

5.6.1.2. Ensure E&E and hydraulic personnel rotation plans are developed to comply with core task requirements. Rotation plans are N/A to the ARC; however all core tasks must be complied with.

5.6.1.3. Ensure explosives are controlled and stored in approved storage areas/containers.

5.6.2. E&E Section:

5.6.2.1. Performs maintenance on aircraft electrical systems.

5.6.2.2. Performs authorized local manufacture, repair, overhaul, testing, modification, and inspection of aircraft and SE electrical components, wiring harnesses, batteries, and charging units.

5.6.2.2.1. Ensures battery disposal procedures meet environmental standards and batteries are controlled for accountability purposes.

5.6.2.3. Performs on- and off-equipment maintenance on aircraft systems and components: LN2; LOX/GOX/OBOGS; environmental control; pressurization; fire extinguisher/suppression (including explosive squibs); vacuum; anti-icing; bleed air; and combustion heater and on-board nitrogen-generating systems.

5.6.2.4. Performs repairs on LOX/GOX/LN2 servicing units/carts, except for user-type maintenance. (Self-generating nitrogen servicing carts (SGNSC) and all other basic trailer/chassis maintenance is performed by AGE). Performs hot purge and pump down on aircraft LN2 and LOX servicing carts.

5.6.2.4. **(ANG) NOTE** : Responsibility for scheduling inspections, ordering parts, and reporting status of servicing carts will be determined by the MXG/CC.

5.6.2.5. Performs off-equipment maintenance for aircraft and aircrew carbon dioxide (CO2) cylinders. U-2 units maintain assigned air sampling equipment and perform system uploads, downloads, and pre-flight operational checks.

5.6.2.5. **(ANG)** If tasked.

5.6.2.6. Performs off-equipment maintenance on type MA-1 portable breathing oxygen cylinders (portable walk around bottles) and regulators, to include removing/replacing the regulator and purging the bottle. Ownership and storage of these cylinders will remain with the appropriate support section.

5.6.2.6. **(ANG)** If tasked.

5.6.3. Egress Section:

5.6.3.1. Maintains aircraft egress systems, components, and trainers (e.g., aircraft ejection seats, extraction and escape systems, egress components of jettisonable canopies, explosive components of escape hatches/doors). Provides storage for egress explosive items removed during maintenance. In addition to common responsibilities outlined in **Chapter 3** of this instruction the egress section NCOIC will ensure aircraft (to include GITA) are "safed" IAW 00-80-series and MDS-specific TOs. Additionally, all permanently decommissioned static display aircraft explosive devices will be removed, condemned, or turned in to LRS IAW AFMAN 23-110 and appropriate documentation will be forwarded to the wing historian.

5.6.3.1.1. Request assistance from the explosive ordnance disposal (EOD) unit when egress explosive devices are damaged or suspected to be unsafe.

5.6.3.1.2. Establish the egress training program to include a master training plan, explosive safety, aircrew life support certification, and MIS time change documentation qualification and review this program semiannually. Ensure quality upgrade/qualification egress systems training is conducted IAW AFI 21-112.

5.6.3.2. Ensure the egress TCI data in the MIS is accurate. Automated data products will be updated whenever an egress item is replaced to ensure the annual TCI forecast is correct. Do not maintain a separate data base to manage the egress TCI program.

5.6.3.2.1. When delegated in writing by the PS&D section, egress personnel clear suspenses, and forward a snapshot of the completed job to PS&D.

5.6.3.2.2. Ensure component background information is provided to the appropriate PS&D section to include a list of any components having multiple part numbers with different service lives. At least annually, meet with PS&D to verify each aircraft's egress data. Document the annual verification on the AF IMT 2411 maintained in the aircraft jacket file.

5.6.3.2.3. Coordinate with MDSA section to establish a monthly requirement for MIS products to help manage egress TCIs.

5.6.3.3. **(Added-ANG)** Egress Section is responsible for overall management and control of the egress configuration management. (IMDS-CDB/REMIS corrections).

5.6.4. Fuel Systems Section:

5.6.4.1. Repairs, functionally checks, and inspects aircraft fuel systems, fuel tanks, hydrazine systems, in-flight refueling receptacle systems, and related components. In addition to the common responsibilities outlined in **Chapter 3** of this instruction, the fuel systems section NCOIC will:

5.6.4.1.1. Ensure assigned personnel receive periodic physical examinations as established by the base medical service. Track occupational physicals in the MIS.

5.6.4.1.2. Establish controls to prevent unauthorized entry into fuel cell and hydrazine repair areas.

5.6.4.1.3. Provide safety training to all personnel who enter aircraft fuel tanks or open fuel tank areas to perform maintenance or provide assistance.

5.6.4.1.4. When required, ensure hydrazine response teams are formed with only team members/supervisors possessing AFSC 2A6X4. In the ARC, only the hydrazine response team supervisor must possess AFSC 2A6X4. Refer to TO 00-25-172, TO 42B1-1-18, *General Procedures for Handling of H-70,* MDS-specific TOs, AFOSHSTD 48-8, *Controlling Exposure to Hazardous Material,* and MAJCOM directives for additional information on hydrazine hazards and management.

5.6.4.1.4. **(ANG)** The MXG/CC may appoint team members from other AFSCs as long as the person is task certified. Hydrazine Response Team members must be listed on the SCR.

5.6.4.1.4.1. Provide initial and refresher hydrazine safety training for all hydrazine response team members IAW AFOSHSTD 48-8.

5.6.4.1.4.2. Integrate hydrazine response team responsibilities into the CDDAR Program and local IFE functional checklists.

5.6.4.1.5. Perform safety inspections on facilities to ensure open tank repair areas, and equipment used for open fuel tank or hydrazine maintenance meet MDS-specific TOs and AFOSHSTD 48-8 requirements.

5.6.4.1.6. Manage and document non-grounding fuel leaks according to TO 1-1-3, and MDS-specific TOs. Coordinate with PS&D to schedule aircraft with non-grounding fuel leaks through the fuel systems repair facility to prevent further deterioration.

5.6.4.1.6.1. Meet monthly with PS&D to schedule external fuel tanks for inspection or TCTOs.

5.6.4.1.7. Establish notification procedures to inform the base fire department when open fuel tank maintenance is in progress and when maintenance is complete.

5.6.4.1.8. Establish a Confined Space Entry Program IAW TO 1-1-3 and AFOSHSTD 91-25.

5.6.4.1.9. Establish a respiratory protection program that covers use, training, storage, cleaning, and inspection of respirators, hoses, and associated support equipment IAW AFOSHSTD 48-137, *Respiratory Protection Program*. Documents all respiratory training requirements on AF IMT 55.

5.6.4.1.10. Establish local notification procedures to contact owning organizations when fuel system maintenance is complete on external fuel tanks, conformal fuel tanks (CFTs), and weapons bay tanks (WBTs).

5.6.4.2. Performs maintenance on AME external fuel tanks, CFT, and WBT. Provides temporary storage for CFTs/WBTs. After maintenance, the owning unit will reclaim CFTs and WBTs. The fuels section:

5.6.4.2.1. Purges and preserves external tanks that require ground shipment.

5.6.4.3. Performs all maintenance and inspections on WRM fuel tanks. The appropriate system specialist maintains release systems components. After maintenance, notify LRS to pick up the tank.

5.6.4.3.1. Purges and preserves fuel tanks for storage and shipment. LRS is responsible for the storage, delivery, and shipment of fuel tanks. Meets quarterly with installation War Reserve Materiel Officer (WRMO)/WRM Non-Commissioned Officer (NCO) and LRS representatives to review inspection criteria for stored WRM tanks, schedule tank inspections and maintenance, and report discrepancies identified during WRM monthly walk-through inspections, if applicable.

5.6.4.4. NFTBU Team Members and Training. The fuel systems section NCOIC identifies 2A6X4 personnel as NFTBU cadre members and establishes a training program NFTBU team members.

5.6.4.4.1. The cadre members will attend initial NFTBU training at an Air Education and Training Command (AETC) Training Detachment (TD). Once trained, cadre members will conduct initial and annual refresher NFTBU training for all fuel systems section personnel tasked for any UTC and document completed training in the MIS and AF Form 623, **Individual Training Record Folder**.

5.6.4.4.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Fuels System personnel tasked as a nestable fuel tank build up (NFTBU) cadre member shall attend initial NFTBU training at a FTD. The Fuels Section shall establish and conduct annual refresher NFTBU training classes for all Fuel Systems personnel tasked for any UTC and document completed training in MIS. The Fuels System personnel trained by FTD must conduct the annual refresher training for other section personnel (refer to **Chapter 14**).

5.6.4.4.2. The NFTBU team will be augmented by non-2A6X4 personnel in the wing during build up operations. The cadre team will conduct “just in time” training for augmentees immediately prior to performing NFTBU operations (refer to **Chapter 14** of this instruction). (ARC units follow MAJCOM directives).

5.6.4.4.2.1. Meet quarterly with the installation WRMO/WRM NCO and MTF to identify fuel systems personnel for WRM NFTBU teams. (Units are no longer required to maintain ready-trained augmentees. Commanders must provide NFTBU augmentees to fill UTC requirements at the time of tasking). Reviews UTC MISCAP statement as it applies to the unit’s tasking and ensures availability of trained fuel systems personnel and serviceable equipment/tools to support requirements.

5.6.5. Hydraulics Section. This section maintains on- and off-equipment pneumatic, hydraulic systems and components (except environmental and egress systems) and provides maintenance support for SE and test equipment. Additionally, the section maintains hydraulic test stands, pumping units, and associated components. :

5.6.5.1. Local manufacture and test hose assemblies and test rigid tube assemblies.

5.6.5.1. **(ANG)** At MXG/CC option the local manufacture and testing of rigid tubing may be moved to another workcenter.

5.6.5.2. Performs maintenance on munitions loading and handling equipment with discrepancies that exceed the munitions flight repair capabilities.

5.6.5.3. Maintains and inspects refueling drogues, booms, and refueling receptacle systems for large aircraft.

5.6.5.4. Repairs, overhauls, and bench checks flight control, landing gear, and hydraulic power system components (e.g., brakes, struts, accumulators, reservoirs, actuators).

5.7. Aerospace Ground Equipment (AGE) Flight

5.7.1. Provides powered and non-powered AGE (NPA) as defined in TO 00-20-1 to support the wing mission. The AGE flight will be organizationally structured to most effectively utilize manpower and resources. The flight may be organized as a consolidated maintenance unit (repair, inspection, and servicing sections) or may be broken into teams for concentrated support efforts.

5.7.1. **(ANG)** The MXG/CC may assign the responsibilities of nonpowered AGE to other workcenters.

5.7.1.1. Maintains AGE in direct support of sortie production and back shop maintenance activities. Applicable AGE is listed in the respective Allowance Standards (AS).

5.7.1.2. Picks up, services, delivers, repairs, performs approved modifications and inspects assigned AGE, with the exception of non-powered MMHE, propulsion SE, vehicle SE, non-powered dock stands, and avionics SE.

5.7.1.2. **(ANG)** The MXG/CC has the option to relieve the AGE element from pickup and delivery of powered and nonpowered AGE.

5.7.1.3. Performs chassis, enclosure, and trailer maintenance on gaseous and cryogenic servicing units.

5.7.1.3.1. Performs entire inspection and maintenance on SGNSC.

5.7.1.4. Manages SE maintenance/inspection scheduling activities for AGE maintained by the flight. Ensures equipment maintained by the AGE flight is placed on the AGE Flight/work center equipment account to the fullest extent possible.

5.7.2. Flt CC/Chief Responsibilities. In addition to the general responsibilities in **Chapter 3** of this instruction, the AGE Flt CC/Chief will:

5.7.2.1. Coordinate annually with applicable Operations Officer/MX SUPT to identify types and quantities of minimum equipment level (MEL) AGE (powered and NPA). The MXG/CC will be the final approval authority for the MEL.

5.7.2.2. Ensure mission essential AGE status is tracked daily using MIS, when available. When not available, track AGE status using AF IMT 2431, **Aerospace Ground Equipment Status**, or locally developed electronic product. Status and ETIC will be provided to the MOC when it falls below MEL. ***NOTE***: When a local product is used it must include, as a minimum, the same information found on the AF IMT 2431.

5.7.2.3. Enforce the proper use of approved cleaning compounds IAW TO 35-1-3, *Corrosion Prevention, Painting and Marking of USAF Support Equipment (SE)* and Qualified Products Listings (QPL).

5.7.2.4. Establish and maintain a field numbering system IAW TO 35-1-3 on assigned AGE.

5.7.2.5. Ensure the MIS is used for equipment scheduling to the maximum extent possible. Ensure all newly assigned AGE (to include AGE receivd from depot maintenance) receives an acceptance inspection IAW TO 00-20-1.

5.7.2.6. Control fuel dispensed from issue tanks IAW AFMAN 23-110, AFI 23-204, *Organizational Fuel Tanks,* and Defense Energy Support Center Guidance.

5.7.2.7. Ensure the uniform repair and replacement criteria program is implemented IAW TO 00-25-240, TO 35-1-24, *General Instructions -- AF Economic Repair/Replace Criteria For Selected San Antonio ALC Managed Support Equipment (SE)*, TO 35-1-25, and TO 35-1-26, *General Instructions -- AF Economic Repair/Replace Criteria For Selected WR-ALC Managed Support Equipment (SE) FSG 6100*. The flight chief must ensure replacement assets are placed on order with the appropriate backorder priority.

5.7.2.8. Review all Dull Sword reports for AGE Flight-maintained MMHE listed in the Master Nuclear Certification List at website: **https://wwwmil.nwd.kirtland.af.mil/mncl/index.cfm**

5.7.2.9. Coordinate welding requirements with the fabrication flight chief. AGE and fabrication flight chiefs will determine the repair action for AGE welding requirements not covered by end item TOs. Safety determinations are made by the fabrication flight chief.

5.7.2.10. Approve and control AGE CANN actions IAW **Chapter 11** and **Chapter 14** of this instruction. Establish procedures for AGE support section to initiate CANN work orders.

5.7.2.11. In conjunction with maintenance training, establish and monitor the AGE operator training program.

5.7.2.12. Coordinate with structural maintenance to establish a viable AGE corrosion control prevention program to include ensuring assigned AGE is inspected, at a minimum of every two years, Painting will be scheduled and accomplished as required. Refer to AFI 21-105.

5.7.2.13. Initiate written procedures to support equipment and personnel requirements at down-range locations or satellite bases.

5.7.2.14. Ensure equipment is prepared for storage or shipment IAW TO 35-1-4, *Processing and Inspection of Support Equipment for Storage and Shipment,* and applicable end item TOs.

5.7.2.15. Ensure equipment is prepared to meet mobility taskings.

5.7.2.16. Ensure quarterly equipment inventory listings are submitted to the respective MAJCOM AGE functional manager by the 15th day following the closeout of each quarter. Listings must identify all AGE maintained by the flight and all supply requisition/due-out information.

5.7.2.16. **(ANG)** Provides annual equipment listings to NGB/A4MM. N/A to UAE owned F-16 block 60 equipment and RNAF owned F-16 aircraft.

5.7.2.17. Ensure effective training programs are instituted and personnel are rotated, as necessary, to facilitate training and currency in all areas.

5.7.2.18. Report instances of SE abuse and misuse to Operations Officer/MX SUPT for corrective action.

5.7.3. AGE Pro Super (if established) Responsibilities. Responsible to the AGE Flt CC/Chief for the maintenance production of all assigned sections or teams. The Pro Super will:

5.7.3. **(ANG)** These duties shall be performed/assigned by the AGE Supervisor.

5.7.3.1. Enforce strict adherence to technical data and management procedures. Advocate the importance of using current technical data and use of the TO improvement program IAW TO 00-5-1.

5.7.3.2. Monitor the production of each section or team and recommend equipment and personnel adjustments to the Flt CC/Chief.

5.7.3.3. Monitor section or team adherence to the flight's safety, training, and CTK programs.

5.7.3.4. Frequently spot check equipment for serviceability.

5.7.3.5. Approve CANN actions when authorized by the MXG/CC IAW **Chapter 14**, **Table 14.1.** of this instruction on powered and NPA AGE. Ensure all actions are documented in the MIS. CANN approval will not be delegated.

5.7.3.6. Resolve production conflicts between sections or teams.

5.7.3.7. In conjunction with the MTF, develop course control documents for AGE familiarization training.

5.7.3.8. Assist the Flt CC/Chief to manage and supervise the flight's assigned resources.

5.7.3.8. **(ANG)** N/A to the ANG.

5.7.4. Section NCOIC Responsibilities. In addition to the common section NCOIC responsibilities outlined in **Chapter 3** of this instruction, section NCOICs (or Team Leaders, depending on organization) will:

5.7.4.1. Coordinate with flightline Operations Officer/MX SUPT for daily AGE requirements.

5.7.4.2. Inform the AGE Pro Super or Flt CC/Chief of equipment and personnel shortfalls.

5.7.4.3. Request approval from the AGE Pro Super for CANN actions.

5.7.4.3. **(ANG)** N/A to the ANG.

5.7.4.4. Inform the AGE Pro Super or Flt CC/Chief of MICAP conditions that may have an adverse effect on the ability to support the mission.

5.7.4.4. **(ANG)** N/A to the ANG.

5.7.4.5. Ensure shop equipment is inspected and annotated on the AF IMT 2411, or AFTO IMT 244.

5.7.5. Repair and Inspection Section. Completes inspections and major maintenance on powered and non-powered AGE. Section may be divided into a repair section and an inspection section.

5.7.5. **(ANG)** These duties shall be performed by the AGE personnel.

5.7.5.1. Performs maintenance beyond the capability of the servicing section.

5.7.5.2. Corrects discrepancies discovered during inspection and deferred discrepancies.

5.7.5.3. Performs TCTOs as required.

5.7.5.4. Validates all MICAP parts requests before placing items on order.

5.7.5.5. Prepares AGE and section equipment for storage or shipment, to include assisting the servicing, pickup, and delivery section prepare equipment for deployment.

5.7.5.5. **(ANG)** N/A to the ANG. The following only applies to the ANG: Prepare AGE and section equipment for storage or shipment.

5.7.5.6. Performs corrosion inspections and treats corrosion before assembly.

5.7.5.7. Cleans, tags, and prepares components to route through the repair cycle.

5.7.5.8. Performs operational checks before returning equipment to the servicing, pickup, and delivery section.

5.7.5.8. **(ANG)** N/A to the ANG. The following only applies to the ANG: Perform AGE operational checks before returning equipment to serviceable status.

5.7.5.9. ARC Only -- Maintains MA-1A enclosures installed on deicer trucks

5.7.5.9. **(ANG)** At MXG/CC option.

5.7.5.10. **(Added-ANG)** Maintains all assigned F-2 type trailers. Trailers placed in-use receive pre and post-use serviceability inspections. Develops periodic inspection requirements (maximum interval of 18 months) for trailers in storage to include:

5.7.5.10.1. **(Added-ANG)** Corrosion inspection and preservation treatment.

5.7.5.10.2. **(Added-ANG)** Tire inflation check.

5.7.5.10.3. **(Added-ANG)** Wheel bearing and chassis lubrication.

5.7.6. Servicing, Pickup, and Delivery section. Services, inspects, and dispatches AGE. Manages and supervises the AGE tow vehicle operation. More than one servicing, pickup, and delivery function may be set up based on mission requirements, facilities, and base layout. As a minimum, AGE drivers must be available during aircraft launches.

5.7.6. **(ANG)** These duties shall be performed by the AGE personnel.

5.7.6.1. Performs servicing inspections on powered AGE IAW equipment work cards.

5.7.6.2. Performs minor maintenance.

5.7.6.3. Prepares AGE for deployment.

5.7.6.4. Delivers AFTO IMTs 244/245 to AGE schedulers for equipment being sent to the repair and inspection section.

5.7.6.4. **(ANG)** N/A to the ANG. The following only applies to the ANG: Reviews AFTO Form 244 and AFTO Form 245, *Significant Historical Data*, for equipment prior to maintenance.

5.7.6.5. Picks up and delivers AGE, except operator dispatched equipment (e.g., bomb lifts and powered munitions trailers).

5.7.6.5. **(ANG)** At MXG/CC option.

5.7.6.5.1. NPA is normally located in the using organization, unless maintenance or inspection needs dictate return to the flight. Normally, the equipment users are responsible for transporting NPA within the using organization. Using organizations are responsible to inspect and service NPA prior to use.

5.7.6.6. Delivers GOX and nitrogen (N2) carts to servicing and maintenance facility.

5.7.6.6. **(ANG)** At MXG/CC option.

5.7.6.7. Moves equipment on the flightline in support of the flightline expediter.

5.7.6.8. Updates vehicle status display, if required by the Flt CC/Chief.

5.7.6.9. Utilizes AF IMT 864, **Daily Requirement and Dispatch Record**, or locally developed electronic product to record all equipment pickup and delivery. When a local product is used, it must include, as a minimum, the same information found on the AF IMT 864.

5.7.6.10. Maintains non-hazardous Absorbed Glass Matt-type batteries (e.g., Optima brand) utilized in powered AGE.

5.7.7. AGE Production Support Section. Provides administration and ancillary services for TO files maintenance, supply support, fuels management, and scheduling support for the AGE Flt CC/Chief. Assign a full-time scheduler (AFSC 2R1X1) and supply specialist (AFSC 2S0X1) to the support section when the workload warrants. In addition to the common responsibilities outlined in **Chapter 3**, the production support section NCOIC will:

5.7.7. **(ANG)** These duties shall be performed/assigned by the AGE Supervisor.

5.7.7.1. Maintain the flight's TO files IAW TO 00-5-1. TO files may be decentralized and managed by respective work centers.

5.7.7.2. Manage the flight's tool storage and issue areas IAW **Chapter 10** of this instruction.

5.7.7.3. Manage the flight's TMDE program.

5.7.7.4. Manage the flight's supply function IAW **Chapter 11** of this instruction and AFMAN 23-110.

5.7.7.5. Manage the flight's scheduling function.

5.7.7.6. Manage the flight's fuels management program.

5.7.7.7. Manage the flight's HAZMAT and ESOH programs IAW ESOH guidance and HAZMAT directives.

5.7.8. AGE Scheduling. The AGE Scheduler works for the production support section NCOIC and is responsible for maintaining the AGE historical records. In addition, the AGE Scheduler will:

5.7.8. **(ANG)** These duties shall be performed/assigned by the AGE Supervisor.

5.7.8.1. Plans and schedule all AGE scheduled maintenance. Prepare an AGE maintenance plan and maintain a current equipment scheduling report for all assigned equipment.

5.7.8.1.1. Schedule Phase I and Phase II inspections to overlap at the 6 month point.

5.7.8.2. Control off-equipment work.

5.7.8.3. Schedule, control, and monitor TCTOs/TCIs, and one-time inspections (OTIs) IAW 00-20-series TOs and **Chapter 7** of this instruction.

5.7.8.4. Set scheduling priorities based on the minimum number of each type of equipment. Monitor and report changes to AGE MEL's (as established locally) to the AGE Pro Super, Flt CC/Chief, and the MOC.

5.7.9. AGE Sub-pools. A sub-pool (ready line) is a site, other than the central AGE parking area, where AGE is positioned for future dispatch. Sub-pools are set up based on mission needs, facilities, or base layout. AGE Flt CC/Chief will coordinate sub-pool locations with airfield management and perform spot checks of AGE in these locations.

5.7.9. **(ANG)** At MXG/CC option.

5.7.10. Tow Vehicles. AGE tow vehicles are radio equipped to expedite AGE deliveries. Radios will be permanently installed or hand held. Initial radio operator familiarization training will be given to vehicle drivers. When installing radios ensure compliance with AFI 24-302 for add-on vehicle equipment. Flt CC/Chief will establish proper distribution and control of assigned vehicles.

5.7.10.1. Vehicle Status. If required by the Flt CC/Chief, a vehicle status display is used to show the status of vehicles. Minimum information consists of vehicle type, registration number, and status.

5.8. Armament Flight.

5.8.1. The armament flight normally performs off-equipment maintenance for assigned fighter aircraft armament systems, guns, pylons, racks, launchers and adapters. For B-52 units, the armament flight shall assist with performing weapons system on-equipment periodic phase inspections. An AFSC 2R1X1 scheduler, 2S0X1 supply specialist, and 3A0X1 information management specialist may be assigned to the flight. The flight normally consists of three sections: maintenance, AME, and support. The WWM, with GP/CC concurrence, determines when armament systems personnel are required to perform load crew duties or related certifiable tasks. MAJCOMs must determine applicable portions of the weapons and armament responsibilities for contract and civil service organizations. ANG: The above responsibilities are performed by the weapons section. ***NOTE:*** Armament flights are not normally formed in MQ-1 Predator units.

5.8.1. **(ANG)** Within the ANG, paragraph **5.8.** and sub-paragraphs are applicable to the Armament Section of the Weapons Element located in AMXS as outlined in paragraph **4.11.4.** of this instruction.

5.8.2. When more than one AMU is supported, combat armament support teams (CAST) may be formed. If the maintenance section is organized into CASTs, each will be aligned with a specific AMU. CASTs provide exclusive support (to the maximum extent possible) to the AMU with which they are aligned. If applicable, show CAST alignment on UMDs and establish separate MIS work centers for each. Divide tools and equipment proportionally and jointly use scarce or one-of-a-kind items; do not exceed AS quantities. Equally divide maintenance responsibilities for joint-use equipment between CASTs. As a minimum, CAST chiefs will be 7-skill level NCOs and are responsible to the maintenance section NCOIC for all maintenance actions performed by their respective team (flight chief may waive CAST chief requirements). The CAST maintenance concept is not intended to prohibit a unified or consolidated armament flight effort to meet the overall production goals.

5.8.3. Flight Commander/Flight Chief Responsibilities. In addition to common flight chief responsibilities outlined in **Chapter 3** of this instruction, the armament flight chief will:

5.8.3.1. Assist the WWM in recommending distribution of wing 2W1X1 personnel to satisfy on- and off-equipment weapons release and gun system maintenance.

5.8.3.2. Advise the Operations Officer and the WWM regarding factors which affect armament systems, gun maintenance, and other related programs.

5.8.3.3. Establish and monitor gun room security and explosive licenses if required.

5.8.3.4. Ensure AME and SPRAM accountability and control requirements are met IAW AFI 21-103.

5.8.3.5. If applicable, support WRM rack, adapter, pylon, launcher and gun maintenance requirements IAW AFI 25-101, *War Reserve Materiel (WRM) Program Guidance and Procedures*. Ensure all WRM racks, adapters, launchers, and guns are serviceable to meet unit taskings.

5.8.3.6. Provide the WWM monthly status on authorized/on-hand quantities and serviceability of AME/NIE/WRM, critical armament testers, and support equipment by the first of each month, for the previous month.

5.8.3.7. Establish a SPRAM account to track F-16 "Ruggedized" Nuclear Remote Interface Units (RNRIU) and a munitions account for dummy test rounds and issued LAU-131 launchers if required.

5.8.3.8. Establish a SPRAM account to track F-15E encoder/decoders and power supplies (as applicable, if not tracked by weapons section).

5.8.3.9. Develop and implement a recognition program for assigned personnel.

5.8.3.10. Ensure compliance with hazardous material and hazardous waste management and air emissions record keeping as required for environmental compliance IAW installation ESOHMS/EMS policy/guidance and applicable environmental requirements and guidance.

5.8.3.11. Ensure sufficient computer systems are assigned to support network and modem interface with the WWM, WS, weapons sections, automated training systems and other agencies.

5.8.3.12. Identify to LRS, by NSN, all aircraft armament systems components that require acceptance inspections.

5.8.3.12.1. Acceptance inspection items that are returned to the LRS, requiring functional check or bench check prior to use, will be identified IAW TO 00-20-3, as requiring functional check or calibration every three years.

5.8.3.13. See **Chapter 14** of this instruction for KEEP program information.

5.8.3.14. See **Chapter 14** of this instruction regarding the SCR.

5.8.3.15. See **Chapter 14** of this instruction regarding MRTs.

5.8.3.16. Ensure requirements for submitting AFTO IMT 375 on all weapons support equipment identified in TO 35-1-24 are accomplished. This process provides vital information and source documentation for ALCs to adequately reflect equipment sustainment costs, attrition rates, and to enable timely forecasting for replacement funding.

5.8.3.17. Monitor upgrade training, PRP status and qualifications of assigned work center personnel. Ensure MAJCOM Mandatory Course List (MMCL) requirements are met (if applicable).

5.8.3.18. Establish procedures to ensure items requiring explosive free certification IAW TO 11A-1-60 are properly inspected, marked and certified prior to shipment back to depot/contractors for repair or for turn-in to DRMO.

5.8.3.19. Inspect 25 percent of armament section CTK's, armament test and support equipment for serviceability, at least quarterly, and initiates corrective action as required. Schedule and track

inspections to ensure 100 percent of CTK, test and support equipment will be checked over a one year timeframe. Document inspection results and use for follow-up action and references as necessary. Ensure inspection is documented on appropriate equipment form, such as AFTO IMT 244 or AF IMT 2411.

5.8.3.20. See **Chapter 1** of this instruction for duty shift guidance.

5.8.3.21. See **Chapter 14** of this instruction for documenting maintenance.

5.8.3.22. See **Chapter 2** of this instruction for safety.

5.8.3.23. See **Chapter 9** of this instruction for impoundment procedures.

5.8.3.24. See **Chapter 7** of this instruction for PS&D functions, as applicable.

5.8.3.25. See **Chapter 14** of this instruction for EOR and self inspection program.

5.8.4. Armament Maintenance Section. This section performs the maintenance on assigned aircraft armament systems, guns, pylons, racks, launchers, and adapters. In addition to the section NCOIC responsibilities outlined in **Chapter 3** of this instruction, the maintenance section will:

5.8.4.1. In coordination with AMU (MOF in MAF units) PS&D, schedule and perform all inspections, TCTOs, time changes, maintenance and repair actions for aircraft armament systems suspension and release components and AME, including AME items preloaded with munitions for contingencies.

5.8.4.2. Perform the off-equipment portion of major inspections, and in bomber units, assist with the on-equipment portion of major aircraft inspections that pertain to the armament system.

5.8.4.3. Maintain WRM assets (if applicable).

5.8.4.4. Maintain equipment historical records (AFTO IMT 95) for AME, aircraft guns and weapons system NIE, if decentralized. If an automated maintenance management system is available, it will be used for equipment historical records. Backup files will be maintained for those portions of historical records that are automated.

5.8.4.5. Coordinate with the AMU (MOF in MAF units) PS&D for equipment requiring in-shop inspections. When possible, calendar NIE inspections are scheduled concurrent with nearest aircraft hourly inspection within the calendar interval. However, do not allow NIE/AME scheduled inspections to become overdue (Dash-6 TO). Include NIE/AME inspection schedules in both the monthly and weekly maintenance plan/flying schedule.

5.8.4.6. Perform off-equipment acceptance and transfer inspections on aircraft, to include NIE and AME. Inspections include:

5.8.4.6.1. Parts integrity inspection.

5.8.4.6.2. Complete electrical and mechanical check to include associated cables.

5.8.4.6.3. Updating/initiating historical records for each item.

5.8.4.7. Perform the off-equipment portions of aircraft inspections that pertain to armament systems. Depending on WWM input, the flight may perform certain on-equipment tasks

5.8.4.8. Maintain and inspect ammunition loading assemblies and systems. The munitions flight maintains the chassis portion.

5.8.4.9. May be task qualified to support combat coded operations squadrons. Coordinate with AMU weapons section NCOICs and the WWM to establish standard minimum qualification requirements. Qualification may include installation and removal of all assigned aircraft NIE, aircraft configuration and de-configuration with assigned AME, IPL/ Safing (EOR) actions, chaff & flare/tow decoy/gun loading and unloading procedures, and weapons release and gun system functional checks and troubleshooting. During contingencies and exercises, if applicable, CASTs are responsible to the aligned AMU weapons section NCOIC. In units without CAST formed, the WWM, weapons section NCOIC and armament system flight chief coordinate manning requirements to support exercise/contingency operations.

5.8.4.10. In coordination with AMU (MOF in MAF units) PS&D, requisitions parts to satisfy time change requirements for aircraft armament or gun system components not identified in aircraft Dash-6 TOs.

5.8.4.11. Maintain the MIS data base for installed guns, gun systems, and gun component TCIs or inspection data, based on round count limits listed in the Dash-6 TO, including updating rounds from the AF IMT 2434 or locally developed form.

5.8.4.12. Advise the flight chief of any factors limiting the maintenance capability.

5.8.4.13. Perform the armament systems portion of aircraft inspections as applicable.

5.8.5. Alternate Mission Equipment (AME) section (If not formed, the following will be accomplished by the armament maintenance section). This section accounts for, stores and controls AME. Personnel assigned to the AME section may be assigned to CASTs if they are formed. In addition to the general responsibilities in **Chapter 3** of this instruction, the AME section NCOIC will:

5.8.5.1. Develop procedures, in coordination with the AMU weapons section NCOICs and WWM, on the governing accountability and control of AME.

5.8.5.2. Maintain all weapons assigned, non-load box-configured (bomber aircraft), F-2 type trailers. Trailers placed in-use receive pre- and post-use serviceability inspections. Develop periodic inspection requirements (maximum interval of 18 months) for trailers in storage to include:

5.8.5.2.1. Corrosion inspection and preservation treatment.

5.8.5.2.2. Tire inflation check.

5.8.5.2.3. Wheel bearing and chassis lubrication.

5.8.5.3. Unpack and pack assigned AME in storage and deliver it to the maintenance section for inspection.

5.8.5.4. Develop and implement a program for documenting issue and receipt of in-use AME.

5.8.5.5. List assets as SPRAM if required.

5.8.6. Armament Support Section. This section stores and maintains required tools and equipment and manages the supply and bench stock functions for the flight. In addition to the common section NCOIC responsibilities outlined in **Chapter 3** of this instruction, the support section will:

5.8.6.1. Manage the supply function for the flight IAW AFMAN 23-110.

5.8.6.2. Perform user calibration and maintenance on flight TMDE.

5.8.6.3. Coordinate with TMDE to ensure calibration requirements are met.

5.8.6.4. Maintain the R-14 master ID listing.

5.8.6.5. Maintain CTKs, tool storage area and test equipment IAW **Chapter 10** of this instruction.

5.8.6.6. Ensure approval of LME if not included in tech data or on the MMHE Focal Point web site (<**https://peonet.eglin.af.mil/mmhe/**>) managed by the MMHE Focal Point, 615 Apalachicola Road, Suite 101, Eglin AFB, FL 32542-6845.

5.8.6.6.1. Munitions/armament LME is specialized equipment designed to interface with or support munitions or armament suspension equipment such as tools, handling dollies, storage racks, maintenance stands, transport adapters, etc. All munitions/armament LME contained on the MMHE Focal Point web site meets applicable AFOSH, explosive safety, and USAF standards, and is approved for local manufacture and use at unit level AF-wide. Drawing packages for these items are available to the unit via the MMHE Focal Point web site. Units must use MMHE Focal Point-designed munitions/armament LME for new procurements if a design exists and fills the requirement.

5.8.6.6.2. Munitions/armament LME, specifically designed to interface with or support munitions, which is not contained in technical data or on the MMHE Focal Point web site (i.e., hardened/protective aircraft shelter missile racks, "y"-stands, munitions chocks, specialized tools, etc.) must be coordinated at unit level and forwarded to the MAJCOM Functional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has AF utility, the drawings shall be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site. Munitions/armament LME, not designed to interface with or support munitions, which are not contained in technical data or on the MMHE Focal Point web site, must be approved at the unit level. Units are encouraged to forward any such approved LME for possible inclusion on the MMHE Focal Point web site by sending an approved drawing package to the MAJCOM Functional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has additional AF utility, the drawing package shall be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site.

5.8.6.6.3. All LME must meet applicable AFOSH, explosive safety, and USAF standards. All equipment designated for use with nuclear weapons test and handling must meet requirements in AFI 91-103.

5.8.6.6.4. All LME must be maintained and inspected for serviceability on a regular basis IAW appropriate 00-20 series technical data. AFTO IMT 244, or equivalent, must be maintained for all LME items (racks, stands, adapters, etc.). Equipment without technical data must, as a minimum, be inspected every 180 days for corrosion, physical defect, and lubrication as required.

5.8.6.7. Maintain the flight TO and publication files.

5.8.6.8. Maintains supply management reports and listings documents (i.e., D23, D04, D18, D19 and Q13).

5.8.6.9. Manage consumables.

5.8.6.10. Manage residual and bench stock.

5.8.6.11. Manage HAZMAT and ESOH items IAW ESOH guidance.

5.8.6.12. Refer to **Chapter 11** of this instruction for maintenance supply support.

5.9. Avionics Flight

5.9.1. The sections assigned to this flight will vary depending on the weapons systems supported and the scope of maintenance responsibilities.

5.9.1. **(ANG)** Avionics maintains avionics systems, on and/or off equipment, related equipment, and components. It may consist of the Mission Systems Shop, Communications/Navigation Shop, Instrument/Flight Control/Guidance and Control Shop, Avionics Intermediate Shop/Intermediate Automatic Test Station, and Electronic Warfare.

5.9.2. Avionics Flight Production. Avionics production efforts are geared toward actual mission needs rather than temporarily high DIFM or AWM rates.

5.9.2. **(ANG)** These responsibilities shall be performed/assigned by Avionics supervision.

5.9.2.1. Asset managers determine priorities using the D23, MIS reports, and real time status of repair resources.

5.9.2.2. Managers prioritize work to meet current and projected mission needs. MICAP parts receive priority repair (P1), RSP requirements are considered next and are prioritized by their demand rates and stock levels (P2). Peacetime operating stock restock items are normally worked as priority three (P3) , prioritized by the demand rates and item stock levels. All other items will be considered priority four (P4).

5.9.3. Two-Level Maintenance (2LM). 2LM restricts the level of repair authorized for avionics line replaceable units (LRUs). The following guidelines apply to organizations operating under 2LM. Refer to AFI 21-129 for further guidance.

5.9.3. **(ANG)** Paragraph **5.9.3.** and all subparagraphs are N/A to UAE F-16 block 60 program and RNAF owned F-16 aircraft.

5.9.3.1. Avionics sections are authorized to perform the following maintenance actions if the required support equipment is authorized and on-hand. Repairs above and beyond those listed require approval from the appropriate approval authority (e.g., MAJCOM, depot). 2LM flights will limit repairs to:

5.9.3.1.1. CND or bench check serviceable (BCS) screening.

5.9.3.1.2. TCTO's performed at wing level.

5.9.3.1.3. LRU operational flight program (OFP) loads.

5.9.3.1.4. Shop-replaceable units (SRU) cross-CANNs.

5.9.3.1.5. Replacement of minor bits and pieces.

5.9.3.1.6. High priority TCTOs or other circumstances may result in more workload than can be accommodated under 2LM. In the event the section cannot accomplish the special workload as well as normal CND/BCS screening, the following formula may be used to identify those 2LM LRUs that could be temporarily "direct Not Repairable This Station (NRTS)" with-

out screening. The formula may also help determine LRU priorities in order to adjust workload to meet production. Index formula: Index Number = PBR * EXCHG PRICE * DDR.

5.9.3.1.6.1. LRUs with higher index numbers have a higher priority for repair compared to those with lower numbers. In the example below, the PSP would have the highest priority, followed by DMT. DFLCC may be a candidate to temporarily "Direct NRTS" until workload permits CND/BCS screening.

5.9.3.1.6.2. Review Percent of Base Repair (PBR), Exchange Price and Daily Demand Rate (DDR) quarterly to ensure the index reflects actual conditions.

NOUN	PBR*	EXCHG PRICE*	DDR	= INDEX
PSP	63	$33352.00	214412	450517348512
DMT	13	$16521.00	21451	4607095623
DFLCC	82	$6000.00	03148	1548816000

5.9.3.1.6.3. The index should be used as a guideline to assist production superintendents in workload prioritization. Consider local conditions, such as MICAPS, when determining actual production priorities.

5.9.4. Historical Records. Section NCOICs maintain AFTO IMTs 95 on selected, significantly repairable, serialized components for which historical failure data would enhance repair. Historical records are mandatory for SPRAM LRUs, and items asterisked in weapons system Dash-6 manuals. Historical records should be automated IAW TO 00-20-1.

5.9.4.1. Historical records are used as a source of historical performance. History is added as work progresses.

5.9.4.2. The record remains with the component anytime it is undergoing maintenance.

5.9.4.3. Data is provided from these records, upon request, to the analysis function to aid in defining avionics maintenance problems and recommended solutions.

5.9.5. Avionics Flights supporting 2LM, multiple MDS, and those organized under the combat support team structure are authorized to form functional sections below flight level to achieve efficiency and maintain effective span of control. ***NOTE***: Do not authorize additional manpower positions to form sections resulting from local management decisions.

5.9.5. **(ANG)** N/A to the ANG.

5.9.6. Flt CC/Chief Responsibilities. In addition to the common responsibilities listed in **Chapter 3** of this instruction, the Avionics Flt CC/Chief will:

5.9.6.1. Coordinate with maintenance leaders to develop procedures for accomplishing EW systems programming.

5.9.6.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Coordinates with maintenance supervision to develop procedures for accomplishing programming of EWS. This element develops maintenance procedures, in conjunction with the OG/CC, to accomplish programming of EWS to include secure voice, IFF and Data Link.

5.9.6.2. Ensure control and storage of assigned AME IAW AFI 21-103. Develop local procedures for control and storage of items not specified in Dash 21 TOs.

5.9.6.3. Ensure personnel do not make unauthorized or false transmissions on international distress frequencies IAW TO 31R2-1-251, *General Instructions-Transmission of False Distress Signals on Emergency Frequencies*.

5.9.6.4. Ensure cryptography components are controlled and maintained IAW National Security Agency and HQ USAF/XOI directives.

5.9.6.5. When applicable, determine maintenance responsibility for aircraft adapter group equipment.

5.9.6.6. Ensure central integrated test systems (CITS) central ground processors (CGP) are maintained. (B-1 units only)

5.9.6.7. Ensure accurate and timely pod and support equipment status is updated or verified daily in RAMPOD IAW AFI 21-103 Chapter 10.

5.9.6.8. Establishes procedures and ensures configuration control of all applicable software are both current (latest date) and correct for the application and use for which it is intended. Ensure technicians check Automated Computer Program Identification Number System (ACPINS) for software updates for assigned systems. A software sub-account will be established, allowing the shop/section access to the ACPINS. Software configuration control will be maintained IAW TO 00-5-16, Manual USAF Automated Computer Program Identification Number System (ACPINS) and TO 00-5-17, Users Manual USAF Computer Program Identification Numbering (CPINS) System.

5.9.7. Avionics Pro Super Responsibilities. If assigned, is responsible to the Flt CC/Chief for maintenance production. In addition to the general responsibilities in **Chapter 3** of this instruction, the avionics Pro Super will:

5.9.7. **(ANG)** LM Aero shall provide configuration control for software for the UAE F-16 block 60 aircraft. The RNAF maintenance liaison office shall provide configuration control for RNAF owned F-16 aircraft at the 178 FW.

5.9.7.1. Direct and control repair efforts by managing all repair assets and monitoring the repair team leaders actions.

5.9.7.2. Evaluate team leader and team member production skills, aptitude, and proficiency.

5.9.7.3. Perform and document production and supervisory inspections.

5.9.7.4. Ensure all assigned equipment is inspected, calibrated, and repaired, as required.

5.9.7.5. Assume repair monitor and team leader duties, if required.

5.9.8. Repair Monitor Responsibilities. Monitors the status of items processed into the section for repair. Each shift may have a repair monitor assigned. Maintain records used by the repair monitor according to AFMAN 37-123. Each Repair Monitor will:

5.9.8. **(ANG)** These responsibilities shall be performed/assigned by Avionics supervision.

5.9.8.1. Process items into and out of the section, ensuring all documentation is complete and correct.

5.9.8.2. Advise the section NCOICs, Pro Supers and team leaders of item status.

5.9.8.3. Assist the section NCOICs in managing the DIFM program by being familiar and complying with MAJCOM instructions to ensure ordered and received parts are documented; and uses, maintains and files, management and computer records. Maintain and update a working copy of the D-23, *Repair Cycle Asset Management Listing*, sorted by location and detail number.

5.9.8.4. Maintain an AWP section, ensure accurate documentation, and submit supply assistance requests, as required.

5.9.8.5. Track and monitor MICAP status for all assigned DIFM and parts affecting section repair capabilities using the automated SBSS Reports.

5.9.8.6. Ensure the MIS is updated with current supply data, location changes and DIFM status changes.

5.9.9. Team Leader Responsibilities. The first level, working supervisor in the avionics flight management structure. As the resource manager and senior technician for the repair team, the team leader is responsible, in coordination with the Pro Super, for all repair actions performed by their team. Team leaders will:

5.9.9. **(ANG)** These responsibilities shall be performed/assigned by Avionics supervision.

5.9.9.1. Ensure repair team members are qualified to perform assigned tasks.

5.9.9.2. Manage and direct work effort of the repair team, and is responsible for the quality of maintenance performed.

5.9.9.3. Ensure assigned equipment is properly maintained, repaired and calibrated.

5.9.9.4. In coordination with the Pro Super and section NCOIC, schedule and prioritize work for the repair team.

5.9.9.5. Ensure MIS data accurately reflects the current repair capabilities, reparable items status, and repair history. Also, advise the Repair Monitor of status and ETIC changes.

5.9.9.6. Monitor and update the D23 for their repair area. Sort this portion of the D23 by repair area (repair section code) and stock number.

5.9.9.7. When appropriate, perform production and supervisory inspections.

5.9.10. Communication-Navigation Section.

5.9.10.1. Performs off-equipment maintenance and/or CND screening on communication and navigation components and systems, including assigned SE not maintained by TMDE.

5.9.10.2. Maintains communications and navigation systems, components, and test equipment designated “user responsibility” in TO 33K-1-100. ***NOTE:*** When other test equipment, including contractor-maintained test equipment, requires calibration or repair, submit it to the TMDE IAW TO 33K-1-100.

5.9.10.3. Maintains radar altimeters, Mark XII systems (AIMS), IFF systems, direction finder equipment that is an integral part of airborne radios, secure voice systems, long range aids to navigation (LORAN), and global positioning systems.

5.9.10.4. Maintains typical COMM/NAV systems including high frequency (HF), ultra-high frequency (UHF), very high frequency (VHF), IFF, automatic direction finder (ADF), VOR/ILS, tatical air navigation (TACAN), AF satellite communication (AFSATCOM)/satellite communication (SATCOM), Cockpit Voice Recorder (CVR), Emergency Location Transmitter (ELT), secure voice, interphone, search/weather/doppler radars, radar/radio altimeters, global positioning satellite (GPS), Traffic Collision Avoidance System (TCAS), and associated data-bus management system components.

5.9.10.5. When authorized by MAJCOM, this section may perform on-equipment maintenance.

5.9.11. Radio Frequency (RF) Multiplexing Section.

5.9.11.1. Performs off-equipment maintenance on E-4B, E-6B, and RC-135 communication systems. Responsibilities include intermediate maintenance of Peacekeeper Airborne Launch Control System, MILSTAR, ARC-171 UHF Receiver/Transmitters, Pacer Link Phase II UHF Systems, AN/ARC 96/616A, and AFSATCOM.

5.9.12. Guidance and Control Systems (GCS) Section.

5.9.12.1. Performs off-equipment maintenance on guidance and control systems, to include automatic flight control systems, all-weather landing systems, attitude heading reference systems (AHRS), instrument systems, attitude reference and bombing systems, flight director systems, auxiliary flight reference systems, pressure altimeters and encoders of the AIMS systems, engine test cell aircraft instrumentation, inertial navigation systems (INS), and navigation computers.

5.9.12.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Performs on/off equipment maintenance on guidance and control systems, to include automatic flight control systems, all-weather landing systems, AHRS, instrument systems, attitude reference and bombing systems, flight director systems, auxiliary flight reference systems, pressure altimeters and encoders of the AIMS systems, engine test cell aircraft instrumentation, INS, and navigation computers. GCS must ensure the calibration and repair of torque wrenches when not performed or maintained by PMEL, when approved by the 562 CBSG (formerly AFMETCAL Det 1).

5.9.12.2. Maintains compass and stability augmentation systems (SAS), weapons release computer systems (WRCS), flight data recorders (FDR), maintains fuel savings advisory systems (FSAS), Malfunction, Detection, Analysis and Recording Subsystem (MADAR), Doppler systems, navigational computers, loads environment spectra survey (LESS) recorder systems, ground proximity warning systems (GPWS), and assigned SE not maintained by TMDE flight.

5.9.12.3. Maintains engine test cell aircraft instrumentation and test equipment designated “user responsibility” in TO 33K-1-100. (When other test equipment, including contractor-maintained test equipment, requires calibration or repair, submit it to the TMDE Flight IAW TO 33K-1-100.) Performs off-equipment maintenance and/or CND screening on guidance and control components and systems to include assigned SE not maintained by TMDE.

5.9.12.4. Maintains typical GCS including automatic flight control, compass, flight director, attitude heading reference, stability augmentation, air data, flight/engine instruments, fuel/liquid quantity instruments, flight recorders, inertial navigation, flight management, and associated data-bus management system components.

5.9.12.5. When authorized by MAJCOM, this section may perform on-equipment maintenance.

5.9.13. Weapons Control System Section.

5.9.13.1. Maintains aircraft weapons control systems, lead computing optical sight systems and assigned SE not maintained by TMDE. This section also performs on-equipment calibration of weapons control systems.

5.9.14. Sensors Section.

5.9.14.1. Performs off-equipment maintenance of sensor systems and associated support equipment not maintained by TMDE.

5.9.14.1. **(ANG)** This function may be assigned to Avionics Element or AMXS depending on MDS.

5.9.14.2. Maintains pod histories, pod statistics in RAMPOD, and scheduling records, and AN/AAS-35 Pave Penny Target Identification Set Laser (TISL) systems.

5.9.14.3. Maintains and operates airborne videotape recorder (AVTR), Cockpit Television Sensor (CTVS), Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) pods and systems, LANTIRN Mobility Shelter Set (LMSS), Forward Looking Infrared Radar (FLIR), Downward Looking Infrared Radar (DLIR), and Infrared Acquisitions/Designation System (IRADS).

5.9.15. Electronic Warfare System (EWS) Section.

5.9.15.1. Performs on- and off-equipment maintenance on aircraft EWS and components, including assigned SE when not maintained by TMDE.

5.9.15.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Electronic Warfare (EW) Shop performs on- and/or off-equipment maintenance, depending on MDS, on RWR, chaff/flare dispensers, ECM systems. These EWS may be either internally or pod mounted in or on the aircraft. EW personnel ensure all classified EWS and TMDE are properly stored, transported, and controlled. If the EW workload is sufficiently small, the MXG/CC may assign this workload and associated manpower to another section/shop. EW personnel may be tasked to load chaff/flare IAW **Chapter 13**.

5.9.15.2. Maintains EWS status, EWS histories on AFTO IMT 95 and scheduling records.

5.9.15.3. Reports Electronic Attack (EA) pod status in RAMPOD, if maintaining EA pod equipment. Reports other EWS status IAW TO 00-20-1 and TO 00-20-2.

5.9.15.4. Stores and controls non-installed EA pods according to applicable directives. Other removed EWS components are controlled IAW TO 00-20-3.

5.9.15.5. Manages CANN actions to ensure pods are returned to service, at a minimum, every time the Preventive Maintenance Inspection (PMI) is due.

5.9.15.6. Maintains inventory control of EWS AME. Loads proper contingency and training configuration settings in ECM pods, infrared countermeasures systems and RWR unless equipment/responsibility is assigned to another repair section.

5.9.15.7. Develops an EWS assessment program to verify system operation IAW applicable aircraft and system TOs.

5.9.15.8. Maintains aircraft adapter group equipment when directed.

5.9.15.9. Loads proper contingency and training software in reprogrammable EWS IAW applicable system TOs and AFI 10-703.

5.9.15.10. Performs avionics/electronic warfare systems (to include electronic attack pods) reprogramming as required by applicable mission directives, PACER WARE/SERENE BYTE messages, or TCTO requirements.

5.9.16. B-52 Electronic Warfare System Section.

5.9.16.1. Maintains inventory control and storage of EWS AME.

5.9.16.2. Performs alignments and operational checks of ALT-28 Delta and India band transmitter AME.

5.9.16.3. Loads contingency and training configuration settings provided by MAJCOM or wing EWO.

5.9.16.4. Performs emergency and routine reprogramming of ALQ-155/Sensor Integration, ALQ-172, ALR-46 systems. Performs ALQ-155 Control Indicator Programmer (CIP) alignment and checkout.

5.9.16.5. Maintains the ALQ-153, ALQ-172, and ALQ-155/AME hot mockups and associated test equipment.

5.9.16.6. Performs EW LRUs CND screening.

5.9.16.7. Performs periodic ALQ-172, ALQ-155, ALQ-122 and ALR-46 EW systems USM-464 End-to-End testing IAW applicable TOs.

5.9.16.8. Maintains USM-464 Test Set and associated test equipment.

5.9.16.9. Performs electronic warfare portion of aircraft phase inspections, as required.

5.9.17. Avionics Intermediate Section.

5.9.17. **(ANG)** Avionics Intermediate Shop (AIS) must ensure the calibration and repair of torque wrenches when not performed or maintained by PMEL, when approved by the **562 CBSG.**

5.9.17.1. Maintains, programs and performs TCTOs on avionics components specific to assigned test stations and support equipment.

5.9.17.2. Maintains, calibrates, certifies and performs TCTOs on assigned SE not maintained by TMDE.

5.9.18. Computer Section.

5.9.18.1. Performs on and off-equipment maintenance of the E-3 Mission Computer system.

5.9.18.2. Performs on-equipment maintenance of the E-3 Mission Simulators (MSIM) and the Facility for Interoperability Testing (FIT) to include the Joint Tactical Information Distribution System (JTIDS).

5.9.18.3. Maintains the Data Display Training Set (DDTS).

5.9.18.4. Accomplishes maintenance on assigned SE not maintained by TMDE.

5.9.19. Surveillance Radar Section.

5.9.19.1. Performs on and off-equipment maintenance of the E-3 Surveillance Radar and Mission IFF system.

5.9.19.2. Maintains related Special Test Equipment used by the AMU and other maintenance squadron sections.

5.9.19.3. Maintains Surveillance Radar Hot Mock-up.

5.9.20. Combat Systems Section.

5.9.20.1. Consists of Computer Maintenance and EWS.

5.9.20.2. Performs both on and off-equipment maintenance of the EC-130H PME and the mission support facility.

5.9.20.3. Performs off-equipment maintenance on the Compass Call Mission Simulator (CCMS) PME.

5.9.20.4. Receives service by the FX supply system and does not receive automated supply products for items processed by the FX system. Management programs requiring FX supply data are exempt from these requirements; however, the section complies with those portions of the programs where data may be locally derived.

5.9.21. Cryptographic Section.

5.9.21.1. Performs on and off-equipment maintenance on RC-135 and E-4B aircraft cryptographic systems and associated equipment.

5.9.21.2. Aircraft-installed Controlled Cryptographic Items (CCI) and keying materials shall be handled IAW AFI 21-109, *Communications Security COMSEC Equipment Maintenance and Maintenance Training*; AFI 33-211, *Communication Security (COMSEC) User Requirements*; AFI 33-212, *Reporting COMSEC Deviations*; and AFMAN 23-110. Document aircraft CCI removal and installation in AFTO Form/IMT 781B, **Communication Security Equipment Record**, IAW TO 00-20-1.

5.9.22. Offensive Avionics Section.

5.9.22.1. Maintains offensive avionics systems and associated support equipment.

5.9.22.2. Performs off equipment maintenance on limited AVTR system maintenance (e.g., cleaning and demagnetizing heads; aligning remote control units), AN/ASW-55 Data Link Pod.

5.9.22.3. Performs off equipment maintenance on LRU not coded for 2LM repair for AN/ASQ-176 Offensive Avionics Systems (OAS), AN/APQ-166 Strategic Radar (SR), and AN/ASQ-151 Electro-optical Viewing System (EVS).

5.9.22.4. Performs maintenance and calibrations for AN/APM-440 Radar Test Set (RTS), AN/ASM-661 Transmitter/Modulator Assembly Test Set (TMATS), AN/ASM-470 STV camera and FLIR scanner test set, and AN/ASM-691A Data Link Pod test set.

5.9.22.5. Performs classified purge operations on circuit cards requiring declassification and performs Demagnetizer (P/N 3000-6) maintenance and calibration. (2d Bomb Wing only).

5.10. Fabrication Flight. Responsible for structural maintenance, metals technology, survival equipment and non-destructive inspection (NDI).

5.10. (ANG) N/A to the ANG. The following only applies to the ANG: This activity is responsible for modification, corrosion control, local manufacture, inspection, and repair of aircraft and SE beyond the owning workcenters capabilities. Fabrication is organized into the following functions: Aircraft Metals Technology, Aircraft Structural Maintenance, and Nondestructive Inspection (NDI).

5.10.1. Flt CC/Chief Responsibilities. In addition to the common responsibilities outlined in **Chapter 3** of this instruction, the Flt CC/Chief will:

5.10.1.1. Provide sufficient local manufacture capability to meet mission requirements and monitor all local manufacture work order requests.

5.10.1.2. Coordinate AGE welding requirements with the AGE Flight Chief. AGE and Fabrication Flight Chiefs will determine the repair action for AGE welding requirements not covered by end item TOs. Safety determinations are made by the Fabrication Flight Chief.

5.10.1.3. Develop procedures to ensure assigned survival equipment specialists are trained and certified on thermal protective devices and shields IAW **Chapter 14** of this instruction.

5.10.2. Aircraft Structural Maintenance (ASM) Section. Manages structural repair, corrosion control, composite repair, and low observable (LO) coatings.

5.10.2.1. Provides inspection, damage evaluation, repair, manufacture, and/or modification of metallic, composite, fiberglass, plastic components, and related hardware associated with aircraft and SE.

5.10.2.2. Designs and constructs special forming jigs and dies. Ensures special jigs, dies and forming tools are protected to prevent damage.

5.10.2.3. Repairs honeycomb panels, skin stressed dome antenna panels, dome antennas, radomes, metal-bonded, and composite materials.

5.10.2.4. Manufactures metal tubing, conduits, and cables IAW drawings and specifications.

5.10.2.5. Stocks supplies and equipment to support aircraft and equipment washing, inspection, and treatment.

5.10.2.6. In addition to common section NCOIC responsibilities in **Chapter 3** of this instruction, the ASM section NCOIC will:

5.10.2.6.1. Ensure appropriate resources are available to all personnel to chemically or mechanically inspect, remove, and treat corrosion on aircraft, engines, AGE, and components.

5.10.2.6.2. Monitor the washing and corrosion inspection schedule in the weekly and monthly maintenance plans.

5.10.2.6.3. Ensure protective/LO coatings are applied to aircraft, AGE, applicable munitions, and components IAW applicable TOs and local, state and federal environmental directives.

5.10.2.6.4. Provide training and assistance to sections managing their own corrosion programs to include cleaning operations, corrosion prevention, inspection, removal and treatment techniques.

5.10.2.6.5. Ensure corrosion control requirements, to include wash rack procedures, are accomplished IAW AFI 21-105, MAJCOM instructions, and MDS-specific TOs.

5.10.2.6.6. Ensure personnel are rotated to maintain currency in all aspects of the career field (e.g., coating application and removal; Radar Absorbent Materiel (RAM) application and removal; insignia and markings; structural repair competency).

5.10.2.6.7. Develop procedures to ensure assigned ASM personnel are trained and qualified on aircraft intake maintenance.

5.10.2.6.8. Functions as the focal point for the QPL. Review the QPL monthly for changes concerning Mil-Spec approved cleaners for assigned aircraft and equipment and notify Operations Officer/MX SUPT, aircraft wash rack, support sections, and MXS Flt CC/Chiefs of significant changes.

5.10.2.6.8.1. The QPL identifies qualified products (i.e., cleaners, paints, etc.) within a particular Mil-Spec and are the only approved materials for use on AF aircraft, subsystems, and support equipment.

5.10.2.6.8.2. Products not listed on the QPL are unauthorized and will not be used. Additional QPLs can be located at the following AF Corrosion Prevention and Control Office web site: **https://afcpco.robins.af.mil/**.

5.10.2.6.8.3. For units with contracted wash operations, notify the Administrative Contracting Officer (ACO) of changes to the QPL. The ACO will notify contractors of changes to the QPL. QAEs will ensure only approved materials are used.

5.10.3. Metals Technology Section. Inspects, repairs, services, manufactures, fabricates, performs heat treating, cleans, welds, and tests aircraft and equipment, components, and tools. In addition to responsibilites outlined in **Chapter 3**, the metals technology section NCOIC will:

5.10.3.1. Ensure assigned welders are certified and maintain proficiency IAW TO 00-25-252, *Certification of USAF Aircraft and Missile Welders,* and MAJCOM instructions.

5.10.3.2. Provide and enforce the use of required safety devices. Provide safety briefings stressing arc radiation hazards.

5.10.3.3. Ensure proper materials are selected for local manufacture.

5.10.3.4. Observe machine tool set-up procedures, machine cutting operations, operations performed by hand, and general machine section operations, such as bench assembly, fitting, and adjusting machine parts.

5.10.3.5. Ensure special tools, jigs, and fixtures are designed, fabricated, protected and properly stored.

5.10.4. Survival Equipment Section. Inspects, repairs, manufactures, packs and re-packs fabric, canvas, leather, survival equipment, rubber products, recovery and drogue parachute systems for both personnel and aircraft, as well as flotation equipment, protective equipment, emergency evacuation systems, and associated subsystems. ***NOTE***: Inspection and maintenance of cargo extraction and drop parachutes is performed by aerial port activities. ***EXCEPTION***: For units where AFSC 2A7X4 is not authorized, the MXG/CC or designee establishes alternate support arrangements.

5.10.4.1. The section is not responsible for ordering forecasted life sustaining TCIs. However, if life sustaining equipment is in for maintenance and discrepancies are found, order the necessary bits and pieces to repair the unit regardless if the item is a TCI or not.

5.10.4.2. Inspects safety belts and harnesses. Evaluates the extent of damage and wear to material and equipment IAW TOs.

5.10.4.3. Manufactures, inspects, cleans, and packages aircraft thermal radiation barriers/curtains IAW **Chapter 14** of this instruction.

5.10.4.4. Repairs aircraft soundproofing materials.

5.10.4.5. Coordinates with squadron aircrew life support sections to determine support and workload requirements. Aircrew life support policies and procedures are found in AFI 11-301 v1, *Aircrew Life Support (ALS) Program* and aircraft installed ALS equipemnt requirements are found in AFI 11-301 v2, *Maintenance and Configuration Requirements for Aircrew and Aircraft Installed Life Support Equipment*

5.10.4.6. Inspects, repairs and modifies protective clothing and equipment IAW TOs.

5.10.4.7. Validates AFTO Form 391, **Parachute Log**, AFTO IMT 392, **Parachute Repack, Inspection and Component Record,** and applicable flotation equipment forms for accuracy.

5.10.4.8. Ensures maintenance, inspection, and repair capability exists for maintaining aircrew survival equipment (personnel and recovery parachutes, flotation equipment, and protective clothing) through procurement of expendable repair parts. Establish special stock levels to support the repair and replacement of parts for anti-exposure suits. Sub-items may be salvaged/removed from an end item and returned to stock only IAW established/applicable TOs.

5.10.4.9. Repairs and modifies flight clothing and other aircrew life support equipment IAW applicable technical data. ***NOTE***: Clothing owners are responsible for attachment of velcro, patches, and rank insignia.

5.10.4.10. Performs maintenance on sewing machines.

5.10.4.11. Repairs 463L cargo nets, if applicable.

5.10.4.12. In addition to the common section NCOIC responsibilities outlined in **Chapter 3**, the survival equipment section NCOIC will establish a 6-month recurring training program on infrequently maintained systems (e.g., ACES II drogue chute) to ensure personnel are proficient.

5.10.5. NDI Section. Performs NDI of aircraft, engines, AGE, other equipment and manages the Oil Analysis Program (OAP). Inspection findings are limited to a description of the size, location, and type of any defect discovered. NDI personnel do not make serviceability determinations except for "inspect only" TCTOs and if NDI actions constitute a completed maintenance action.

5.10.5. **(ANG)** Propulsion section supervisor is the primary OAP Manager.

5.10.6. If the assigned MDS has an OAP requirement refer to AFI 21-124 and MAJCOM guidance.

5.10.7. In addition to the common section NCOIC responsibilities outlined in **Chapter 3** of this instruction, the NDI section NCOIC will:

5.10.7.1. Ensure capability exists to perform optical, dye-penetrant, magnetic particle, ultrasonic, eddy current, radiographic and special inspections as required.

5.10.7.2. Ensure process control procedures IAW TO 33B-1-1, *Nondestructive Inspection Methods, Basic Theory*, and other directives are completed at the required or established frequency.

5.10.7.3. Establish technique files using AFTO IMTs 242, **Nondestructive Inspection Data**, and TO 33B-1-1. ***NOTE***: Locally developed inspection techniques for use on aircraft and their components must be approved by the responsible ALC NDI manager prior to use. All other non-aircraft related AFTO IMTs 242 may be approved by the lab chief.

5.10.7.4. Maintain liaison with the base medical service who provides occupational physicals, emergency treatments, film badge services, and acts as radiographic advisors IAW AFI 48-125, *The USAF Personnel Dosimetry Program*, and TO 33B-1-1.

5.10.7.5. Ensure a Radiation Safety Program is established IAW TO 33B-1-1.

5.10.7.6. Control and dispose of radiographic silver-bearing material IAW AFMAN 23-110. Coordinate with the base medical, photo facilities, and/or other base industrial radiography work centers to prevent duplication of disposal effort.

5.10.7.7. Ensure radiographic film files contain, as a minimum:

5.10.7.7.1. The last complete set of radiographs for each assigned aircraft and engine by serial number or identification (ID) number. Annotate the name of the person who interpreted the film. ***NOTE:*** Film identification procedures will be followed IAW TO 33B-1-1. Ensure the person interpreting the film also initials the set of radiographs or a locally developed interpretation worksheet, as applicable.

5.10.7.7.2. All NDI radiographic film exposures, to include paper and will be filed and maintained for all OTI, TCTO, Dash 6, Dash 9, and Dash 36 TO inspection requirements. Disposition of radiographic film will be IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil**

5.10.7.8. For contracted NDI sections, contractor personnel must be qualified and certified IAW National Aerospace Standard (NAS) 410, *NAS Certification and Qualification of Nondestructive Test Personnel.*

5.11. Maintenance Flight. Normally consists of Repair and Reclamation (R&R), Wheel and Tire (W&T), Inspection, Refurbishment, and Transient Alert (TA) sections.

5.11. (ANG) The Maintenance Flight is not used except for the 116 ACW and 153 AW, however, sections duties are located as noted in subparagraphs.

5.11.1. Flt CC/Chief Responsibilities. In addition to the common responsibilities outlined in **Chapter 3** of this instruction, the Maintenance Flt CC/Chief will:

5.11.1.1. Ensure compliance with CDDAR program responsibilities IAW **Chapter 14** of this instruction.

5.11.1.2. Monitor the refurbishment process flow plan (if required by assigned MDS).

5.11.2. R&R Section. Removes, replaces, and rigs flight control surfaces/systems on assigned aircraft. Troubleshoots, rigs, and replaces landing gears, actuated doors, canopies and associated equipment requiring component maintenance beyond the capability of other activities.

5.11.2. **(ANG)** These duties will be accomplished by the Inspection Section.

5.11.2.1. When directed by the MXG/CC, establishes specialized maintenance rig teams to accomplish flight control, canopy, landing gear, door systems, and other systems rigging.

5.11.2.1.1. These teams contain personnel trained on each particular system. Each team may participate in flight crew debriefing, troubleshooting, repairing, or replacing components as necessary.

5.11.2.1.2. When dispatched as a team to troubleshoot CND, repeat/recur, and FCF discrepancies, document all items inspected, tested, removed, or replaced in AFTO Form/IMT 781A and MIS.

5.11.2.1.3. Reviews corrective actions prior to final release of the aircraft.

5.11.2.2. If required, removes, installs, and repairs towed-targets and airborne reel pods.

5.11.2.3. Performs CDDAR responsibilities IAW **Chapter 14**, when assigned.

5.11.2.3. **(ANG)** CDDAR duties will be assigned by the MXG/CC.

5.11.2.4. Wheel and Tire (W&T) Section. Manages build-up, repair, test, and storage of wheel and tire components.

5.11.2.4. **(ANG)** These duties will be accomplished by the Inspection Section.

5.11.2.5. If a supply point for built-up W&Ts is set up in the shop, DIFM processing procedures are used. Send issue and turn-in documents to the repair cycle support unit.

5.11.2.6. Degreases and disassembles wheel components for NDI inspection IAW TO 4W-1-61, *Maintenance and Overhaul Instruction - All Types Aircraft Wheels*, prior to processing through corrosion and the NDI laboratory.

5.11.2.7. Cleans, inspects, and properly stores (do not co-mingle) wheel bearings.

5.11.2.8. Inspects and maintains safety equipment (e.g., wheel cages).

5.11.3. Aircraft Inspection Section. Performs aircraft phase, periodic, isochronal or Letter Check inspections. May perform pre-flights, basic post-flights, hourly post-flights, thru-flights, TCTOs, home station checks, and refurbishments. Prepares aircraft for FCF, if required**.** ***NOTE*:** Units maintaining multiple weapon systems, the section may be divided into separate elements for each type aircraft maintained.

In addition to the general responsibilities in **Chapter 3** of this instruction, the inspection section NCOIC will:

5.11.3. **(ANG)** This section is located in Equipment Maintenance (EM).

5.11.3.1. Ensure assigned non-powered SE (e.g., dock stands) is maintained.

5.11.3.1. **(ANG)** If applicable.

5.11.3.2. Appoint dock supervisors and coordinators as required.

5.11.3.3. Review inspection schedules and ensure dock teams are available to meet inspection needs.

5.11.3.4. Ensure specialists are controlled by the inspection section when they are performing maintenance in the docks. Coordinate with MOC and/or Pro Super when specialist support is required.

5.11.3.4. **(ANG)** At MXG/CC option, full time specialists may be assigned to the Inspection Section.

5.11.3.5. Develop standardized inspection flow plan to aid in managing the inspection progress and to control dock personnel and support specialists. Units may use an Automated Data System (ADS) instead of the inspection flow plan to request specialist support. Ensure flow plan data remains current with Dash 6 TO requirements.

5.11.3.6. Utilize a status board or MIS display to track in-progress and scheduled inspections from the weekly flying and maintenance schedule. Ensure the staus board/MIS displays the following information:

5.11.3.6.1. Aircraft type.

5.11.3.6.2. Aircraft serial number.

5.11.3.6.3. Inspection type and when due (sequence).

5.11.3.6.4. Scheduled in (date and time).

5.11.3.6.5. Actual start (date and time).

5.11.3.6.6. Scheduled out (date and time).

5.11.3.6.7. Aircraft crew chief and assistant crew chief names and duty phone.

5.11.3.6.8. Remarks (status of aircraft, delays, possible MICAP conditions, etc.).

5.11.3.6.9. Safety/danger considerations (power/hydraulic applications, stress panels removed, aircraft on jacks, W&B, etc.)

5.11.3.7. Ensure the Dock NCOIC complies with post dock review procedures upon inspection completion.

5.11.3.8. Ensure all discrepancies discovered during the inspection are documented IAW TO 00-20-1.

5.11.3.9. Ensure TOs, inspection work cards, and WUC manuals/checklists are current and properly maintained. In coordination with MOF PS&D, ensure changes to inspection work cards are updated on the Job Standard Master Listing.

5.11.3.10. Inform the MOC and owning agency of all parts backordered MICAP.

5.11.3.11. Provide PS&D Sections with an inspection document record upon completion of the inspection.

5.11.3.12. Ensure components are tagged with an AFTO Form 350, **Reparable Item Processing Tag**, when they are removed from the aircraft.

5.11.3.12.1. As a minimum, include the aircraft ID, component position, and serial number (if serially controlled).

5.11.3.12.2. To prevent invalidating historical records, ensure serially controlled components are reinstalled on the same aircraft and position from which they were removed. ***EXCEPTION***: If it is absolutely necessary to install serially controlled components in a different position, notify the PS&D Section to update the records.

5.11.3.12.3. When it is not practical to tag individual items such as access panels, an AFTO Form 350 or other suitable means of identification may be used if the items are identified and stored together in a secure storage area and/or rack. The applicable storage area and/or rack must have the aircraft serial number clearly displayed.

5.11.4. Refurbishment Section. When established, performs interior and exterior refurbishment of assigned aircraft. Wings have the option to align the refurbishment section under either the fabrication flight or the maintenance flight. Refurbishment will be accomplished IAW applicable TOs. In addition to the responsibilities outlined in **Chapter 3** of this instruction, the refurbishment section NCOIC will develop a flow plan to provide positive control of the refurbishment process inspection and fix phases.

5.11.5. Transient Aircraft Maintenance Section. When assigned, recovers, services, inspects, maintains, and launches transient aircraft. Procedures in this section apply to military, contract, and civil service transient maintenance functions. Transient aircraft are those aircraft not assigned to a base that are en route from one location to another that may require routine servicing. Aircraft are not considered transient aircraft when deploying to or staging from a base for the purpose of flying sorties or conducting training with a squadron assigned to the base, with or without the necessary maintenance support from the home base. MOC coordinates specialist support for transient aircraft through appropriate squadrons.

5.11.5.1. Recovers and delivers all deceleration chutes for assigned, transient, and tenant aircraft to the survival equipment section.

5.11.5.2. Performs maintenance IAW TO 00-20-1 and completes reimbursement documentation. AF IMT 726, **Transient Aircraft Service Record**, may be used for documenting maintenance servicing requirements and necessary billing information.

5.11.5.3. Record arrivals and departures of transient aircraft on AF IMT 861, **Base/Transient Job Control Number Register**.

5.11.5.3.1. Each aircraft may be assigned a single Event Identification Description (EID) for all support general work performed by TA.

5.11.5.3.2. As a minimum, enter “P” for park, “I” for inspect, “S” for service, “L” for launch, and “E” for EOR in the job description/remarks block.

5.11.5.3.3. Contract transient alert activities will forward completed AF IMTs 861 to the QAE monthly. QAEs will forward completed forms to the applicable contracting officer managing the TA contract for inclusion in the contract file.

5.11.5.3.4. Blue-suit transient alert activities will route the AF IMT 861 to the Maintenance Flt CC/Chief for review.

5.11.5.3.4.1. After review, AF IMTs 861 are returned to the TA section and filed for a minimum of 1 year. Dispose of AF IMT 861 IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil/** AF IMT 861 may be used to validate manpower requirements against current AF manpower standards. Contact the wing manpower office for more information.

5.11.5.4. Closes out support general EIDs daily.

5.11.5.4.1. Use the same last four digits on subsequent days for the same aircraft.

5.11.5.4.2. Use a separate EID for each discrepancy that is not support general.

5.11.5.5. When a FCF is required on transient aircraft, QA at the transient base serves as the focal point and ensures all FCF requirements are completed.

5.11.5.6. In addition to the responsibilities outlined in **Chapter 3** of this instruction, the TA section NCOIC will:

5.11.5.6.1. Supervise all maintenance performed by assigned personnel on transient aircraft.

5.11.5.6.2. Ensure TOs needed for the section are properly maintained. The scope and depth of the file are based on current mission requirements. As a minimum, maintain the appropriate TOs for aircraft that can be expected to transit the function on a regular basis.

5.11.5.7. Ensure personnel are trained and strictly adhere to oil sample requirements specified in the respective Dash 6 TO.

5.11.5.8. Ensure personnel authorized to run engines are qualified IAW **Chapter 14** of this instruction. Request the aircrew run engines if TA or maintenance personnel are not authorized. If qualified aircrew members are not available, contact MOC to request assistance from the home station.

5.11.5.9. Ensure transient aircraft status changes are reported to MOC. If support is required, the MOC notifies the home station for support.

5.11.5.10. Ensure EOR procedures for transient aircraft are developed IAW TO 00-20-1 and MAJCOM directives.

5.11.5.11. Ensure procedures exist for required weapons loading actions on transient aircraft, transient aircraft impulse cartridge storage, and weapons safing equipment requisition and maintenance for frequently transiting aircraft.

5.11.5.11.1. Arming, de-arming and munitions unloading/loading operations on transient aircraft may be performed by any weapons load crew certified/qualified on the munitions and aircraft.

5.11.5.11.2. The MXG/CC may direct the load standardization crew (LSC) to arm, de-arm, and unload an aircraft on which they are not certified/qualified, if appropriate technical data and support equipment is available. In such cases, the aircrew should be available for consultation on aircraft peculiarities. If these criteria cannot be met, request assistance from higher headquarters.

5.11.5.11.3. Local procedures will be developed to control impulse cartridges removed from transient aircraft.

5.11.5.12. Ensure checklists exist to ask pilots about explosive egress systems pertaining to aircraft that do not normally transit their base.

5.12. Munitions Flight. Controls, accounts for, stores, ships/receives, inspects, maintains, assembles, and delivers conventional, precision guided and nuclear munitions. Manages and maintains all assigned tools, test and munitions handling equipment. Munitions flights are typically composed of three sections: production, materiel and systems. Refer to AFI 21-2XX series instructions for specific guidance. ***NOTE:*** Munitions may be part of the MXS or established in a munitions squadron IAW AFI 21-201.

5.12. (ANG) Munitions. N/A to the ANG. The following only applies to the ANG: This function is located in EM. Responsible for the control, accountability, storage, shipping and receiving, inspection, maintenance, assembly and delivery of conventional and precision guided munitions. Munitions manages and maintains all assigned tools, test, and munitions handling equipment. It also administers and operates the Combat Ammunitions System (CAS). Munitions is typically composed of three sections: Materiel, Production, and Systems. Munitions supervisor, in coordination with QA, shall develop quarterly standards. Coordinate with the MXG/CC to establish unit procedures to reconcile training munitions issued for requirements in accordance with IAW AFI 36-2217, *Munitions Requirements for Aircrew Training.*

5.12.1. **(Added-ANG)** Units must develop and be capable of implementing backup procedures to maintain accountability in event of system failure or power loss.

5.12.2. **(Added-ANG)** Ensures approval of LMME IAW AFI 21-101 Paragraph **5.8.6.6.**

5.12.3. **(Added-ANG)** Munitions Control (M/C). M/C shall use visual aids to provide access to critical data IAW AFI 21-201. IMDS/G081 is the primary system used in the Munitions organization to manage inspection intervals, maintenance and inspection history, condition/status, and work performed on al MMHE, MTS and associated equipment.

5.13. Propulsion Flight Maintains aircraft engine propulsion units, propulsion components, and propellers. Performs engine/module/accessory disassembly, assembly, test, and repair. Responsible for Jet Engine Intermediate Maintenance (JEIM); test cell and noise suppression systems (NSS); accessory and quick engine change (QEC) repair; small gas turbine; module/ accessory repair section; engine support equipment; and turbo-prop/turbo-shaft repair, engine isochronal/phase inspections, as required. Sections may be combined or grouped at the discretion of the MXS/CC. Programs such as engine regionalization and 2LM may affect the standard organizational structure and responsibilities. Flights repairing engines under 2LM will normally do “retained tasks” only. In addition, the flight will be the focal point for common propulsion support equipment i.e., flexible borescopes, engine download equipment.

5.13. (ANG) N/A to the ANG. The following only applies to the ANG: Propulsion maintains aircraft engine propulsion units, propulsion components, and propellers to include composite propeller blades. Propulsion is located in CM. Performs engine/module/accessory disassembly, assembly, test, and repair. Has responsibility for JEIM; test cell and NSS; accessory and QEC repair; small gas turbine; module/ accessory repair section; engine support equipment; and turbo-prop/turbo-shaft repair, engine isochronal/ phase/HSC inspections, as required. These sections may be combined or grouped at the discretion of the MXG/CC. Programs such as engine regionalization and 2LM may affect the standard organizational structure and responsibilities.

5.13.1. Flt CC/Chief Responsibilities. In addition to common responsibilities in **Chapter 4** of this instruction, the Flt CC/Chief will:

5.13.1.1. Perform as the wing focal point for propulsion maintenance programs, focusing on continuity, compliance and standardization. Provide advice to wing leadership on propulsion issues and monitor all aspects of wing propulsion maintenance program.

5.13.1.2. Act as the wing 2A6X1 AFSC functional manager, providing technical guidance to maintain propulsion systems to support the wing mission.

5.13.1.3. Review production data to ensure propulsion units and components processed through the flight are repaired and functionally checked IAW established flow times, including QEC configuration when applicable.

5.13.1.4. Coordinate with the engine manager to ensure accurate engine and equipment status reporting.

5.13.1.5. Provide JEIM regional repair (QUEEN BEE), engine regional repair center (ERRC), and/or Centralized Intermediate Repair Facilities (CIRF) support to other organizations, when directed.

5.13.1.6. Develop guidelines to comply with AF and wing OAP requirements IAW 33 series TOs and AFI 21-124.

5.13.1.7. Determine kit requirements for recurring maintenance actions, if applicable. Kits are pre-assembled from bench stock, in minimum quantities necessary to support workload requirements. Repair cycle assets are not included in kits. Unused kit items will be returned to bench stock.

5.13.1.8. Review/analyze all unscheduled engine or module removals and test cell rejects.

5.13.1.8.1. Review/analyze major component failure trends.

5.13.1.8.2. Provide advice to the MXG/CC's ET&D program, as required.

5.13.1.9. Ensure CANN actions for in-shop, flightline and deployed locations are accomplished IAW local procedures, **Chapter 11** and **Chapter 14** of this instruction and TO 00-20-2. Coordinate with the Engine Management (EM) section to ensure sufficient time remains on TCIs prior to CANN action approval.

5.13.1.10. Coordinate with EMS and/or base civil engineering to provide maintenance on NSS and engine test cells. If the wing or squadron is a tenant, incorporate this maintenance requirement into the host-tenant support agreement. Ensure an uninstalled engine run qualification/certification program is established IAW **Chapter 14** of this instruction.

5.13.1.11. Establish a forecast list of supplementary part requirements based on a review of repair documentation for the preceding 6 months and ensure adequate stock of the items are available as applicable to the MDS.

5.13.1.12. Ensure specialized and long life shipping devices and containers are accounted for and maintained in a serviceable condition IAW AFMAN 23-110 and TO 00-85-20, *Engine Shipping Instructions*.

5.13.1.13. Ensure engines and engine components removed from crash damaged aircraft are disposed of IAW AFMAN 23-110.

5.13.1.14. Determine if pre-maintenance test cell runs are required for all engines removed.

5.13.1.15. Designate qualified personnel as bearing inspectors, if applicable.

5.13.1.16. Ensure an engine flexible borescope certification and blade-blending certification program, for each Type, Model, Series and Modification (TMSM) possessed, is established IAW **Chapter 14** of this instruction.

5.13.1.16. **(ANG)** And rigid borescope.

5.13.1.17. Track the status of ready spare engines using a visual display or automated product showing: serial number, configuration (type and position, if applicable), time remaining until next

scheduled engine removal, overhaul or reconditioning, preservation date, type accomplished, re-preservation due date, Oil Analysis Program (OAP) code (if applicable), and remarks.

5.13.1.18. Coordinate with MOF EM section to program engine removals for the weekly and monthly maintenance plans. Scheduled and unscheduled engine removals are important considerations in balancing propulsion flight workload with production capability. The Flt CC/Chief and MOF EM develop a 6-month plan to smooth surges in the engine maintenance workload.

5.13.1.18.1. Use automated methods to develop the 6-month plan and include scheduled engine removals for TCIs, Periodic (PE) Inspections and TCTOs. Include a factor for projected unscheduled removal.

5.13.1.19. Ensure Reliability Centered Maintenance (RCM) principles are followed.

5.13.1.20. **(Added-ANG)** Ensure APUs are tested, maintained and monitored.

5.13.1.21. **(Added-ANG)** Comply with the provisions of **Chapter 14** for the Engine Run program.

5.13.2. OAP. Accurate oil sampling determines the internal condition of engines and accessories. Coordinate with the OAP laboratory to obtain maximum benefits from OAP data when abnormal wear-metal trends are indicated.

5.13.2.1. If required, the Propulsion Flt CC/Chief will:

5.13.2.1.1. Ensure all OAP responsibilities are performed IAW AFI 21-124.

5.13.2.1.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: As the primary OAP Manager ensures all OAP responsibilities are performed IAW AFI 21-124 and ANGI 21-105. Is the POC for SEM/EDX and Magnetic Chip Detector Program (MCDP), as applicable.

5.13.2.1.2. Establish procedures to monitor OAP trends and take required actions.

5.13.2.1.3. Ensure personnel are trained to identify and respond to wear metal limits for assigned and maintained engines and are trained to perform sampling procedures IAW TO 33-1-37-2 , *Joint Oil Analysis Program Laboratory Manual, Volume II*

5.13.2.1.4. Ensure oil samples taken at the test cell are promptly delivered to the OAP laboratory.

5.13.2.1.5. Act as a central point-of-contact for all abnormal OAP laboratory results.

5.13.2.1.6. Forward information to the OAP laboratory concerning actions taken as a result of OAP recommendations.

5.13.2.1.7. If the NDI laboratory providing OAP support is not located on the same base as the supported unit, or the supported unit does not have NDI/OAP personnel assigned, assign the OAP responsibilities to the owning organization IAW TO 33-1-37-1 , *Joint Oil Analysis Program Laboratory Manual, Volume I,* TO 33-1-37-2 , and TO 33-1-37-3 , *Joint Oil Analysis Program Laboratory Manual, Volume III* . The owning organization provides samples in an expeditious manner to the supporting OAP laboratory. The owning organization will:

5.13.2.1.7.1. Establish collection points and procedures to receive and forward OAP samples to the supporting laboratory, monitor sample collection, assign control numbers, and provide blocks of sample control numbers for use in other squadrons.

5.13.2.1.7.2. Advise Operations Officer/MX SUPT, MOC and the owning work center of abnormal OAP trends.

5.13.2.1.7.3. Review OAP cycle times (from sampling to receipt at the laboratory and return to the unit) to ensure processing meets mission needs.

5.13.3. Support Section. Processes supply requests, maintains AF Form 2413 (or operates remote devices), tracks MICAP due-outs, monitors bench stock, conducts bench stock and adjusted stock level reviews, and operates tool storage areas. In addition to common responsibilities outlined in **Chapter 3** of this instruction, the support section NCOIC will ensure a flight due-out release point and holding bins are established, and UND "A" and urgency justification code (UJC) BQ requirements are verified.

5.13.3. **(ANG)** If applicable, otherwise duties are performed/assigned by the Propulsion Supervisor.

5.13.4. Jet, Turboprop, Turbo-shaft Engine Intermediate Maintenance (JEIM) Section. Stores, builds up, tears down, modifies, and repairs engines, QEC kits, and tests components. In addition to common responsibilities in **Chapter 3** of this instruction, the JEIM section NCOIC will:

5.13.4.1. Plan and monitor the progress of propulsion system maintenance, ensuring maintenance schedules are met by anticipating materials required and managing delays to prevent schedule disruptions.

5.13.4.2. Ensure personnel prepare propulsion units and components for shipment and properly identify units to be returned to depot.

5.13.4.2.1. Attach Comprehensive Engine Management System (CEMS) paper products to life-limited components IAW 00-20-series TOs if required by the source of repair.

5.13.4.2.2. Components rejected by Automated Ground Engine Test Set/Engine Test Trim Automated System (AGETS/ETTAS) are shipped with printouts and DRs, if applicable.

5.13.4.3. Ensure documentation of TCTO compliance IAW 00-20-series TOs.

5.13.4.4. Ensure CEMS products obtained from EM are used for all assigned engines. CEMS products will list all parts and serial numbers installed on the engine.

5.13.4.5. Establish procedures to ensure all parts and serial numbers are inventoried when an engine is received or released by the section. Notify EM when a different serial numbered part is installed or changed so the automated record is updated.

5.13.4.6. Perform production scheduling to include informing the Flt CC/Chief of significant problems and production delays and immediately inform MOF EM of engine status changes IAW AFI 21-104, *Selective Management of Selected Gas Turbines*. Maintain and review production records to update flow times and identify problem areas.

5.13.4.7. Ensure an engine work folder is established for each engine during periodic inspection, reconditioning, or other maintenance. One work order is initiated in MIS for an entire job. Separate job control numbers (JCN)/WCE are initiated for discrepancies found during the look phase of an inspection or subsequent to repair. Complete the MIS work orders during inspection, recon-

ditioning or maintenance. All engine shops will establish engine work folders on all possessed engines and EM or JEIM will maintain the folders until the engine is transferred.

5.13.4.7.1. The engine work folder contains a list of all parts, TCTOs and TCI requirements for the engine. The work folder contains worksheets that document engine historical information, critical maintenance management stages, and employee numbers of technicians and supervisors completing maintenance and inspections. Supplement work folders and worksheets to fit unit needs. Flights may use computer-generated products, provided they include all required information. As a minimum, work folders will contain the following:

5.13.4.7.1.1. Engine/Module/Accessories Information Worksheet. This document is used to provide a quick synopsis of maintenance accomplished. Include: engine serial number, type, position (if applicable), engine operating time, date started work, date turned serviceable, job control number, maintenance required, reason for removal, list of time change and TCTO requirements. The supervisor reviews signature blocks (crew chief, support, EM), and section NCOIC verifies all repair requirements have been accomplished and documented in the work folder. Ensure a job control number created by the JEIM/Module/Accessories or EM section and is used to process repair of the engine and modules. This procedure will ensure all maintenance data is documented against one JCN and engine failure information is connected to the in-shop action.

5.13.4.7.1.1. **(ANG)** Ensure a job control number created by the JEIM/Module/Accessories or EM section and is used to process repair of the engines, modules, and any additional flightline profile packages/WCE (N/A under G081). Schedule flightline profile packages/WCE and MIS profile packages against the flightline-generated WCE (N/A under G081). **EXCEPTION**: Engines received from off station operating units must establish new job control numbers and WCEs.

5.13.4.7.1.2. Receiving Inspection Worksheet. The worksheet is used for documenting items to be accomplished by JEIM prior to engine repair. Minimum requirements: FOD check of engine inlet and exhaust, inspection of engine for general condition and fluid leakage, Event History Recorder (EHR)/Turbine Engine Management System (TEMS) data (if applicable), ET&D (if applicable), borescope inspection (if applicable), a check with OAP lab for possible problems, and a list of unique or problem areas to be checked prior to engine disassembly or maintenance.

5.13.4.7.1.3. Serially Controlled/Time Tracked Item Replacement Record. This document shows a list of components replaced by nomenclature, old and new part number (if applicable), and serial number.

5.13.4.7.1.4. Daily Summary Record. This document provides a synopsis of maintenance performed during each shift. Document work packages, subordinate work packages, and TOs used to perform the task in the Summary Block. Additionally, the Date, the Shift, Rank, Last Name and Employee Number for each individual performing maintenance will be annotated in the Daily Summary. All entries in the Summary of Maintenance section will include the Date, Shift, Rank, Last Name, and Employee Number of person making the entry. Units may use a general purpose or MAJCOM/locally approved form.

5.13.4.7.1.5. IPI Worksheet. This form includes the WUC, nomenclature, specific step required for the IPI, and space for employee numbers and signatures of technicians and

inspectors performing maintenance. ***NOTE***: Organizations using digital systems may file a printed report in lieu of signatures. (e.g., Interactive Electronic Technical Manual (IETM))

5.13.4.7.1.6. Parts Requisition Record. Use this document to list all parts (including TCIs) on order. As a minimum, this document will include the following headings: Engine/Module/Accessory TMSM, Engine/Module/Accessory Serial Number, Nomenclature, Part Number, NSN, Requisition Number, Priority, Status, DIFM Clear with Yes and No sections.

5.13.4.7.1.7. JEIM Test Cell Preparation Worksheet. This worksheet contains a list of items/tasks to be accomplished by JEIM prior to sending an engine to the test cell. As a minimum, document the following: an inlet and exhaust FOD inspection; any pre-run servicing required (e.g., cap open lines, cannon plugs, engine intake and exhaust inspection). Also document a thorough tool inventory and an inspection for loose hardware. The section supervisor will document a review of the work folder to ensure maintenance performed or required actions are documented.

5.13.4.7.1.8. Test Cell Pre-run Worksheet. Test cell personnel will complete this document prior to an engine run. As a minimum, this document will include the following headings: Engine TMS; Engine Serial Number; EOT/Cycles; JCN; Remarks; Pre-run Emergency Briefing Accomplished with run Supervisors Name, Signature and Date sections; and Inspection with Area, Employee Number and Date sections. ***NOTE:*** As a minimum, Area inspection will include: Inlet FOD/Foreign Object (FO); Exhaust FOD/FO; Engine Exterior and FO; General Engine Serviceability; Test Stand/Thrust Bed/Test Equipment for FO; CTK Inventory C/W; Engine Servicing Check; All preliminary engine installation and run requirements C/W; serviceable fire extinguisher on hand. Each area inspection will have the performing technician's employee number and date accomplished annotated.

5.13.4.7.1.9. Test Cell Post Run Worksheet. This document is used to document items/tasks accomplished by test cell personnel after engine run. As a minimum, this document will include the following headings: Engine TMS; Engine Serial Number; EOT/Cycles; JCN; Maintenance Actions Performed; Test Cell Supervisors Post-run Review with Name, Signature and Date sections; and Inspection with Area, Employee Number and Date sections. ***NOTE***: As a minimum, Area inspection will include: Inlet FOD/FO; Exhaust FOD/FO; CTK Inventory C/ W; Post-Run OAP Samples C/W (if applicable); AFTO Form 350 or AFTO Form 20, **Caution and Inspection Record**, Attached; Engine Preservation Type and Date; Throttle Secured to Off Position (if applicable) and Tagged; Cap Open Lines/Cannon Plugs; Install Intake/Exhaust Covers; Servicing Amount; Engine Test Cell Discrepancies Cleared; 7-Level Inspection of Components Replaced or Disconnected; and Final Leak Check. ***NOTE***: Test Cell personnel will leak-check items not accessible with the engine installed in or on the aircraft prior to leaving test cell. Each area inspection will have the performing technician's employee number and date accomplished annotated.

5.13.4.7.1.10. Final Inspection Worksheet. This document is used to document JEIM requirements after repair or testing has been completed. It includes, FOD inspection of intake, exhaust, and external engine; borescope engine (if applicable); ensuring throttle is secured and tagged to "off" position (if applicable); capping, plugging and covering fittings and lines; attaching AFTO Form 350 to lines, fittings or plugs that require "leak

check" when installed in aircraft (items not accessible in aircraft must be leak checked on test cell); attaching AFTO Form 350 and/or serviceable tag to engine, ensure supply accounts and MIS entries have been cleared.

5.13.4.7.1.10. **(ANG)** Use AF Form 1492 tag to secure throttle to off position.

5.13.4.7.1.11. Borescope Worksheets. Ensure borescope inspection worksheets are used for engines requiring borescope documentation.

5.13.4.7.1.12. Uninstalled Engine/Module Blade Blending/FOD Damage Worksheet. Used to document blade blending/FOD damage for uninstalled engines/modules. As a minimum, this worksheet will have the following information: Engine/Module Serial Number, Date, Discrepancy, Stage, Corrective Action including number of blades blended, depth of damage before and after blend, area of damage and Employee Number.

5.13.4.7.1.13. RCM Worksheets. For JEIM engine builds, a copy of the "RCM Build Options" and "RCM Calculator Summary" worksheets are maintained in the engine work folder for documenting life-limited component engine build recommendations. Utilize RCM calculator software (**https://gimms.tinker.af.mil**) in JEIM prior to engine build. The sheets are required only if life-limited components (excluding LRU) are removed and replaced during the JEIM engine build and the TMSM engine is available in the RCM.

5.13.4.7.2. The work folder will transfer with the engine. (A copy should be maintained by the losing organization for at least 6 months.) Gaining units will maintain the work folders and ship the documents with the engine to depot when appropriate.

5.13.4.8. Process the MICAP start in MASS; ensure all pertinent data is included. (Applies to commands with a RSS).

5.13.4.9. Upgrade, downgrade and cancel MICAP requirements. (Applies to commands with a RSS).

5.13.4.10. For all engine builds which require the unit to remove or replace life-limited components (excluding LRU's), ensure the RCM calculator is used. The calculator is not used for engines which do not have the calculator developed.

5.13.5. Test Cell and Noise Suppression System (NSS) Section. Tests engines to evaluate the quality of maintenance and engine performance, and accomplish engine preservation. In addition to the common section NCOIC responsibilities outlined in **Chapter 3** of this instruction, the NSS section NCOIC will:

5.13.5. **(ANG)** Ensure that inspections, repairs, and corrosion control are accomplished, and records are maintained on noise suppresser systems, test cells, and trim pads, when required.

5.13.5.1. Ensure NSS and test cell personnel accomplish minor maintenance, make adjustments to engines, and document engine condition. The test cell supervisor ensures test cell components are calibrated on site, if practical.

5.13.5.2. Brief maintenance personnel on NSS operating/emergency procedures.

5.13.5.3. Ensure the NSS is used to the fullest extent. Open tie-down pads are only used as a secondary system when the NSS is down or to help reduce backlogs.

5.13.5.4. Ensure qualified NSS personnel are present whenever the NSS is in use. If required, provide NSS personnel to augment AMXS deployment requirements.

5.13.5.5. Ensure custodial responsibilities are accomplished on all assigned equipment.

5.13.5.6. Ensure qualified personnel from the aircraft's owning squadron position aircraft on the NSS, prepare aircraft for engine run and accomplish engine run, trim, and troubleshooting.

5.13.5.7. Report Halon 1301 releases in accordance with AFI 91-204, *Safety Investigations and Reports* and AFI 32-7086.

5.13.6. **Module/Accessory Repair Section.** Repairs, stores, and maintains fuel nozzles, fuel manifolds, oil pumps, accessory housings, afterburners, thrust reversers, augmentors, engine components, time change modules, and shop replaceable units. Operates and maintains the bearing room IAW TO 44B-1-15, General Instructions - Jet Engine Anti-friction Bearing Handling, Removal, Cleaning, Inspecting, and Installation at Jet Engine Base Maintenance Facilities.

5.13.7. Small Gas Turbine Engine Section. Repairs and maintains small gas turbines used in aircraft. In addition to common responsibilities outlined in **Chapter 3** of this instruction, the small gas turbine engine section NCOIC will ensure personnel are qualified to operate small gas turbine engines and test stands.

5.13.7. **(ANG)** The MXG/CC has the option to reassign these duties, if applicable.

5.13.8. Engine Equipment Maintenance Section. Maintains, manages, and stores engine support and removal/installation/transportation equipment and trailers.

5.13.9. Propeller Section. Repairs, builds up, tears down, and modifies propellers, valve housings, pump housings, and associated components.

5.13.10. QEC Kit Management. QEC kit removals and installations are coordinated with the SRAN EM and loaded in MIS as a part number-serial number item, reflecting where the kit is installed or spared.

5.13.10.1. In addition to repair cycle procedures outlined in **Chapter 11** in this instruction, the technician removing a QEC kit item from an engine completes an AFTO Form 350, enters the reason for removal in Block 14, and annotates the QEC kit inventory for each repairable item.

5.13.10.2. For components removed for heat treating, washing, or sand blasting, technicians will attach a numbered metal tag (if needed) to the item and enter the metal tag number on the AFTO Form 350, Block 15. The metal tag links the item to the AFTO Form 350. Section personnel enter "QEC" in large letters on the AFTO Form 350, Block 15, to identify the item as a QEC asset.

5.13.10.3. Complete the AF IMT 596, **Quick Engine Change Kit Inventory,** for on repair cycle items and QEC kit unique items when an engine enters the section for tear down. If TO requirements restrict reuse of items, the technician marks the AF IMT 596 with an asterisk to show a demand has been placed on supply.

5.14. Test, Measurement, and Diagnostic Equipment (TMDE) Flight. Maintains, calibrates, and certifies TMDE, traceable through the AF Primary Standards Laboratory (AFPSL) to the National Institute of Standards and Technology (NIST), or other AF Metrology and Calibration (AFMETCAL)-approved source. Provides base-level support of aircraft, precision guided munitions, ground systems, and other equipment assigned to the base or geographically separated units. Consists of a Precision Measurement

Equipment Laboratory (PMEL), production control section, a Quality Program (QP) section, and a Technical Order Distribution Office (TODO) or Technical Order Distribution Account (TODA). A Rapid Assistance Support for Calibration (RASCAL) may also be assigned.

5.14. (ANG) N/A to the ANG. The following only applies to the ANG: The MXG/CC designates a TMDE coordinator for liaison between the unit and the servicing TMDE laboratory. Local OIs must be published to ensure that unit TMDE is controlled, calibrated, repaired, and certified IAW prescribed directives. A host tenant agreement with the servicing PMEL must be accomplished when required. All TMDE specified as PMEL responsibility in TO 33K-1-100-1/2 must be sent to the PMEL for scheduled calibration and repair. Where an ANG Type II PMEL is assigned, the appropriate commander shall ensure the PMEL conforms to the provisions outlined in TO 00-20-14. Authority for User Torque Calibration and Repair Sites expires when user organizations are redesignated, inactivated, reassigned, or on 30 September 2011; whichever comes first. Affected user organizations shall use AFI 25-201, *Interservice Support Agreements*, to acquire support for their total torque-indicating device workload (workload currently on hand and, when applicable, transferred workload). All subparagraphs in section **5.14.** are also N/A to the ANG.

5.14.1. PMEL performs in-laboratory and on-site calibration and repair using laboratory equipment and calibration standards, Transportable Field Calibration Unit (TFCU), Portable Automatic Test Equipment Calibrator (PATEC), Jet Engine Test Cell/Stand Calibrator (JETSC), or RASCAL.

5.14.2. PMEL calibrates, certifies, and maintains TMDE IAW TO 00-20-14, TO 33K-1-100, and the supported CMS.

5.14.3. When a RASCAL mobile facility is assigned to the base, the TMDE flight uses base resources (e.g., civil engineering, AGE flight) to the maximum extent possible to maintain the facility, associated calibration standards, computers, ECU, power transformers, etc., for immediate peacetime or wartime deployment. The TMDE flight shall maintain sufficient PMEL journeymen/craftsmen with documented qualifications to maintain, complex, and de-complex the RASCAL structure.

5.14.4. Flt Chief Responsibilities. In addition to common responsibilities in **Chapter 3** of this instruction, the Flt CC/Chief shall:

5.14.4.1. Maintain PMEL certification IAW this instruction, TO 00-20-14; TO 33K-1-100; CMSs; AFI 21-113, *AF Metrology and Calibration (AFMETCAL) Program*; and AFMAN 32-1094, *Criteria for AF Precision Measurement Equipment Laboratory Design and Construction*.

5.14.4.2. Ensure calibration and repair support for host, tenant, and off-base supported TMDE that is designated as a PMEL responsibility in TO 33K-1-100 or appropriate CMS.

5.14.4.3. Establish and maintain a priority maintenance support plan for mission essential support equipment. As a minimum, the plan must ensure qualified PMEL personnel are readily available to support mission essential maintenance requirements.

5.14.4.4. Establish a customer relations program to provide technical assistance, advice and to obtain customer feedback on TMDE matters. The program must include periodic visits, telecommunications contact or locally-developed customer survey letters sent to all on- and off-base owning work center (OWC) customers at least annually. Maintain records documenting these visits, contacts, and surveys. Customers are encouraged to visit the TMDE flight.

5.14.4.5. Ensure the PMEL Automated Management System (PAMS) is administered, maintained, and operated IAW 33-series AF instructions and 5000-series AF System Security Instructions and Memorandums and AFCSM 21-303(V2), *PMEL Automated Management System (PAMS) - Software Users Manual*.

5.14.4.6. Comply with management responsibilities IAW TO 00-20-14. Identify and track trends quarterly using the HQ USAF/A4MM metrics published in TO 00-20-14. Develop action plans to reinforce positive trends and minimize negative trends.

5.14.4.7. Ensure RASCAL, JETSC, PATEC, and TFCU are maintained as complete sets and available for immediate peacetime or wartime deployment.

5.14.4.8. Approve priority calibration or repair requests. May delegate this authority.

5.14.4.9. Maintain equipment and TO accounts as necessary for the purpose of identifying mobilization requirements.

5.14.4.10. Ensure a system is established to periodically review all TMDE in deferred and in-maintenance status.

5.14.4.11. Establish security procedures to protect classified TMDE IAW AFI 31-401, *Information Security Program Management*.

5.14.4.12. Identify earned reimbursements to the local Defense Finance & Accounting Service (DFAS) accounting liaison (or alternate office) for billing and collection not later than (NLT) 30 days after the month in which the reimbursement was earned. Reimbursement documentation will include, as a minimum, receipts for materiel expenses (i.e., DD Form 1348-1, **DoD Single Line Item Release/Receipt Document**, or commercial supplier equivalent) and data for labor expenses (i.e., category of labor, total hours expended, civilian/military pay grade). TMDE flight will retain reimbursement source documents on file IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil**.

5.14.4.13. Ensure compliance with the Tool and Equipment Management Program IAW **Chapter 10** of this instruction.

5.14.4.14. Ensure support agreements with off-base users and tenants organizations establish a TMDE Collection Point (preferably one per group or equivalent). This requirement also applies to all ANG activities.

5.14.5. PMEL Quality Assurance Section NCOIC. The Quality Program (QP) is established by the TMDE Flt Chief and the PMEL quality section NCOIC is responsible to the TMDE Flt Chief. The PMEL QP is outlined in TO 00-20-14 and this chapter. The QP will be used in conjunction with the MSEP in **Chapter 8** of this instruction. However, over-the-shoulder and quality verification inspections will not be performed by MSEP/Maintenance Standardization and Evaluation Team (MSET)/ Logistics Standardization and Evaluation Team (LSET) inspectors.

5.14.5.1. The TMDE Flt Chief shall:

5.14.5.1.1. Appoint qualified AFSC 2P071 TMDE personnel as PMEL Quality Assurance (PQA) section NCOIC and PQA evaluators, and may appoint PQA augmentees. The Flt CC/ Chief may appoint highly qualified 5-skill level personnel when necessary.

5.14.5.1.2. Publish a monthly QP summary and route it through Operations Officer/MX SUPT to the SQ/CC (or organizational equivalent). The report format should comply with TO 00-20-14 and meet local requirements.

5.14.5.2. PQA Section NCOIC and PQA evaluators shall:

5.14.5.2.1. Perform technical evaluations and review TMDE production processes, products, and services to assess equipment condition, process compliance, calibration traceability, personnel proficiency/competency, and quality of training. Inform the TMDE Flt CC/Chief of findings.

5.14.5.2.2. Evaluate nonconformity and problem areas to find the root cause IAW TO 00-20-14. Log nonconformities, root causes, and corrective actions in PAMS/MIS.

5.14.5.2.3. Establish a system to track the status of TO improvement reports and DRs for compliance IAW TO 00-5-1 and TO 00-35D-54. Download monthly TO Improvement Status (TOIS) Listing from the AFMETCAL Det 1 METWEB homepage.

5.14.5.2.4. Verify AFTO IMTs 45, **Request for Calibration Responsibility Determination**, and maintain a suspense file until changes are incorporated into WUC manuals. Download and review Calibration Determination Listing from the AFMETCAL Det 1 METWEB homepage.

5.14.5.2.5. Manage items in the following PAMS status: item calibrated awaiting Quality Review (QR), item selected for Standard Review (SR), DR exhibit and items waiting Process Review (PR) IAW TO 00-20-14.

5.14.5.2.6. Inspect completed PAMS job documentation in conjunction with QR and SR for time accounting, accuracy, completeness, and appropriate action taken and how malfunction (HOW MAL) code correlation. Report trends quarterly to TMDE Flt CC/Chief.

5.14.6. Production Control Section NCOIC. The production control section NCOIC is responsible to the TMDE Flt Chief. The section consists of elements customer service, production scheduling, traffic management, and maintenance supply liaison. Additionally, assign an AFSC 2S0X1 Supply Management individual on a full-time basis. Uses PAMS/MIS to maintain an accurate master identification listing, process equipment, and to provide current status of all TMDE.

5.14.6.1. Customer Service Function. Establishes procedures for turn-in and pick-up of TMDE. Emergency equipment is accepted at any time. In addition, Customer Service Function personnel shall:

5.14.6.1.1. Process incoming TMDE using PAMS/MIS equipment schedules, PAMS/MIS directives, and TOs. Inspect each incoming TMDE item to determine exterior condition IAW TO 33-1-27. For unscheduled TMDE malfunctions, determine AFTO Form 350 discrepancy documentation adequacy. Notify the OWC when documentation is inadequate, paperwork is incomplete, TMDE is missing item(s), or TMDE/paperwork is excessively dirty. The TMDE flight may return these items for correction prior to processing into PMEL.

5.14.6.1.2. Produce monthly TMDE schedules and quarterly master ID lists at least 5 work days prior to the first duty day of the month and distribute to OWCs for correction and verification. TMDE schedules and quarterly master ID lists may be distributed via e-mail and/or webpage. Schedules for OWCs are not required when there are no items in maintenance or overdue status. Establish a tracking and a suspense system for return of corrected listings.

5.14.6.1.3. Notify OWC monitors within 10 calendar days (20 calendar days for remote or off-base locations) of TMDE not delivered on or before the scheduled date due calibration. Maintain a log of all contacts concerning overdue TMDE. For remote and off-base locations, notification is not required if the PMEL has received an advance copy of shipping documentation. Overdue calibration notifications shall include a statement to remove TMDE from service IAW AF instructions unless a date due calibration extension has been requested and approved by the owning MAJCOM IAW TO 00-20-14. Notify the Commander (or equivalent) by letter when the OWC routinely fails to deliver or schedule delivery within a reasonable period following notification.

5.14.6.1.4. Train TMDE monitors and maintain a database or log of training (dates, names, organizations, etc.).

5.14.6.2. Production Scheduling Function personnel shall:

5.14.6.2.1. Accept TMDE from customers, but may reject TMDE until the OWC complies with their responsibilities IAW TO 00-20-14; TO 15X-1-102, *General Care and Cleaning of Oxygen Gauges and Oxygen Device Related Test Equipment*; TO 33-1-27, and TO 37C11-1-1*, Maintenance Instructions -- Cleaning of Pressure Gauges Used on Liquid Oxygen Systems* (e.g., submit equipment with batteries, set torque wrenches at the lowest setting prior to delivery, deliver accessories with TMDE).

5.14.6.2.2. Establish a workload leveling program through daily coordination with customers to maintain a level incoming workload. Advise TMDE Flt Chief through the Production Control Section NCOIC of significant increases in workload or deviations from monthly schedule.

5.14.6.2.3. Establish a “Hold Area” for TMDE requiring technical data or accessories, awaiting instructions from item managers, etc. Notify OWCs of the change to a deferred status. Return items awaiting technical data or accessories if the OWC does not respond in a timely manner after being notified.

5.14.6.2.4. Establish an “awaiting shipment” area for TMDE shipped to another organization and maintain a database or file with associated documents.

5.14.6.2.5. Use PAMS/MIS to control TMDE processed for maintenance. Ensure the current status of all TMDE processed into the PMEL for repair and calibration is reflected in the PAMS/MIS database.

5.14.6.2.6. Correct the PAMS/MIS master ID database NLT 3 workdays after receipt of customer corrections.

5.14.6.2.7. Notify customers of completed TMDE. Take action to resolve problems with customers who fail to pick-up completed TMDE within a reasonable period.

5.14.6.2.8. Manage and schedule TMDE TCTOs IAW **Chapter 7** in this instruction.

5.14.6.2.9. To avoid abuse of the TMDE priority system, the TMDE Flt Chief will assist OWC personnel in locating TMDE to meet their mission requirements. The OWC should attempt to meet mission requirements prior to requesting emergency or mission essential support. Schedule TMDE using one of the following categories:

5.14.6.2.9.1. EMERGENCY Calibration or Repair: One-of-a-kind TMDE that is inoperable or due calibration and for which a critical job is at a work stoppage.

5.14.6.2.9.1.1. A letter of justification signed by the OWC Operations Officer/MX SUPT must accompany the TMDE. The letter may be handwritten to prevent delay. Telephone verification between the OWC and PMEL is encouraged.

5.14.6.2.9.1.2. PMEL must accept emergency TMDE at any time. Immediate and continuous repair action is required until repair/calibration is completed or status of the item changes (e.g., AWP, deferred for lack of standards or technical data).

5.14.6.2.9.1.3. The TMDE Flt Chief or PMEL section NCOIC may require an OWC technician to accompany the TMDE. The technician will remain at the PMEL to provide technical assistance until the work is completed or placed in an interim-complete status.

5.14.6.2.9.1.4. The OWC or using organization must pick up the TMDE immediately upon notification of completion.

5.14.6.2.9.2. MISSION ESSENTIAL Calibration or Repair: One-of-a-kind or one-deep TMDE that is part of a unit's deployment package, is critical to daily peacetime operations, or TMDE assets falling below critical availability levels.

5.14.6.2.9.2.1. A letter of justification signed by the OWC Flt CC/Chief or equivalent will accompany the TMDE unless pre-identified by OWC Flt CC/Chief and approved by TMDE Flt Chief or delegated approval authority.

5.14.6.2.9.2.2. PMEL must accept mission essential TMDE any time during duty hours and schedule it with sufficient priority to ensure the calibration/repair is complete by the date and time specified by the customer.

5.14.6.2.9.2.3. The OWC or using organization must pick up the TMDE immediately upon notification of completion.

5.14.6.2.9.3. ROUTINE Calibration or Repair: TMDE not categorized as emergency or mission essential. PMEL must accept routine TMDE during normal turn-in and pick-up hours.

5.14.6.3. Shipment of TMDE. Processes TMDE items needing contract, warranty, depot or lateral calibration/repair and return through local traffic management flight (TMF) IAW this instruction and AFI 24-201, *Cargo Movement*. Shipping personnel shall:

5.14.6.3.1. Process TMDE shipped off base for calibration or repair and return, including warranty and contract items. TMDE is accountable property with an expiration date (date-due calibration) and must be shipped by traceable means. All installation TMDE items must be shipped through the TMF IAW TO 00-20-14 and other applicable publications.

5.14.6.3.2. Retain and file hard copy source documents for all inbound and outbound (contract, warranty, depot and lateral) shipments IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil/**.

5.14.6.3.3. Use the PAMS shipping module to the fullest extent possible. If PAMS is not available, manual backup methods shall be employed.

5.14.6.3.4. Track TMDE in PAMS maintenance statuses "DEPOT" and "CONTR". Maintain file consisting of all supporting documentation for each type of shipment.

5.14.6.3.5. Establish and implement a reusable container program IAW AFI 24-202, *Preservation and Packing*.

5.14.6.3.6. Outbound Shipments. Prepare DD Form 1149, **Requisition and Invoice/Shipping Document**, for each shipment. All copies of the DD Form 1149 are stamped "TMDE" in one-inch letters using red ink. The form must contain the words "DO NOT POST/PROJECT CODE 571" in block 4, and "SUPPLY INSPECTION NOT REQUIRED-SHIP BY TRACEABLE MEANS ONLY"; and either "CONTAINS HAZARDOUS MATERIAL" or "CONTAINS NON-HAZARDOUS MATERIAL." in section B.

5.14.6.3.6.1. Use AF Form 537, **PME Shipping**, for all TMDE shipments delivered to the packing and crating activity. Include an AFTO Form 350 with each unserviceable TMDE item.

5.14.6.3.6.2. Retain two legible copies of the DD Form 1149 signed by packing and crating personnel. Ensure these copies contain sufficient information to identify the owner or user, part number, NSN, ID or serial number, nomenclature, and the Transportation Control Number (TCN) assigned by the transportation activity.

5.14.6.3.6.3. Retain one copy of the DD Form 1149 until the shipment is received at the destination point, then file the DD Form 1149 IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil**; mark the other copy as "Advance Copy" and mail/electronically transmit it to the destination point. Initiate tracer action if shipping time exceeds standards in AFI 24-201 and follow-up with the destination point within 30 calendar days of the shipping date.

5.14.6.3.7. Inbound Shipments. Place the "Advance Copy" of the DD Form 1149 received from the shipping organization in a suspense file. Notify the TMF to initiate tracer action if shipping time exceeds standards in AFI 24-201.

5.14.6.3.7.1. Reconcile the inbound "Advance Copy" DD Form 1149 with the shipping DD Form 1149 document and clear the suspense. Sign the "Advance Copy" and mail/electronically transmit it to the originator.

5.14.6.3.7.2. Update the PAMS maintenance file ID listing and route the TMDE through designated official for incoming inspection. Report damage attributable to shipping through the TMF. Retain copies of the report of damage with the respective DD Form 1149.

5.14.7. Maintenance Supply Support Function. Manage the flight's maintenance-supply actions IAW **Chapter 11** of this instruction and AFMAN 23-110, and provide assistance to other flight personnel to resolve supply problems. The assigned supply journeyman/craftsman shall:

5.14.7.1. Establishes an "AWP/Equipment Inoperative for Parts (EIP)" storage area. Maintains TMDE and expendable parts accountability and control. Track status of TMDE in PAMS using maintenance status "AWP/EIP" and "in-service AWP".

5.14.7.2. Maintains source document audit trail accountability for all demands on supply. Ensures validity and completeness of supply requisition forms. Verifies and monitors UJCs and Standard Reporting Designator (SRD) codes.

5.14.7.3. Maintains bench, operating, and shop stocks. Disposes of property containing precious metals IAW AFMAN 23-110.

5.14.7.4. Maintains MICAP records and initiates follow-up actions on MICAP requisitions.

5.14.7.5. Monitors backordered requisition status and maintains liaison with LRS personnel. Initiates supply assistance requests for supply difficulties. Submit follow-up actions (document identifier code "AFC") to LRS for requisitions with unacceptable status or unacceptable estimated delivery dates.

5.14.7.5.1. Coordinate with customers to obtain mission impact statements to substantiate supply assistance requests. Establish a suspense system and follow-up to ensure correspondence is received and acted on.

5.14.7.5.2. Consider assigning NRTS codes to TMDE exceeding 60 days in "AWP/EIP" status. Coordinate with LRS personnel to initiate follow-up action with the item manager of the repair parts beginning at the 60th day in status. If parts delivery does not occur by the 90th day in status, coordinate with LRS personnel to contact the item manager of the end item for disposition instructions.

5.14.7.6. Maintains accountability for issues and turn-ins of DIFM repair cycle assets IAW AFMAN 23-110 and TO 00-20-3.

5.14.7.7. Establishes TMDE Flight shelf life program IAW AFMAN 23-110.

5.14.7.8. Assists Government Purchase Card (GPC) holders in administering and coordinating purchases.

5.14.7.9. Requisitions and controls TCTO kits IAW **Chapter 7** of this instruction and TO 00-5-15, *AF Time Compliance Technical Order Process*.

5.14.8. PMEL Section NCOIC. The PMEL section NCOIC is responsible to the TMDE Flt Chief. In addition to the general section NCOIC responsibilities listed in **Chapter 3** of this instruction and in TO 00-20-14, the PMEL section NCOIC shall:

5.14.8.1. Ensure timely verification of new and updated calibration TOs distributed to the PMEL for review, including beta tests of software IAW TO 00-5-3, *Technical Manual Acquisition Procedures*. Annotate comments (enhancements and discrepancies) on AFTO IMT 158, **Technical Order Review Comment Sheet**.

5.14.8.2. Ensure currency of software used in manual/automated calibration procedures and software used to pass/fail TMDE parameters. All such software must possess a valid Computer Program Identification Number (CPIN) or 33K10 designator, see TO 00-5-17.

5.14.8.3. Daily evaluate adequacy of total days in lab (referred to as cycle time or turnaround time) for TMDE AWM, AWM from deferred (AFD), and in-work (INW). Initiate corrective action as necessary to balance workload and capacity (production).

5.14.8.4. Ensure work area supervisors perform and document weekly follow-ups on TMDE in all deferred (DEF) statuses.

5.14.8.5. Annually, identify and code PMEL owned TMDE in PAMS as working standard or not applicable; document the review and retain on file until a subsequent review.

5.14.8.6. Designate work area supervisors and delegate authority to:

5.14.8.6.1. Supervise and direct the work efforts of the work area team and share responsibility for maintenance quality. Work area supervisors must establish processes to ensure work area maintenance practices produce traceable, clean, safe to use TMDE with optimal physical condition and accurate documentation.

5.14.8.6.2. Ensure PAMS accurately reflects correct maintenance status for all TMDE applicable to the work area. Also, ensure accuracy and completeness of data entered in PAMS.

5.14.8.6.3. When authorized IAW **Chapter 14**, **Table 14.1.** of this instruction perform production and supervisory inspections, sign condition tags, validate/verify NRTS conditions, identify/clear repeat and CND discrepancies, etc.

5.14.8.6.4. Resolve production difficulties when the in maintenance cycle time exceeds 7 calendar days.

5.14.8.6.5. Ensure work area team members formally report instances of substandard materiel or supplier performance. Prepare and submit AF IMT 1815, **Difficulty Report (DIREP) Worksheet**; AFTO IMTs 22; SF 368, **Product Quality Deficiency Report**; and all other supplier feedback documents pertinent to PMEL processes. Route all documents through the QP section for coordination and tracking.

5.14.9. TMDE Technical Order Distribution Office (TODO)/Technical Order Distribution Account (TODA). The TODO/TODA is responsible to the TMDE Flt CC/Chief and maintains TO, TCTO, CPIN and commercial data files IAW TO 00-5-1 and TO 00-5-17. The TODO/TODA shall:

5.14.9.1. Follow up weekly on TMDE in deferred maintenance status for lack of TOs or commercial data.

5.14.9.2. Maintain preliminary (draft) TO files and associated documentation from TO verification and post publication reviews.

5.14.9.3. Review AFMETCAL Det 1 METWEB homepage weekly for new Interim Safety Supplements (ISSs) and Interim Operational Supplements (IOSs).

5.14.9.4. Retain and file TODO Account Reconciliation Listing (ARL), and other related TO records IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil**.

5.14.10. TMDE Collection Point. Units serviced by a PMEL not located on the same base shall establish a TMDE collection point. The Collection Point Coordinator is the single point-of-contact between the OWC and the servicing TMDE Flight and is trained by the servicing PMEL. The TMDE collection point shall perform the applicable responsibilities of this instruction, paragraph **5.14.6.**, production control section.

Chapter 6

MAINTENANCE OPERATIONS SQUADRON (MOS)

6.1. General. The MOS is directly responsible to the MXG/CC for the administration, analysis, training management, and programs and resources necessary to support the group production effort. The MOS is comprised of the following flights, Maintenance Operations, Maintenance Training and Programs and Resources. The planning, controlling, scheduling, and executing responsibilities of the MXG/CC will be met through the actions of these functions.

6.1. (ANG) General. N/A to the ANG. The following only applies to the ANG: The MOF is responsible to the MXG/CC for aircraft maintenance staff functions required for the efficient operation of the Maintenance Group. This flight normally includes the MOC, PS&D, EM, Training Management, Maintenance Analysis, and Maintenance Plans and Programs. They are responsible to the MXG/CC for overall flight management. Additional common responsibilities are outlined in **Chapter 3** of this publication.

6.2. Squadron Commander Responsibilities. The MOS/CC is responsible to the MXG/CC for overall squadron management. As a key maintenance executive responsible for managing wing maintenance resources to support peacetime, contingency and wartime orders, the MOS/CC monitors squadron capability and takes necessary actions to ensure that all resources are available and effectively utilized to meet mission requirements. The MOS/CC recommends and the MXG/CC approves flight commander appointments. General responsibilities are outlined in **Chapter 3** of this instruction.

6.2. (ANG) The MOS/CC position does not normally exist in the ANG. The duties in this paragraph shall be performed by the MOF/CC or MOF superintendent.

6.3. Maintenance Operations Flight (MOF). This flight is the central agency for monitoring and developing long-range strategies to sustain the health of the fleet. Long-range fleet health priorities include, but are not limited to, isochronal/phase management and aircraft deployment rotations. Fleet management is defined as the effective utilization of available resources to accomplish the aircraft support cycle from planned maintenance events to flying schedule execution. It is a disciplined and prioritized scheduling effort that optimizes support to aircraft requirements such as flying events, ground training events, scheduled maintenance inspections, aircraft configuration control, aircraft modification schedules and aircraft recovery maintenance. The result of effective fleet management is the consistent availability of quality aircraft for today and tomorrow's operations requirements. The flight is comprised of the following sections: Maintenance Operations Center; Engine Management; Maintenance Data Systems Analysis; Plans, Scheduling and Documentation; and Maintenance Supply Liaison. The MOF superintendent position will be filled by 2RXXX personnel (SMSgt or CMSgt). N/A to the ARC.

6.3. (ANG) The MSL is aligned under the LRS in the ANG.

6.3.1. Maintenance Operations Flight Commander (MOF/CC)/Superintendent (MOF/SUPT). The MOF/CC, assisted by the MOF/SUPT, is responsible through the MOS/CC to the MXG/CC for monitoring the health of the aircraft fleet. Although MOS does not have authorized Operations Officer/MX SUPT billets, the MOF/CC/SUPT fulfill these roles. EXCEPTION: MXG/CEM approves SCR actions for those individuals administratively assigned to MOS (QA, AFREP, etc…). WWM will approve WS SCRs. In addition to general responsibilities in **Chapter 3** the MOF/CC/SUPT will:

6.3.1. **(ANG)** N/A to the ANG. The following only applies to the ANG. Maintenance Operations Flight Commander (MOF/CC)/Superintendent (MOF/SUPT). The MOF/CC, assisted by the MOF/SUPT, is responsible through the MOS/CC to the MXG/CC for monitoring the health of the aircraft fleet. Although MOS does not have authorized Operations Officer/MX SUPT billets, the MOF/CC/SUPT fulfill these roles. WWM will review (not approve) all 2W1X1 SCR additions. In addition to general responsibilities in **Chapter 3** the MOF/CC/SUPT will:

6.3.1.1. Develop and publish the wing flying/maintenance schedule in coordination with other squadron Operations Officers/MX SUPTs and submit to MXG/CC for approval.

6.3.1.2. Review and finalize the next day's aircraft flying and maintenance execution schedule. Coordinate AF IMT 2407, IAW **Chapter 7**, MAJCOM and local policy.

6.3.1.3. Determine long-range fleet health maintenance priorities.

6.3.1.4. Manage the data collection process, review data and verify analysis for maintenance data collection requirements.

6.3.1.5. Evaluate and provide trend analysis information to the MXG/CC and applicable SQ/CCs.

6.3.1.6. Ensure aircraft status is properly reported and maintained IAW AFI 21-103, AFCSM 21-564V2, *Status and Inventory*, and MAJCOM supplements. Ensure MOF PS&D Aerospace Vehicle Distribution Officer (AVDO) accurately reports all assignment/possession changes through the MAJCOM AVDO IAW AFI 21-103 and AFI 16-402.

6.3.1.7. Ensure data is valid and submitted to meet MAJCOM reporting suspense requirements. Before submission, coordinate with squadron and group leadership to ensure comments fully explain causes of the data. Initiate, review, and validate special analysis studies. Determine planning factors for the next year's flying hour program.

6.3.1.8. Prioritize the use of shared maintenance resources/facilities (e.g., fuel cell hangar, engine run spots, compass rose, etc).

6.3.1.9. Provide EM support for flightline and maintenance support shop requirements.

6.3.1.10. Develop procedures to update Geographical Location (GEOLOC) codes for all on and off-station possessed aircraft and ensure GEOLOC codes are updated/correct in the MIS "Location Subsystem" (G081 units are exempt as long as a HHQ agency accomplishes this requirement). Will ensure any deploying unit loads all equipment into the IMDS-CDB AEF subsystem, GO81 units are exempt.

6.3.1.11. When applicable, refer maintenance personnel to the EDS C and ETS personnel for information and specifications when TOs do not provide sufficient detail.

6.3.1.12. Host DFTs/CFTs, provide in-briefs on unit-specific maintenance requirements, review plans and coordinate/monitor status of aircraft and progress of repair work.

6.3.1.13. Appoint a squadron LMR manager, if applicable, IAW **Chapter 14**.

6.3.1.14. Provide workspace for the MSL to operate, if applicable. Participate in the review of base level repair capability IAW TO 00-20-3, AFI 21-123 and MAJCOM supplements.

6.3.1.15. Accomplish "First Look" IAW **Chapter 7** of this instruction.

6.3.1.15. **(ANG)** N/A to ANG.

6.3.2. Maintenance Operations Center (MOC). The MOC monitors and coordinates sortie production, maintenance production, and execution of the flying and maintenance schedules while maintaining visibility of fleet health indicators. The AMXS sets priorities for the production effort to meet mission requirements. Through coordination with maintenance units, the MOC establishes priorities for competing limited resources [e.g., fuel or calibration docks, wash racks, and dispatched specialists from the maintenance squadron(s) (e.g., egress)] based on daily flying schedule and maintenance priorities. The exchange of information between squadrons and the MOC must be in sufficient detail to allow the MOC to comply with reporting requirements and to identify potential problems. The AF is continuing to improve the Enhanced Maintenance Operations Center (EMOC) application. Although not mandated, EMOC is available for use. During periods of contingency tasking (simulated or actual), the MOC assumes increased responsibility for the coordination effort. Command and control differs for internal and external conditions and states of readiness: Internal control is exercised when all resources are in a single squadron; external control is exercised when more than one squadron must share facilities or resources. Command and control, as exercised by the battle staff through the MOC, primarily concerns the maintenance squadron(s) actions to facilitate and expedite production in the AMUs.

6.3.2.1. Maintains visual aids (electronic or manual), using EMOC when available, to show the status and location of each aircraft on station, maintained or supported by the wing. Units should ensure status boards depicting aircraft status comply with program security guidelines.

6.3.2.1. **(ANG)** EMOC in the ANG is optional. Reference AFI 10-701.

6.3.2.2. Publishes local radio call signs for maintenance LMR networks.

6.3.2.3. Ensures aircraft status and ETICs are properly reported by the Pro Super IAW AFI 21-103, AFCSM 21-564, and MAJCOM supplements. The MOC verifies aircraft status and ETICS using the MIS before reporting it.

6.3.2.3. **(ANG)**) Ensure MIS and aircraft forms are documented by the individual completing the task, when possible. In circumstances where this is not practical, the MOC may document the MIS, but the actual individual's employee number (G081)/ userid (IMDS-CDB) that completed the task will be entered in MIS and it will match the aircraft forms. As soon as practical, the individual who completed the task will complete the MDC and verify the corrective action.

6.3.2.4. Monitors the progress of aircraft FCFs as established by QA and PS&D.

6.3.2.5. Informs affected activities of changes in priorities, plans, and schedules.

6.3.2.6. Coordinates on changes to the flying schedule with applicable agencies by use of AF IMT 2407.

6.3.2.6. **(ANG)** Automated products containing the same information are acceptable.

6.3.2.7. Requests support services (e.g., standby fire fighting capability, aircraft water, snow removal, fueling and defueling service, civil engineer support, or control tower clearances for ground movement of aircraft and equipment).

6.3.2.7.1. Coordinates on all aircraft engine runs and all aircraft ground movements conducted by maintenance personnel prior to execution.

6.3.2.8. Develops, implements, and maintains functional checklists.

6.3.2.8.1. Functional checklists are required for use during actions such as mass loads, Broken Arrow, Dull Swords, Bent Spear, aircraft crash, flightline fire, severe weather warning or evacuation, runway closure, Quick Reaction Checklists (QRC), and any other unusual circumstances deemed necessary. For OPlan 8044 notification, use the plan implementation checklists. Use unit operational plans as a guide in developing these checklists. Checklists contain those actions required to be taken by functional area(s). The MOC maintains checklists IAW MAJCOM/local guidance.

6.3.2.9. Monitor the status and ETIC of MEL designated AGE if it falls below critical levels.

6.3.2.10. Coordinates munitions delivery priorities with flying units and munitions maintenance activities/control, when tasked.

6.3.2.10.1. Notifies the base fire department and all other required agencies of munitions-loaded or unloaded aircraft. Provides agencies with the aircraft type, tail number, location, type of explosives, and arming status. Wings will publish procedures of notification requirements.

6.3.2.11. Maintains the status, ETIC, and location of each aircraft (on and off station) assigned to or supported by the wing. Upon notification of deployments, load all deploying equipment into the IMDS-CDB AEF subsystem for the duration of the deployment.

6.3.2.12. Ensures all deviations to the daily flying schedule are reviewed and accurately reported IAW MAJCOM directives. Forward a copy of each AF IMT 2407 and the daily flying schedule, with all annotated deviations, to Maintenance Analysis.

6.3.2.12. **(ANG)** Automated products containing the same information are acceptable.

6.3.2.13. Monitors Hangar Queen aircraft IAW **Chapter 14** of this instruction and MAJCOM directives.

6.3.2.13. **(ANG)** N/A to the UAE owned F-16 block 60 program and RNAF owned F-16 aircraft.

6.3.2.14. Coordinates maintenance on the alert force, if applicable.

6.3.2.15. Ensures work centers are aware of the two-person concept prior to dispatch IAW Nuclear Surety Program.

6.3.2.16. Monitors and reports the status of ECM and sensor pods IAW AFI 10-201. When MC pod availability falls below requirements per the DOC or OPLAN, track/monitor the following information: pod serial number, status (AWP/AWM), MICAP NSN, off-base requisition numbers, and ETIC. Classify information IAW AFI 31-401.

6.3.2.17. Notifies flightline expediters of OAP code “C” and “E” conditions and ensure aircraft are not operated until results of OAP sample(s) are known.

6.3.2.18. Notifies appropriate agencies (e.g., Pro Super, flightline expediters, fuel cell maintenance, munitions control, hush house/test cell, etc.) of severe weather warnings.

6.3.2.19. Notifies the wing safety office, QA, and wing FOD monitor of mishaps involving aircraft FOD, aircraft damage, or injuries resulting from aircraft maintenance.

6.3.2.20. When tasked by the WG/CC, maintain central key control for hardened aircraft shelters and other facilities.

6.3.2.21. MOC Personnel. Must be experienced with the MIS and be qualified by formal training or experience on at least one of the assigned weapons systems.

6.3.2.21.1. The MOC senior coordinator or representative will attend the daily group production meeting.

6.3.2.21.2. The MOC senior coordinator will establish a proficiency training program for weapons system coordinators to familiarize personnel with every aspect of MOC operation.

6.3.2.21.3. Personnel assigned to the MOC will be capable of reporting aircraft status from the MESL and operating MIS remote devices before assuming unsupervised duties.

6.3.2.22. The MOC should be located near the flightline. Facilities and visual aids cannot be fully standardized due to variations in buildings, geography, mission and organizational site. When deployed, units may establish an alternate maintenance operations facility. The facilities and visual aids must meet the minimum standards set forth in this publication. When improvements to existing facilities are possible or new facilities are being planned, the MOC will meet the following minimum standards:

6.3.2.22.1. A completely enclosed room with air conditioning and heating. An observation room is permitted. If utilized, it will allow an unobstructed view of visual aids. The doors to the MOC and the observation room will be either mechanically or electrically locked to control access.

6.3.2.22.2. Isolate MOC electrical power circuits. Provide a standby power source and emergency lighting. Establish procedures to operate standby power sources.

6.3.2.23. Use visual aids to provide ready access to critical data. Computer terminals may be used in place of visual aids. If this option is used, develop procedures to retrieve printed products on a regular basis in case of system failure. Visual aids will display the following:

6.3.2.23.1. Aircraft Status. Display aircraft status in the following columns: serial number, location, priority, status, DOC limitations/remarks, ETIC, configuration, OAP status codes, munitions load, and fuel load. Units having only one standard configuration or fuel load may omit these columns. Units using automated systems need to display the above information, but may use “remark” or “narrative” portions of the screen for items not listed by specific title. Show DOC limitations against FSL and the BSL as itemized on the MESL in the MAJCOM supplement to AFI 21-103. Discrepancy narratives in the “DOC limitations/remarks” column should be clear, concise, accurate, and include all pertinent data (e.g., document numbers).

6.3.2.23.1. **(ANG)** ANG will access via ANG/AVDO CoP for applicable MESL information. N/A to the UAE owned F-16 block 60 program and RNAF owned F-16 aircraft.

6.3.2.23.2. Flying Schedule. Display the individual aircraft scheduled for flight each day with the following information columns, as a minimum: aircaft serial number, scheduled takeoff, actual takeoff, scheduled landing, actual landing, sortie configuration, call sign and remarks.

6.3.2.23.3. Aircraft Generation Status (when required by unit mission). Display aircraft status using AF IMT 2408/2409 or MAJCOM approved automated equivalents to manage aircraft generation sequence actions for various taskings with the following information: maintenance actions required to generate aircraft in the time sequence to meet mission requirements for aircraft participating in ORI, Initial Readiness Response Inspections (IRRI), NATO TAC EVAL,

OPLAN 8044, general war plans, strikes, mass loads, and other special mission requirements. The display format should be compatible with operational plans and command post displays.

6.3.2.23.4. Mobility Status. Each unit assigned to a mobility commitment constructs portable mobility displays to meet deployed mission needs.

6.3.2.24. MOC Maintenance Communications. Reliable, redundant and effective communications systems are essential for efficient operation. These systems should provide accurate, timely, secure, programmable frequency and jam resistant communications needed to accomplish the maintenance mission in a fully deployed isolated mode. Develop and exercise communications-out procedures. Personnel shall receive initial radio operating training before assuming duties involving radio operation IAW AFI 33-106, *Managing High Frequency Radios, Land Mobile Radios, Cellular Telephones, and the Military Affiliate Radio System;* AFMAN 33-120, *Radio Frequency (RF) Spectrum Management*; AFI 33-118, *Radio Frequency Spectrum Management*; and AFI 33-202. For effective flightline operations, more non-tactical radio nets are authorized when large numbers or different types of weapon systems are assigned or when host-tenant agreements specify.

6.3.2.24.1. Specific radio allowances are stated in AS 660. Process requests for specific radio equipment to support maintenance activities IAW AFMAN 23-110.

6.3.2.24.2. A VHF/UHF/HF radio is authorized to provide communications between aircraft and maintenance. Aircrews will relay advance status information, IAW locally developed procedures.

6.3.2.24.2. **(ANG)** Secure Telecommunication Equipment (STE) is authorized.

6.3.2.24.3. The following standard maintenance notification codes reflect the landing status of the aircraft being reported:

6.3.2.24.3.1. Code l - Aircraft is flyable with no additional discrepancies.

6.3.2.24.3.2. Code 2 - Aircraft or system has minor discrepancies, but is capable of further mission assignment within normal turnaround times.

6.3.2.24.3.3. Code 3 - Aircraft or system has major discrepancies with mission essential equipment that require repair or replacement before further mission assignment.

6.3.2.24.3.4. Code 4 - Aircraft or system has suspected or known radiological, chemical, or biological contamination.

6.3.2.24.3.5. Code 5 - Aircraft or system has suspected or known battle damage.

NOTE: Debriefers enter code “8” in the MIS for aircraft debriefed as code “4” or “5”.

6.3.2.24.4. Each MOC will have a hotline on the secondary crash phone net. When required, direct communications lines will be provided to QA, munitions control, EOD, airfield operations, base fire department, NDI, control tower and the central security control.

6.3.2.25. Specialist Use and Control. Coordinate with the MXS/EMS/CMS production superintendent to provide support to a squadron that does not possess the specialty/resources. In this case, specialists are dispatched by direct communication between the MOC and the work center.

6.3.2.25.1. When a specialist is not available, the expediter requests specialist support through the MOC. The expediter releases the specialists when no longer needed for the dispatched task and informs the MOC.

6.3.2.25.2. When an unscheduled maintenance requirement exists in MXS, and the requirement cannot be satisfied within their resources, the work center requests support through the MOC. The work center supervisor releases the dispatched personnel when no longer needed and informs the MOC.

6.3.2.25.2. **(ANG)** Specialists must report job completions, start and stop times, ETIC slippages, and significant problems to maintenance supervision and/or the MOC.

6.3.2.25.3. Monitor MXS specialists working on aircraft scheduled maintenance requirements. To obtain specialist support for PH, PE or ISO inspections, source them from the appropriate organizations as outlined on the appropriate AF IMT 2406, **Maintenance Preplan**, ADS or MIS product. When specialists do not report to the requesting work center within 15 minutes of their scheduled start time, MOC is informed of the no-show and takes follow-up action.

6.3.2.26. Selected Generation Aircraft. In units where aircraft are required to meet OPLAN 8044 or contingency commitments, the squadrons select the tail numbers of aircraft needed to meet requirements. Maintain visual aids that show the order aircraft should be generated. The MOC constantly monitors aircraft status and revises the pre-selected sequence as changed by the squadron. Strict security guidelines and secure voice will be maintained during these operations.

6.3.2.27. Transient Aircraft. Maintains the status and location of all transient aircraft. Post the priority of each transient aircraft on the status board, based on the maintenance priorities listed in **Table 1.1.**. Coordinate with the appropriate agency for aircraft maintenance support.

6.3.2.27.1. Contact WS for arming or de-arming of transient aircraft IAW **Chapter 12** of this instruction.

6.3.3. Engine Management (EM) Section. Monitors engine removals and replacements, component tracking, engine TCTOs and TCIs, engine records in the MIS and CEMS and performs engine manager duties. Manage unit efforts to maintain adequate engine support for mission requirements. Combine functions supporting engine management from separate areas within the wing and will be physically co-located with the Propulsion Flight (N/A to the ARC). The SRAN engine manager works and is co-located with the EM section. EM section will be the wing focal point for both the ET&D and Engine Health Management (EHM) program when applicable. MXG/CC will appoint in writing a highly qualified 2R1X1 or 2A6X1A/B or 2S0X1 with a 7- or 9-skill-level (or civilian equivalent) technician to perform EHM duties IAW 00-25-257, *Engine Trending and Diagnostic, USAF Engines*. Propulsion functional manager will ensure sufficient manpower is assigned to perform this function.

6.3.3. **(ANG)** This paragraph and all subparagraphs are N/A to the UAE F-16 block 60 program, however, 162 FW in conjunction with General Electric (GE) and LM Aero shall develop local procedures in an OI/Sup. The 178 FW in conjunction with the RNAF maintenance liaison office shall develop local procedures in an OI/Sup.

6.3.3.1. Manages the MIS and CEMS IAW AFI 21-104, AFI 10-201, AFI 23-101, *Centrally Managed Equipment*, TO 00-25-254-1, System Manual – Comprehensive Engine Management System (CEMS) (D042) Engine Status, Configuration, and TCTO Reporting Procedures, TO

00-25-254-2, System Manual – Comprehensive Engine Management System for DSD: D042, TO 00-20-5-1, Instructions for Jet Engine Parts Tracking and Fatigue Limit Control, AFCSM 21-558, Comprehensive Engine Management System, and applicable aircraft Dash 6 TOs.

6.3.3.1. **(ANG)** TO 00-20-5-1-1*, Engine Historical Records F-100-PW-100/200/220 Engines,* and TO 2J-1-18, *Preparation for Shipment and Storage of Gas Turbine Engines.*

6.3.3.2. Attends the daily production meeting and coordinates with MOF PS&D, AMU PS&D, and the Propulsion Flight on engine and component maintenance, TCIs, SIs, TCTOs and modifications. Manages engine SIs, TCTOs and TCIs IAW **Chapter 7** of this instruction.

6.3.3.2. **(ANG)** N/A to the ANG. The following only applies to the ANG: Coordinate with aircraft maintenance, PS&D, and propulsion element on engines and components, TCIs, SIs, TCTOs, modifications, and ensures TCTOs and TCIs are requisitioned for the EM section IAW guidance found in **Chapter 7** of this instruction.

6.3.3.3. Plans, schedules, and documents maintenance actions on assigned engines.

6.3.3.4. Provides TCI information (cycles remaining, engine operating time (EOT), etc.) on serially controlled items to the propulsion flight and AMU for engine and engine component CANN actions.

6.3.3.5. Ensures all engine SIs are loaded in MIS against the engine, not the aircraft.

6.3.3.6. Ensures all engine/module inspections/TCIs tracked by EOT, calculated cycles (CCY), total accumulated cycles (TAC), etc., are loaded/tracked in the MIS and CEMS databases. A matrix by engine type should be developed to depict specific inspection and TCI quantities for each TMSM. Inspections tracked by flight hours must be loaded in IMDS-CDB, GO81.

6.3.3.7. Manages TCTOs on all assigned engines and components both installed and removed, as well as managing TCTOs for support equipment to include engine trailers. Accomplishes quarterly TCTO status reviews and reconciliation's IAW TO 00-25-254-1. Complies with TCTO duties and responsibilities for engine items IAW **Chapter 7** of this instruction. Maintains records on TCTO kits and status for all engines installed on aircraft sent to depot.

6.3.3.7. **(ANG)** Initiates AF IMT 2410, *Inspection/TCTO Planning Checklist*, and AF IMT 2001, *Notification of TCTO Kit Requirement*, for TCTO kits, parts, and tools and forwards the AF IMT 2001 to the Flight Service Center or LRS. Maintains TCTO folders for engine-related TCTOs.

6.3.3.8. Manages time changes on all engines and components. Ensures forecast parts requests are submitted to LRS up to 60 days (but not less than 10 days) prior to the need date of the scheduled time change or JEIM/ERRC induction. See **Chapter 7** of this instruction for further guidance.

6.3.3.8.1. Reconciles all TCIs with Flight Service Center (FSC) monthly. Reconciliation will consist of 100 percent validation of existing due outs and a complete physical inventory of all issued TCIs. Inform FSC of any "Mark For" changes or items no longer required.

6.3.3.8.2. Participates in the monthly TCI meeting chaired by wing PS&D

6.3.3.8.2. **(ANG)** N/A to the ANG.

6.3.3.9. Maintains and updates historical documents for all assigned engines, modules, and major assemblies using the MIS. Performs and documents semi-annual reviews of both paper (if applicable/maintained) and automated engine records IAW TO 00-20-1. (Paper history can be maintained

in conjunction with automated history.) In addition to TO 00-20-1 requirements, the following historical entries in MIS are required for serially tracked engines, modules, components and major assemblies:

6.3.3.9.1. Engine removal. Conduct a detailed records review to ensure utilization was properly recorded against the engine and sub-components. A removal narrative is required for all removal actions, except for HOW MAL codes 866, 879, and 800. Use the correct Automated History Event indicator when processing MIS transactions to ensure removal times are posted to automated AFTO IMT 95. Ensure utilization is updated in the MIS before processing the engine removal.

6.3.3.9.2. Special inspections, occurrences, and all borescopes. Include total time (EOT, TACs, CCYs, etc.), findings (no defect noted, discrepancies noted, etc.) and other pertinent information.

6.3.3.9.3. Engine test cell rejects IAW TO 00-25-254-1. Include total time (EOT, TACs, CCYs, etc.), the reason for reject, any specific test cell data and a summary of work performed at the test cell.

6.3.3.9.3. **(ANG)** This data must be routed to the EM Section at the time the engine is returned to JEIM for repair and the data must include, but is not limited to, the reason for the rejection and the time of occurrence. For engines that are accepted at test cell, the data that is required are all repairs, servicing, and if preservation of the engine was required.

6.3.3.9.4. FSE or modifications. Include total time (EOT, TACs, CCYs, etc.), a brief summary of modifications to include part number and serial number of modified items, and other pertinent information.

6.3.3.9.5. TCTO kit verification and validations. Include total time (EOT, TACs, CCYs, etc.), a brief summary of modification including the part number and serial number of items, and other pertinent information.

6.3.3.9.6. Shipping engine, module (uninstalled), and major assemblies (uninstalled). Include total time (EOT, TACs, CCYs, etc.), the reason for shipment, the destination, and other pertinent information.

6.3.3.9.7. Receiving/acceptance inspections, transfers and shipment of engines to designated repair facilities for engine, module (uninstalled), and major assemblies (uninstalled). Include total time (EOT, TACs, CCYs, etc.), received or departing from unit, discrepancies, and other pertinent information.

6.3.3.9.8. Data corrections. Include corrections to erroneous entries and other pertinent information.

6.3.3.9.9. Work completed on engine, module (uninstalled), and major assemblies (uninstalled). Include total time (EOT, TACs, CCYs, etc.) and a brief maintenance summary to include major assemblies replaced, test cell run, engine preservation, annual engine records reviews and other pertinent information (e.g., FOD).

6.3.3.10. Provides automated management products and assist with presentation of reports and briefings. Maintains flow charts and production visual aids depicting current end-item status (JEIM units only).

6.3.3.11. Checks life-limited components forecast for additional component changes, TCTOs and SIs on all removed engines.

6.3.3.12. In coordination with the propulsion Flt CC/Chief, developes a detailed 6-month engine and module TCI removal forecast to smooth peaks and valleys in the engine maintenance workload and publishes the forecast in the monthly flying and maintenance plan. This 6-month forecast must be accomplished monthly using CEMS product E373/MIS products and the projected unscheduled removals based on Unscheduled Removal Rate (total number of unscheduled removals divided by flying hours times/1000). Provides a copy of the forecast to maintenance leaders, MOF and AMU PS&D, and the MAJCOM engine manager. The forecast must be published in the monthly aircraft and maintenance utilization plan.

6.3.3.12. **(ANG)** Provides a copy of the forecast to maintenance leaders, MOF and AMU PS&D.

6.3.3.13. Publishes scheduled engine changes in the weekly and monthly maintenance plan.

6.3.3.13. **(ANG)** N/A to the ANG. The following only applies to the ANG: Publish scheduled engine changes in the monthly maintenance plan or in the first weekly maintenance plan of the effective month.

6.3.3.14. Verifies engine total time versus aircraft total time, flying hours and manual cycles (as applicable) with AMU (MOF in MAF units) PS&D during aircraft document reviews.

6.3.3.15. Maintains (load, delete, and change) the Job Standard Master Listing (JML) for engine inspections and time changes listed in the aircraft Dash 6 TO.

6.3.3.16. Establishes a CEMS and MIS contingency plan for when either or both systems are down for extended periods (more than 48 hours). The plan will include procedures for retaining data in date-time order for input when MIS/CEMS operation resumes and address home station and deployed procedures.

6.3.3.17. Developes local engine tracking procedures and documentation methods to be used at deployed locations. Procedures must include the method of communication (message, e-mail or FAX), documentation and shipping responsibilities with SRAN addresses, and reporting procedures for CANNs and engine removals. The procedures must ensure units take immediate action to correct all reporting errors between the base MIS and CEMS using the engine manager's data list.

6.3.3.18. Accomplishes unit engine manager duties IAW AFI 21-104, TOs 00-25-254-1/-2, and MAJCOM instructions. Acts as liaison to the SRAN engine manager when part of a tenant unit supported by the host base engine manager function.

6.3.3.19. Provides the primary SRAN engine manager all quarterly reporting information required for submission to higher headquarters.

6.3.3.20. The MXG/CC appoints a SRAN engine manager (if a host), or a unit engine manager (UEM), if a tenant, to accomplish the duties IAW TO 00-20-254-series, AFI 21-104 and this instruction. The SRAN engine manager is selected from AFSC 2R1X1 or 2A6X1A/B or 2S0X1 with a 7- or 9-skill-level (or civilian equivalent). The assistant will be at least a 5-skill level from the same AFSCs or civilian equivalent. The SRAN engine manager and assistant are aligned under the EM section. The SRAN engine manager will:

6.3.3.20.1. Advise MXS/CC and MXG/CC on administration of the base EM Program, engine maintenance concepts, principles, policies, procedures and techniques. Act as the single point of contact between the unit and MAJCOM for EM questions.

6.3.3.20.2. Establish written procedures to support EM responsibilities IAW AFI 21-104 and this instruction. Provide inputs for MAJCOM supplements to TOs 00-25-254-1 and 00-25-254-2. Unit procedures must:

6.3.3.20.2. **(ANG)** N/A to the ANG. All sub-paragraphs are also N/A.

6.3.3.20.2.1. Specify responsibilities of affected workcenters for accurate and timely MIS/CEMS reporting of TCTO, SI, TCI, and other documentation requirements (e.g., borescope inspections, blade blending, CANN actions).

6.3.3.20.2.2. Ensure engine, module, and component data is reported to EM no later than close of business the first duty day after the event (e.g., part removal, installation, time update, TCTO status change).

6.3.3.20.2.3. Address tenant, transportation, maintenance, aircraft distribution, supply, and support personnel requirements.

6.3.3.20.2.4. Coordinate procedures with the MAJCOM EM policy section prior to publication.

6.3.3.20.3. Request initialization decks (I-Deck), to include embedded parts, part number, serial number, EOT, inspections, active TCTOs and TCIs, from CEMS Central Data Base (CDB) and ensure data in the MIS mirrors the CDB.

6.3.3.20.3. **(ANG)** To include imbedded parts, part number, serial number, engine operating times, inspections, active TCTOs, and TCIs. AHE maintained in MIS does not have to mirror CEMS.

6.3.3.20.4. Ensure deployed engine monitors are identified and trained to perform duties while deployed. Designated engine monitors will ensure all deployed spare engines have a copy (paper or electronic) of CEMS product E407, option 1 and 4, included in the deployment package.

6.3.3.20.4. **(ANG)** Add option 3 in the deployment package.

6.3.3.20.5. Perform engine manager duties for shipment and receipt of all assigned engines.

6.3.3.20.6. Perform periodic quality audits to monitor accuracy and timeliness of reporting.

6.3.3.20.7. Perform annual EM training for all affected personnel (back shop, test cell, flightline, aircraft maintenance scheduler, etc.) who report engine status or are responsible for engine documentation and scheduling IAW AFCSM 21-558, Vol 2; TO 00-25-254-1/2 and TO 00-20-1.

6.3.3.20.8. Maintain a jacket file of engine shipping documents and receipts. Obtain MAJCOM engine manager approval prior to returning engines to depot or 2LM.

6.3.3.20.9. Perform duties and requirements for engine shipments IAW AFPD 24-2, *Preparation and Movement of AF Materiel*, AFI 21-104, and TOs 00-85-20, 2J-1-18, *Preparation for Shipment and Storage of Gas Turbine Engines,* and 2-1-18, *Aircraft Engine Operating Limits and Factors*.

6.3.3.20.10. Ensure engines are prepared for shipment IAW TO 2J-1-18, and TO 00-85-20. Engines requiring off-base shipment must be delivered to transportation within 24 hours of notification/decision to ship the engine and/or the engine change is complete. Notify MAJCOM engine manager and the owning SRAN engine manager if this time frame cannot be met.

6.3.3.20.10. **(ANG)** Engines requiring off-base shipment must be available for delivery to transportation within 72 hours of notification/decision to ship the engine.

6.3.3.20.11. The SRAN engine manager will report the following in CEMS:

6.3.3.20.11.1. Receipt transactions for engines as of the date and time engines are delivered from the transportation hold area and accepted at the JEIM facility.

6.3.3.20.11.2. Shipment transactions with the "as of" date and time the engine(s) physically leave the base.

6.3.3.20.11.3. All engine and tracked item removals, installations, and engine status changes.

6.3.3.20.11.4. All engine status transaction removals, installations, gains, engine-not-mission capable for supply (ENMCS), work completed, test cell rejects, work stopped, work started, change in level of maintenance, awaiting disposition, intra-AF receipt and intra-AF shipments, transfer, and HOW MAL codes IAW AFI 21-104 and TO 00-25-254-series.

6.3.3.20.11.5. For engines removed status codes LF, LB or LG, determine whether to ship the engine to depot or induct in 2LM repair and process an "ML" transaction. Refer to TO 00-25-254-1 for CEMS codes guidance.

6.3.3.21. Verify all update transactions (e.g., times, TCTO, part removal and installations) are input before reporting an engine removal or installation.

6.3.3.22. **(Added-ANG)** Forecast life limit change requirements resulting from analysis of life limit data and engine time change/inspection requirements and engine historical document files.

6.3.3.23. **(Added-ANG)** Ensure transferred engines or major assemblies are accompanied by assigned TCTO kits and the required historical documentation.

6.3.3.24. **(Added-ANG)** Ensure that command-directed modifications and rescissions requiring decompliance work are accomplished.

6.3.3.25. **(Added-ANG)** Coordinate with LRS to ensure requirements for ENMCS are accurately reported and promptly requisitioned.

6.3.3.26. **(Added-ANG)** Check the non-installed spare engine historical preservation record IAW TO 2J-1-18.

6.3.3.27. **(Added-ANG)** Ensure comments on the status of engines in unserviceable categories (INW, AWP, AWM) are entered into the information analysis web site (GUARDIAN) daily. The web site address is: (**https://guardian.ang.af.mil/engines/engineshome.asp**).

6.3.4. Maintenance Supply Liaison (MSL) Section. The MSL monitors the overall maintenance and supply interface, resolves supply support problems, and coordinates supply-related training needs. If MAJCOMs opt to establish the MSL function, the LRS/CC must organize a MSL capability within

the Management & Systems (M&S) Flight as part of the Customer Service Center. MSL personnel are authorized on the LRS UMD and report to the LRS/CC through the M&S Flight. Where needed, the LRS/CC may decentralize the MSL capability to physically reside with the MXG. The LRS/CC, through the MSL, is the liaison between maintenance units and Logistics Support Centers (LSC). If MAJCOMs do not establish an MSL function, the LRS Customer Service will accomplish MSL duties. Refer to **Chapter 11** of this instruction for additional duties.

6.3.4. **(ANG)** MSL function not established.

6.3.5. Maintenance Operations Flight Plans, Scheduling, and Documentation (MOF PS&D) Section. MOF PS&D is responsible for coordinating aircraft maintenance requirements and utilization scheduling between maintenance, operations, and external agencies. MOF PS&D oversees the entire maintenance scheduling effort throughout the wing and notifies applicable senior managers of scheduling process discrepancies and recommended courses of action IAW MAJCOM and local procedures. Specific MOF PS&D responsibilities are detailed in **Chapter 7** of this instruction.

6.3.6. Maintenance Data Systems Analysis (MDSA) Section. Tracks, analyzes, and presents information to help senior leadership assess the health of the units' weapon systems and equipment. Manages the MIS and performs analyses to assess and improve unit performance (e.g., effectiveness, and efficiency of unit resources, and logistical support processes). The MIS provides the main source of information used by analysts to assess unit performance and capability. IMDS-CDB/G081 and REMIS are the prime sources of data.

6.3.6. **(ANG)** At local option, the MDSA function may be placed in QA. In either case, the responsibilities outlined below shall remain the same.

6.3.6.1. Analysis personnel will establish working relationships with MXG and squadron leadership through constant communication and frequent visits to work centers. Analysis must be customer oriented and provide assistance to all unit personnel in the area of the MIS, data extraction and interpretation. The two major responsibilities of analysis are: (1) analyzing and assessing unit and weapon system performance and (2) managing the MIS.

6.3.6.2. Processes and maintains maintenance database records (this does not infer input). Other than database files maintenance analysts will not alter source data in the MIS.

6.3.6.3. Reviews data for anomalies and identifies areas requiring further study.

6.3.6.4. Provides presentations, reports, studies/analyses, and briefings as requested or deemed appropriate.

6.3.6.5. Provides information on analysis services and capabilities to unit supervision.

6.3.6.6. Assists unit leaders with the application and interpretation of maintenance data.

6.3.6.7. Coordinates with PS&D and production leaders to provide monthly airframe, facility and personnel capabilities (as required), attrition, and spare factors for use in planning the annual flying program. Compute attrition and spare factors IAW MAJCOM instructions.

6.3.6.7. **(ANG)** Capability, attrition and spare factors guidance can be found in ANGPAM 21-103.

6.3.6.8. Provides MSL and decentralized supply support functions with data and information for input into the IREP. When available, a Deficiency Analyst will participate in the IREP to help identify and analyze problem areas.

6.3.6.9. Analyzes equipment performance trends to identify problems affecting the unit mission.

6.3.6.10. Verifies accuracy of the job data documentation (JDD) subsystem of MIS. Validates data entered into MIS as part of daily analysis duties and informs affected agencies of discrepancies. MDSA will identify erroneous or missing data to the responsible agency for correction or completion. MDSA will not correct or enter data into the MIS. This is not considered part of the Data Integrity Team process.

6.3.6.10. **(ANG)** N/A to ANG.

6.3.6.11. For units with deployment commitments, MDSA will assist in developing specific procedures for the deployment of the MIS related hardware and software. Where necessary, MDSA and the deploying squadron will work with the Communications Squadron to develop contingency procedures for ensuring connectivity of the MIS where no connection exists. These procedures must be reviewed prior to any deployment to determine if they will need modification for unique factors. All procedures must take into account unit suspenses for recurring RCS reports to the headquarters. Deployments are not a legitimate reason for missing or erroneous data. Contact MAJCOM analysis section at least 30 days before deployment for MIS connection instructions.

6.3.6.11. **(ANG)** If necessary, contact NGB/A4MM at least 30 days before deployment for MIS connection instructions.

6.3.6.12. Analysis personnel on deployments are responsible for obtaining a connection to the MIS database through local area network (LAN) or a dial up connection. It is vital that a connection to the MIS be established before beginning flying operations. Deployed analysis personnel will also ensure that aircraft status; flying hours, inventory, scheduling and deviation information, and discrepancy data is entered at the deployed location. The primary responsibility of analysis personnel is to ensure connection to the MIS, provide statistical analysis, and ensure maintenance and flying data is captured during the deployment.

6.3.6.12. **(ANG)** If Analysis does not deploy, maintenance supervision will ensure this is complied with.

6.3.6.13. Controls the assignment of unit work center and mnemonic codes. Coordinate with the Programs and Resources Flight on the assignment of alpha numeric and work center codes. Publishes written guidance to control these codes. Uses multiple mnemonic codes within a work center code to accommodate different AFSCs assigned; this enables the work center supervisor to tailor training requirements by AFSC. Coordinates new or revised mnemonic codes with affected activities for planning purposes. For G081 units, AMC will publish guidance on work center mnemonics and only one mnemonic will be assigned per work center.

6.3.6.14. Responsible for system database management. Work centers throughout the organization manage those applications and functions applicable to their environment.

6.3.6.15. Assists MIS users in developing procedures for collecting information from deployments and exercises where MIS is not available. Options available are:

6.3.6.15.1. Use any NIPRNET web connection to access MIS via AF Portal.

6.3.6.15.2. Accumulate hard copy documentation of MIS screens or locally approved means for input by work centers upon return to home station or mail delivery for extended deployments only when all other options have been exhausted. Manual documentation is the last resort for collecting data.

6.3.6.16. Monitors and evaluates the Base Repair Program/IREP data. Analysis of the aircraft maintenance portion of the Base Repair Program and IREP may provide supervisors with the data needed to determine work center repair capabilities. TO 00-20-3 contains information necessary for computing repair rates.

6.3.6.17. Maintains a current set of 5- and 7-level CDCs as technical reference material for analysts. MDSA should maintain additional books, tutorial and computer programs to enhance statistical and presentation capabilities. The requirement to maintain the CDC material is optional for contract and civil service organizations.

6.3.6.17. **(ANG)** Maintain a current set or be able to access electronically.

6.3.6.18. In addition to the general responsibilities outlined in **Chapter 3** of this instruction, the MDSA Section NCOIC will:

6.3.6.18.1. Ensure a DIT exists.

6.3.6.18.2. Ensure MIS User Group meetings are held at least quarterly.

6.3.6.18.3. Set priorities and resolve conflicts on all automated maintenance systems priorities.

6.3.6.18.4. Coordinate with wing plans personnel to develop planning data and inputs.

6.3.6.18.4. **(ANG)** N/A to ANG. The following only applies to the ANG. Coordinate with wing plans or PS&D as applicable to develop planning data and inputs.

6.3.6.18.5. Ensure timely submission of data to meet MAJCOM reporting suspenses and validity of data submissions. Work with the senior maintainers on all comments written to explain the meaning of the data presented.

6.3.6.18.5. **(ANG)** Compiles and submits the NGB/A4MM 7401 report by the 15th calendar day of each month for the preceding month. Procedural guidance can be found in ANGPAM 21-103, *Maintenance Data Systems Analysis Guide.* Ensure PS&D has processed all sorties prior to generating the NGB/A4MM 7401.

6.3.6.18.6. Ensure DBMs have the capability to support the 24-hour processing requirements for IMDS-CDB.

6.3.6.18.6. **(ANG)** N/A to the ANG. The following only applies to the ANG: The MDSA element/workcenter supervisor ensures trained database managers have the capability to support processing requirements for MIS.

6.3.6.18.7. Ensure each analyst assigned attends a local familiarization course for 2R0X1 personnel. As a minimum, the course will include weapon system/Communications Electronics (C-E) familiarization, flightline and shop operations, organizational structure and roles of each group, squadron, and flight. Analysts will attend the course within 3 months of assignment to the unit. For remote assignments, analysts will attend within 1 month of assignment. For ARC, Analysts will attend the course within 6 months of assignment to the unit.

6.3.6.18.7. **(ANG)** N/A to ANG, except for the 116 ACW active duty personnel.

6.3.6.18.8. Rotate database managers (DBMs) yearly to ensure all analysts are fully trained and have experience in this vital area (N/A to ARC). Training may be obtained through the local communications squadron, AETC specialized courses, MAJCOM specialized training, or contractor training.

6.3.6.18.8. **(ANG)** Except for the 116 ACW and 153 AW active duty personnel.

6.3.6.19. MDSA Team Concept. MDSA teams identify problem areas for additional study using MIS data gathering, research, and investigation. Deficiency Analysis/QA assists by providing in-depth technical expertise. The MDSA team will present MXG leadership with completed studies focusing on the cause and effect of problem areas, and include recommendations for course(s) of action as appropriate. At the discretion of the MDSA section NCOIC , analysts can be located in the squadron to enable maximum responsiveness and effectiveness. When analysts are located in the squadron, they will still work directly for the MDSA section NCOIC who will provide their training and monitor the quality/relevancy of their workload.

6.3.6.19.1. IMDS-CDB/G081 Users Group. Establish a IMDS-CDB/G081 Users Group to identify user problems, provide on the spot training to correct user documentation problems, and to discuss other issues relating to operation of the system. A senior maintenance leader chairs the working group. Meetings are held at least quarterly and are also conducted prior to loading a IMDS-CDB release/G081 major program change to ensure all personnel are aware of the changes. An agenda will be published and sent to all work centers prior to all meetings. A representative from the communications squadron should be invited to attend the meeting to discuss issues related to the system operations. Meeting minutes will be published and sent to all work centers.

6.3.6.19.1. **(ANG)** The MXG/CC may establish a IMDS-CDB/G081 Users Group. Otherwise duties shall be performed by the DIT.

6.3.6.20. Maintenance Information Systems (MIS). For management of IMDS-CDB and REMIS, follow AFCSM 21-series, MAJCOM and unit procedures, and REMIS user manuals. Personal computers and software used as "stand-alone" systems are not considered MIS and will not be managed by MDSA, with the exception of desktop systems required by the MDSA section. However, when any of these systems are connected to a MIS via LAN or WLAN (e.g., using TELNET, INFOCONNECT, AF Portal, etc.), they become de facto "smart terminals" for the MIS they are interfacing with. They are then subject to any parameters, conventions, and publications affecting the MIS and must be certified and accredited IAW AFI 33-202 and AFI 33-115VI, *Network Operations*.

6.3.6.20. **(ANG)** MDSA will ensure connectivity/MIS program installation and repair as required but will not manage personal computers. For management of G081, use AMC published User Guides/Desktop Reference guides.

6.3.6.20.1. IMDS-CDB and G081. IMDS-CDB and G081 interface with SBSS at base level. The AF is integrating a Point of Maintenance (POMX) capability, which is the maintenance data documentation interface to IMDS. The integrated application in IMDS-CDB and G081 requires close coordination between on-equipment and off-equipment work centers and the staff.

6.3.6.20.2. Any request to modify/create new functionality within IMDS-CDB must be documented on an AF IMT 3215, **Information Technology/National Security System Requirements Document (IT/NSRD)**, on the HQ SSG/ILM MIS web site at (**https://www.gunter.af.mil/il/ilm/C4RD/login.asp**)

6.3.6.20.2. **(ANG)** Requests to modify/create new functionality within G081 will be input on program 9038, which will create a 529, System Change Request.

6.3.6.20.3. System problems (e.g., unusual errors) should be coordinated IAW local procedures (e.g., system administrators, database managers, Field Assistance Branch (FAB)/Help Desk) as these are not considered new or modified functionality. System response and/or connectivity issues should generally be worked first locally, and at a minimum, coordinated with the local administrator/point of contact (POC)/DBM and Communications Squadron, prior to calling the FAB/Help Desk.

6.3.6.20.3. **(ANG)** G081 Managers will contact the AMC FAO for any G081 system problems.

6.3.6.20.4. Maintenance Automated Products (Nonstandard MIS Products). The use of computerized products from the IMDS-CDB/G081 and REMIS systems are major sources of information for maintenance data systems analysis. All MDSA personnel will receive training to enable them to make maximum use of these systems. This training will be documented on an AF IMT 797, **Job Qualification Standard Continuation/Command JQS** and included in the analysts' AF Form 623.

6.3.6.20.4. **(ANG)** Tasks that are not already in the 2R0X1 CFETP will be documented on an AF IMT 797, JQS and included in the analyst's AF Form 623.

6.3.6.20.4.1. Query Language Processor (QLP), Integrated Query Utility (IQU) and Structured Query Language (SQL) allow retrieval of information from IMDS-CDB database files. These utilities are intended to provide nonstandard data and report formats for specific uses and update or change data base information.

6.3.6.20.4.2. REMIS-TALK is a data retrieval system available to analysts for data extraction used similarly to QLP. This retrieval system is used to extract information from the REMIS system on Equipment Inventory, Multiple Status and Utilization Reporting Subsystem (EIMSURS), Product Performance Subsystem (PPS), and Generic Configuration Status and Accounting Subsystem (GCSAS) and the Debrief Subsystem.

6.3.6.20.4.3. FOCUS allows the retrieval of information from G081database files. This utility is intended to be used to provide nonstandard data and report formats for specific uses.

6.3.6.20.5. Documentation Accuracy and Completeness. The management information requirements of the unit are generally fulfilled by analyzing data collected through standard AF MIS systems. All personnel in the unit are involved to some extent in the documentation, processing, review, retrieval, or application of maintenance data. Data integrity is the responsibility of every member of the unit. Unit managers and production personnel are responsible for ensuring accuracy and completeness. When documentation is accurate, unit managers and logisticians have the means to improve equipment, program for spares, and allocate resources to the best effect. Subsystem monitors are responsible for ensuring the accuracy of their sub-

system. This can be accomplished by pointing out errors or problems to appropriate work center supervisors. DBMs can provide assistance when the problem is beyond the technical expertise of the subsystem manager.

6.3.6.20.6. Managing the IMDS-CDB Database. MDSA provides management control of the IMDS-CDB database. The DBM will:

6.3.6.20.6. **(ANG)** N/A to the ANG. The following only applies to the ANG: Managing the IMDS-CDB Database. MDSA provides management control of the IMDS-CDB database within the aircraft maintenance complex. N/A to the G081 units. The DBM responsibilities are as follows:

6.3.6.20.6.1. Manage the use and structural integrity of the IMDS-CDB database.

6.3.6.20.6.2. Ensure IMDS-CDB security is maintained IAW AFI 33-202 and AFI 33-115VI.

6.3.6.20.6.3. Control and monitor the operation of IMDS-CDB.

6.3.6.20.6.4. Provide expertise on IMDS-CDB for resolution of problems beyond the work center's and sub-system monitors' control.

6.3.6.20.6.5. Provide support to tenant users.

6.3.6.20.6.5. **(ANG)** If applicable, provides support to tenant users and establishes MOAs.

6.3.6.20.6.6. Coordinate with the Defense Enterprise Computing Center (DECC) or AF Network Control Center (AFNCC)on all matters concerning IMDS-CDB. The DBM has sole responsibility for coordinating with DECC. Deviations from this policy must be clearly stated in local directives and published by the host MXG/CC.

6.3.6.20.6.7. Ensure the DECC supports all requirements concerning the operation and maintenance of IMDS-CDB.

6.3.6.20.6.8. Coordinate with the DECC to confirm database save schedule and notify units of scheduled database saves. Scheduled saves should cause the least possible interruption to IMDS-CDB users. Notify affected users if errors are found.

6.3.6.20.6.9. Coordinate with the DECC and IMDS-CDB users to schedule routine preventative maintenance to ensure it will have the least impact on the unit (when the system is least used).

6.3.6.20.6.10. Coordinates as necessary between workcenters and Work Group Managers (WGM) for suspected IMDS-CDB connectivity problems. This responsibility may be decentralized into the squadrons of IMDS-CDB units.

6.3.6.20.6.11. Coordinate with other users and the DECC on loading of new releases, special programs, and changes to programs.

6.3.6.20.6.12. Coordinate and/or publish scheduled IMDS-CDB downtime.

6.3.6.20.6.13. Ensure IMDS-CDB users are aware of problems relating to their subsystems through sub-system monitor notification, including all releases and System Advisory Notices (SANs). Maintain the SAN file.

6.3.6.20.6.14. Coordinate with subsystem managers, tenant users, Remote Job Entry Terminal (RJET), and geographically seperated unit sites on scheduled maintenance of the IMDS-CDB database (e.g., Delete History NFS120 and JDD Delete History NFS760). A schedule will be produced to allow the least impact on other system users.

6.3.6.20.6.15. Notify other IMDS-CDB users and subsystem managers of unscheduled downtime status as soon as possible. When an extended computer outage occurs, DBMs notify sub-system managers of computer off-line time and determine if manual backup procedures are necessary to input data.

6.3.6.20.6.15.1. When IMDS-CDB is unavailable, the DBM, subsystem mangers, and squadron personnel will implement manual backup procedures for accumulating IMDS-CDB data. The data will be updated in IMDS-CDB when the system becomes available. Manual procedures include documentation on paper copies of IMDS-CDB screens, AFTO IMT 349, **Maintenance Data Collection Record**, and sortie maintenance debriefing documents.

6.3.6.20.6.15.2. The host DBM will develop and publish a local OI detailing manual documentation and JCN assignment procedures in coordination with MOF PS&D.

6.3.6.20.6.16. Coordinate with other functions to ensure continuity of events taking place in IMDS-CDB, including procedures for background products. When possible, backgrounds are processed during times of least on-line system use. The DBM recommends options to reduce background products, by encouraging users to use on-line capabilities of IMDS-CDB. The DBM will control the use of background products to ensure the maximum benefit with the least interruption to the system response time.

6.3.6.20.6.17. Control and distribute local unit IMDS-CDB products after processing is complete as required.

6.3.6.20.6.18. Review system response times and take action if required. The MAJCOM system response time standard is 5 seconds. System response times exceeding 5 seconds should be reported to the unit's DBM.

6.3.6.20.6.19. Notify MAJCOM of extended unscheduled MIS downtime (over 24 hours), or when experiencing problems beyond the capabilities of the unit's DBM. Units experiencing problems beyond the capabilities of the host DBM will notify the platform manager or the alternate.

6.3.6.20.6.19. **(ANG)** Notifies NGB/A4MM of extended unscheduled computer downtime, or when experiencing problems beyond the capabilities of the unit's DBM. N/A to the UAE owned F-16 block 60 program and RNAF owned F-16 aircraft.

6.3.6.20.6.20. Have access to the tools required to manage the IMDS-CDB database in the host unit. DBMs must have a password with access to TIP and Demand. The password must have access to a DA1A account for DBE/IQU. The database administrator (DBA) at the DECC, or NCC will then add the users ID to a system account. The DBM will have access to programs required to manage the IMDS-CDB database in the host unit, which will include: ACOPY, SUPUR DSKUTL, EZLOAD (FAS privileges) PSPURB, STAR (read only) and UDSMON.

6.3.6.20.6.20.1. QLP with update on demand pending approval of DECC.

6.3.6.20.6.20.2. Data Base Look (DBL).

6.3.6.20.6.20.3. Console monitoring (CONS) with display option.

6.3.6.20.6.20.4. QLP report writer. Individual analysts not directly associated with database management are still required to receive training in QLP report writer, on-line inquiries, and conversational commands to obtain nonstandard data from the IMDS-CDB database to perform analysis duties. This training will be documented on an AF IMT 797 and included in the analysts' AF Form 623.

6.3.6.20.6.21. Notify affected users if errors are found in the IMDS-CDB database and take prompt action to correct the errors.

6.3.6.20.6.22. Coordinate and control recovery procedures for IMDS-CDB.

6.3.6.20.6.23. Control and monitor submissions of IMDS-CDB DIREP, and AF IMT 3215, **Information Technology/National Security Systems Requirements Document**, and suggestions for IMDS-CDB evaluations.

6.3.6.20.6.24. Coordinate on matters pertaining to the interface of other automated systems with IMDS-CDB.

6.3.6.20.6.25. Develop and follow a functional checklist in case of the loss of an aircraft. Regardless of the time or day of week, the DBM (or alternate) will be contacted to immediately put the IMDS-CDB in File Update Mode (FUD) until the functional checklist can be completed.

6.3.6.20.6.26. Provide IMDS-CDB technical support to tenant users to assist them in maintaining their unit's database. Ensure that all tenant users are supported. DBM support requirements will be identified in a MOA or the Host Tenant Support Agreement. Refer to AFI 21-103 and AFI 21-116 for maintenance analysis and host DBM responsibilities in support of the C-E maintenance community.

6.3.6.20.6.27. Ensure that system security is maintained by performing the following:

6.3.6.20.6.27.1. Control access to specific IMDS-CDB programs and subsystems by utilizing transaction identification codes (TRICs) security profiles. Specific TRICs or options within TRICs will be restricted by the DBM on request from the subsystem manager or when the DBM deems it necessary.

6.3.6.20.6.28. Ensure IMDS-CDB subsystem managers are informed of the status of applicable TRICs prior to turning the TRIC on or off. In circumstances where a particular TRIC is turned off for extended periods of time, the DBM notifies their MAJCOM counterpart, providing rationale for leaving the TRIC in the off status.

6.3.6.20.6.29. Develop methods preventing unauthorized use of MIS equipment and data within the purview of AFI 33-332, *Privacy Act Program,* and AFI 33-202. Ensure proper control of MIS passwords. Specific instructions for REMIS passwords are as follows:

6.3.6.20.6.29.1. MDSA is the focal point to monitor user/id request forms.

6.3.6.20.6.29.2. Provide MAJCOM via message/e-mail, the name, rank, office symbol, and phone number of the focal point as changes occur.

6.3.6.20.6.29.2. **(ANG)** Provide this information to NGB-AVDO.

6.3.6.20.6.29.3. Maintain a listing of locally assigned REMIS users and provide updates to add, change or delete REMIS users upon assignment, separation, or retirement.

6.3.6.20.7. IMDS-CDB Subsystems Managers. Each IMDS-CDB subsystem is controlled by a specific subsystem manager who ensures using personnel are qualified to use the respective subsystem of IMDS-CDB and are knowledgeable of AFCSM 21-series manuals. Subsystem managers and their alternates will be identified by appointment letter from the responsible agency. Personnel using IMDS-CDB will work problems beyond their scope with the subsystem manager first. If the problem still cannot be resolved, the subsystem manager will elevate it to the DBM. Each subsystem manager reports hardware/software problems to the unit DBM, assists the MTF in developing and conducting familiarization courses for IMDS-CDB users, monitors access to their subsystem via TRIC security and approves/disapproves requests for TRIC access for users and forwards to DBM for processing. The following list assigns functional responsibilities for the various IMDS-CDB subsystems:

6.3.6.20.7.1. MDSA is responsible for the overall management of the JDD subsystem and provides overall management and control of the maintenance deferred code listing. Changes to the table will be coordinated with MOF PS&D.

6.3.6.20.7.2. MOF PS&D is responsible for overall management of aircraft operational event, special inspection, time change, TCTO, aircraft equipment transfer, GCSAS, and aircraft inventory subsystems. Coordinate with MDSA on the AEF subsystem.

6.3.6.20.7.3. The EM section is responsible for overall management and control of scheduled/unscheduled engine maintenance events concerning engine inspections, engine time changes, engine TCTOs, engine equipment transfers and engine status. CEMS is the source database for scheduling maintenance.

6.3.6.20.7.4. MOC is responsible for overall management and control of the location subsystem and aircraft status reporting (IMDS-CDB/REMIS corrections).

6.3.6.20.7.5. Avionics section is responsible for overall management and control of the Automatic Test Reporting System (ATERS) (IMDS-CDB/REMIS corrections).

6.3.6.20.7.6. Egress section is responsible for overall management and control of the egress configuration management. (IMDS-CDB/REMIS corrections).

6.3.6.20.7.7. MTF is responsible for overall management and control of the training management subsystem.

6.3.6.20.7.8. Programs and Resources Flight is responsible for overall management and control of the personnel management subsystem.

6.3.6.20.7.8. **(ANG)** Responsibility will be delegated at MXG/CC discretion.

6.3.6.20.7.9. QA is responsible for overall management and control of the DR subsystem.

6.3.6.20.7.9. **(ANG)** N/A to ANG.

6.3.6.20.7.10. MSL (if applicable) is the liaison between IMDS-CDB and supply. System problems concerning supply transactions reports (e.g., supply rejects) are brought to the attention of the MSL for correction of DIREP.

6.3.6.20.7.11. Debriefing section is responsible for overall management and control of the automated debriefing subsystem. During debrief, the debriefing section ensures accuracy of aircraft sorties and flying hours, validates PRD, validates repeat/recur maintenance actions.

6.3.6.20.8. Data Integrity Teams (DIT). All units will establish a DIT. The purposes of the DIT include: (1) ensuring the unit has complete and accurate data in the MIS and aircraft forms (to include all inputs made by staff agencies), (2) identifying and quantifying problems within the unit preventing complete and accurate documentation, (3) identifying and correcting the root causes for poor data integrity, and (4) educating the unit on the critical need for data integrity. The DIT is established to evaluate/isolate/eliminate documentation problems in IMDS-CDB/G081. MDSA is the OPR for the team, but is not responsible for correcting errors. The DIT will include at least one representative from each squadron that repairs aircraft, and will include participation from PS&D, MOC, MSL/LRS, EM, debrief, and QA on an as needed basis, as determined by analysis. MAJCOMs will determine the frequency of DIT meetings. Representatives will be at least 5-levels and familiar with the unit's assigned weapon system(s). As a minimum, the following functions will be performed by the DIT:

6.3.6.20.8. **(ANG)** The DIT/DIG must include at least one representative from each squadron that repairs aircraft, and participation from PS&D, the MOC, EM, Debrief, and QA on an as needed basis, as determined by the MDSA. The DIT shall meet monthly.

6.3.6.20.8.1. Ensure MIS accurately reflects AFTO Form/IMT 781 entries. When the two differ, the responsible work center will be charged with an error and have it included in the error rate. Examples include: mismatch of write-up in the forms versus IMDS-CDB/G081, signed off in IMTs but not closed in IMDS-CDB/G081, or completed in IMDS-CDB/G081 but not signed off in the forms, no JCN in IMTs or corrective action in IMDS-CDB/G081 does not match what's in the forms. Records checks do not cover this requirement. A minimum of one aircraft per squadron, per week will be checked, to ensure 100 percent coverage of all aircraft forms each year.

6.3.6.20.8.1. **(ANG)** A minimum of 25 percent of the fleet per quarter needs to be checked.

6.3.6.20.8.2. Compare all NRTS actions and turnarounds in IMDS-CDB/G081 with those in the SBSS to ensure they match. G081 users will request these reports from LRS. Work with supply to resolve conflicts.

6.3.6.20.8.2. **(ANG)** N/A to ANG.

6.3.6.20.8.3. Run maintenance action review background reports for all work accomplished by squadron and work center.

6.3.6.20.8.3.1. Audit the report by JCN/WCE for corrective action narratives versus action taken coding.

6.3.6.20.8.3.2. Identify suspected errors on the report by circling or marking on the report and give report to appropriate squadron for corrections. Identify and count the documentation errors.

6.3.6.20.8.3.2. **(ANG)** Automated and/or electronic processes are authorized.

6.3.6.20.8.4. Develop a system to track the number of errors by work center and squadron.

6.3.6.20.8.5. Establish a 5 day suspense to correct errors and report back to the DIT.

6.3.6.20.8.6. Check work center utilization to verify that all required maintenance actions are documented in IMDS-CDB/G081.

6.3.6.20.8.6. **(ANG)** N/A to ANG.

6.3.6.20.8.7. Maintain cumulative uncorrected and corrected error rate databases. Analyze the error rate data and prepare reports of rates and identify where errors are occurring. Error rates and causes will be briefed to the MXG/CC at least monthly.

6.3.6.20.8.7. **(ANG)** N/A to the ANG. The following only applies to the ANG. Maintain cumulative uncorrected and corrected error rate data. Analyze the error rate data and prepare reports of rates and identify where errors are occurring. Error rates and causes will be briefed to the MXG/CC at least monthly.

6.3.6.20.8.8. Do not limit the scope of DIT to JDD. Consider tracking error rates for PS&D, MOC, and debrief for ops events cancelled, but not input into IMDS-CDB/G081, that cause the flying hour reports to be wrong for sorties and flying hours. Look at ways to track status errors from MOC, debriefing errors such as no WUC/LCN loaded for a Code-3 PRD, or deviations not loaded correctly.

6.3.6.21. Analysis Functions. Analysts will use the following processes when analyzing maintenance data:

6.3.6.21.1. Maintenance Performance. Primary concerns of maintenance managers are how well the unit is meeting mission requirements, how to improve equipment performance, identifying emerging support problems, and projecting trends. Maintenance performance is compared with standards, goals, and maintenance plans. The MSE rates computed by PS&D and other performance rates computed by analysis are data sources for making comparisons. When the operational requirements are not achieved, MDSA will perform an investigation to determine the cause. As a minimum the following areas will be considered:

6.3.6.21.1.1. Are operational requirements realistically based on availability of equipment?

6.3.6.21.1.2. What are the causes for flying schedule deviations (cancellations, aborts, additions or early/ late takeoffs)?

6.3.6.21.1.3. Are specific aircraft, equipment, systems, or subsystems contributing to a disproportionate share of deviations/turbulence?

6.3.6.21.1.4. Is specific equipment failing to perform as scheduled? Does this equipment require more or less maintenance than others?

6.3.6.21.1.5. Are there enough people to meet mission needs? Are certain work centers documenting significant overtime or show consistently high utilization rates?

6.3.6.21.1.6. Is there a good balance of skills within AFSCs and between the units?

6.3.6.21.1.7. Do higher rates for repeat/recur discrepancies indicate training/experience shortfalls?

6.3.6.21.1.8. Is there sufficient time to schedule and work maintenance problems?

6.3.6.21.1.9. Are trends significant? Are the trends short term (6 months or less) or long term? Where will the unit likely be in 6-12 months?

6.3.6.21.1.10. Are there seasonal or cyclical variations? Are current variations outliers?

6.3.6.21.2. Equipment/Mission Analysis. When adverse trends are identified, further investigation may be necessary to gather facts. QA, unit managers, and work center technicians should be contacted for assistance in performing these investigations. Consolidate the results in the form of briefings or interim reports, depending upon the seriousness of the trend. The product of these reports should be viewed as indications of the unit's success in keeping equipment mission ready. Consider the following questions when reviewing negative trends:

6.3.6.21.2.1. Which systems are creating a high NMC rate? Are these the normally high systems? If so, are they higher than normal? What are the high driving components, and what is being done (or could be done) to address the problems? What factors are causing an increase or decrease in the NMC hours? Are the unit's deployments affecting the rate, if so to what extent?

6.3.6.21.2.2. Are specific aircraft or equipment causing trend distortions?

6.3.6.21.2.3. What systems have high CND, repeat or recur malfunctions?

6.3.6.21.2.4. What parts or components cause NMCS conditions? Are these normal, or is a new problem emerging?

6.3.6.21.2.5. Are the items repaired on station? Are they 2LM components? Could they be repaired locally?

6.3.6.21.2.6. Is supply support sufficient and responsive? If not, why not? Are stocks adequate?

6.3.6.21.2.7. Is the lack of training, technical data, or tools and equipment affecting certain systems or AFSCs?

6.3.6.21.3. Analytical Process. The analytical process consists of identifying contributory factors, manipulating raw data into meaningful formats, computing management indicators, performing statistical measurements, and creating accurate, complete, and easy to understand presentations. An analytical process uses a number of methods, (e.g., visual observation that is dependent upon the experience and knowledge of the observer; comparative analysis that may be performed statistically or visually and involves the comparison of two or more like operations or items to identify variations or differences, and statistical analysis or statistical investigation that is the methodical study of data). These methods are used to reveal facts, relationships, and differences about data and data elements and are a useful adjunct to comparative and visual analysis. Analysts should use these tools and other methods to perform analytical studies to gain insight into unit performance and to enhance process improvement.

6.3.6.21.4. Management Contributions to the Analytical Process. Maintenance managers have a significant impact on the usefulness of the MDSA to the unit. Managers should constantly review how information is being organized and presented. The lack of focus regarding use of data, improper arrangement of data for analysis, or unclear presentations of results can obscure meaningful information. Managers should be familiar with how data is developed,

interpreted, and presented to ensure accurate presentations of results for decision making. Special studies and analyses specifically targeted for areas of concerns to managers are valuable tools in helping units isolate factors surrounding problem areas.

6.3.6.21.4.1. Analytical Studies. MDSA will provide results of investigations, analyses, or studies to work centers. The most effective study is one that goes beyond superficial conclusions. It helps solve a problem relative to mission performance. Specific studies are provided to the requester, and a file copy is retained for future reference. Disseminate the study by electronic means or include it in a monthly maintenance summary.

6.3.6.21.4.2. The study should state assumptions up front, and should be summarized to state how the significance is measured.

6.3.6.21.4.3. Although not the only format, most studies will begin with background information. The study should include the data, research, investigation, and statistical findings, along with their respective sources. Conclusions relevant to the study should be drawn from the data, research, investigation, and statistical findings. The study should include recommendations to address the conclusions relevant to the problem (other issues uncovered can be identified, but should be kept separate).

6.3.6.21.5. Maintenance Analysis Referrals. A referral is a procedure used to identify, investigate, and propose corrective action for management problems. These are highly effective tools to make agencies aware of common problems. Referral reports are used to start the referral procedure and document the corrective actions for implementation and future reference. Due to the amount of investigation and research needed to properly process referrals, ensure they are not used for problems that can be resolved more efficiently through verbal or less formal communications. Referrals are not determined by a quota system. They are used only when necessary to affect a permanent solution to a problem that cannot be solved by other means. Referral reports must be concise, accurate, and timely to provide maintenance managers with information for making decisions. Anyone can initiate a referral, but MDSA is the OPR and assigns a referral number and maintains a log of all referrals. The log should reflect the referral number, initiating agency, date, subject, and action taken. QA will work with unit managers and work center technicians to perform investigations and recommend corrective actions. Route through the affected agencies for comments, with the final addressee as the MDSA section. Retain copies and indicate whether additional monitoring or follow-up action is necessary. Provide a completed study to each MXG QA.

6.3.6.21.6. Deficiency Analysis (Not applicable to AMC and ARC). Deficiency analysts will be a 5- or 7- level and should have at least 6 months experience on the weapon system. At least one of the deficiency analysts assigned will be a SSgt with the following skills: aircraft maintenance, off-equipment avionics, flightline avionics, or engines. Other skills may be included to effectively analyze specific functions of an aircraft weapon system. Ensure candidates have sufficient writing and math skills to perform the job. Deficiency analysis technicians will be rotated back to their maintenance section or flightline within 36 months to maintain AFSC proficiency. Deficiency analysts serve a dual role; they provide analytical support to the squadrons and maintenance managers, and also provide technical expertise for the MDSA section. They use analytical data and their technical knowledge to identify problems, work with the customer, and help find solutions. They should not limit themselves to pointing out general

areas for investigation, they should identify deficiencies applicable to a work center, particular equipment end item, maintenance practice or management action. Deficiency analysts will:

6.3.6.21.6.1. Review QA summaries for positive and negative trends.

6.3.6.21.6.2. Review debriefing data and abort information daily to assist in the identification of problem aircraft or systems.

6.3.6.21.6.3. As a minimum, perform monthly reviews of:

6.3.6.21.6.3.1. DD lists for technical errors or negative trends.

6.3.6.21.6.3.2. Repeat/recur discrepancy lists for problems.

6.3.6.21.6.3.3. High CND rates and incidents for inadequate troubleshooting or technical data problems.

6.3.6.21.6.3.4. Aircraft scheduling deviations for negative maintenance practices and trends that impact work force and workload stability.

6.3.6.21.6.4. Monitor and evaluate the maintenance portion of the base repair program and IREP.

6.3.6.21.6.5. Analyze the performance of selected systems, subsystems, and components to help determine the source of problems affecting the mission of the unit.

6.3.6.21.6.6. Attend QA and Product Improvement Working Group (PIWG) meetings and provide trend data as needed.

6.3.6.21.6.7. Deficiency analysts will not be utilized as a full time DIT monitor.

6.3.6.21.7. Dedicated AMU Analysis (where applicable). The AMU analysis function is intended to provide dedicated analytical support for the AMU. The MDSA section NCOIC may dedicate an analyst to each AMU. The dedicated AMU analyst works for the MDSA section NCOIC. Accomplishing AMU tasks are the dedicated analyst's primary responsibility. The MDSA section NCOIC is responsible for the overall effectiveness of the AMU analysis program. To improve the overall effectiveness of the dedicated analyst program, analysts should be rotated approximately every 12 months. When the analyst is not located in the AMU, they will still spend time in the AMU daily. As a minimum, the AMU analyst will:

6.3.6.21.7.1. Review maintenance debriefing data to track in-flight discrepancies and deviations on each aircraft. Review aircraft status inputs from the MOC for WUC accuracy. Closely monitor fix time on Code 3 breaks and report results to AMU supervision daily. Brief problem aircraft and systems to AMU supervision daily.

6.3.6.21.7.2. Brief comparative AMU data weekly and monthly as required by the MXG/CC.

6.3.6.21.7.3. Provide analyses as requested by AMU supervision or when identified through review of AMU performance data.

6.3.6.21.7.4. Validate CANN documentation in IMDS-CDB at least weekly, with AMU supply and inform AMU supervision of its accuracy. If errors exist, a more frequent validation may be required. Advise AMU supervision of recurring problems.

6.3.6.21.7.5. Monitor the UTE rate for the AMU.

6.3.6.21.7.6. Analyze programmed and actual attrition factors.

6.3.6.21.7.7. Attend AMU scheduling/production meetings at least once per week.

6.3.6.21.8. Maintenance Analysis. Present data by using summaries, charts, graphs, tabular displays, and narratives. These data presentations should show the relationships among various factors. Data presentations should be displayed or presented in time to be useful in plans or reports. A printed monthly maintenance summary, tailored to the needs of the unit, is an excellent method of presenting data.

6.3.6.22. **(Added-ANG)** G081 Management. This function manages and coordinates the overall use and development of G081 equipment and programs within the maintenance complex and management of the system to meet unit, ANG and AMC requirements. The G081 management element is responsible for the following:

6.3.6.22.1. **(Added-ANG)** Developing and maintaining an OI for local management of G081, which as a minimum contains:

6.3.6.22.1.1. **(Added-ANG)** Contingency plans for the support of critical areas during extended computer downtime.

6.3.6.22.1.2. **(Added-ANG)** Use of the G081 system during deployments and contingency operations.

6.3.6.22.1.3. **(Added-ANG)** GO-81 OI will include Loss of Aircraft/Aircraft Mishap instructions.

6.3.6.22.2. **(Added-ANG)** Assisting agencies within the maintenance complex to better utilize G081.

6.3.6.22.3. **(Added-ANG)** Maintaining an up-to-date master copy of all publications pertaining to G081 policies, procedures, programs, and ensuring changes are briefed to all users.

6.3.6.22.4. **(Added-ANG)** Ensuring integrity of the database is maintained by limiting user access to authorized workcenters and personnel.

6.3.6.22.5. **(Added-ANG)** Assigning USERID/Password access to G081 users. Monitoring and assisting users with LOGIN procedures. Unlocking and resetting passwords as requested by users.

6.3.6.22.6. **(Added-ANG)** Trouble Reporting. G081 management is the primary POC for reporting all G081 related problems. Trouble reporting is directed to G081 management element.

6.3.6.22.7. **(Added-ANG)** Coordinating with NGB/A4MM personnel concerning hardware and software problems when beyond the resolution capability at the Unit level or G081 Management and Field Assistance Office (FAO).

6.3.6.22.8. **(Added-ANG)** Ensuring all G081 users are informed of downtimes scheduled for preventive maintenance. Ensuring that users are aware of problems including System Deficiency Reports (529s) applicable to the functional area by evaluating all recommended F9038 program changes received from other G081 users.

6.3.6.22.9. **(Added-ANG)** Assisting maintenance activities in the proper application and interpretation of G081 technical publications.

6.4. Maintenance Training Flight (MTF). Provides initial, recurring and advanced proficiency, qualification, or certification skills needed by a technician to perform duties in their primary AFSC. Serve as the single point of contact for all training matters affecting maintenance, including outside agencies such as disaster preparedness, environmental flight and the Training Deachment (TD). The MTF consists of the Training management section and the development and instructor section. The MTF assists SQ/CCs by providing Unit Training Managers (UTM) to manage the enlisted specialty training program. The MTF Chief maintains administrative responsibility for UTMs whether UTMs are centralized or decentralized.

6.4. (ANG) Maintenance Training Flight (MTF). The typical ANG unit does not have an MTF, and the name for this function is Training Management. At local option, Training Management may be placed into QA.

6.4.1. Organizations that do not have a MTF must complete skill training in the individual work centers.

6.4.2. Maintenance training is an essential element of improving and sustaining unit capability; it must receive priority treatment by SQ/CC and Operations Officer/MX SUPT. When balancing resources (e.g., aircraft, support equipment, facilities, tools, funding, personnel), maintenance training carries an equal priority with the operational training mission. Accomplish maintenance training away from the production/test environment (whenever possible) to eliminate/minimize distractions.

6.4.3. Training requirements may be satisfied through AETC in-resident classes, TD, MTF, Mobile Training Team (MTT), AF Institute of Technology (AFIT), CDC, AFETS, civilian institutions, Computer Based Training (CBT), Video Tele-Training (VTT), Regional Training Centers (RTC), Maintenance Qualification Centers (MQC), or any combination thereof.

6.4.3.1. AETC TDs will be utilized as the primary maintenance training resource at all bases with an assigned TD. The TD will not be responsible to conduct ancillary training. The MTF will develop courses and supplement training when the training requirements are beyond the capability and timely response of the TD. The MTF will not duplicate training provided by the TD.

6.4.4. For maintenance training policy and guidance, refer to AFI 36-2232 and MAJCOM directives. Civil service and contract organizations shall perform training IAW their training plans as accepted by the government, their respective performance work statement (PWS) and MAJCOM directives.

6.4.5. Upgrade training waivers will be completed IAW AFMAN 36-2108, *Enlisted Classification* and AFI 36-2101.

6.4.6. Coordinate training course control documents (CCD) for explosive safety training through the wing weapons safety office annually.

6.4.7. **(Added-ANG)** Personnel Processing. During in-processing, Training Management and workcenter supervisors must review and evaluate all previous training completions and current workcenter requirements. The individual's training records and requirements must be updated at this time. During out-processing, Training Management must delete any scheduled training events. Any individual in UGT must be deleted from UGT and a copy of all completed training must be placed in their AF IMT 623.

6.4.8. **(Added-ANG)** Is responsible for overall management and control of the automated training management sub-system (ATS).

6.4.9. **(Added-ANG)** Manages the testing program. Tests (may be automated) must be controlled to prevent compromise. Locally developed tests must be monitored for currency and accuracy. Training Management shall coordinate with functional areas to ensure a comprehensive annual review is conducted and shall update tests when required. The 116 ACW must comply with AFI guidance for the MTF.

6.4.10. **(Added-ANG)** Training or the section responsible for conducting the training coordinates with PS&D for selecting training aircraft. Training Management must forward training requirements in a monthly format (including configuration and time periods) to PS&D by the end of the second week of each month for inclusion in the monthly maintenance schedule. Training requirements must be updated weekly and forwarded to PS&D for inclusion in the weekly maintenance plan. Aircraft down for training more than seven consecutive days must be carried in an aircraft possession purpose identifier code of TJ.

6.4.11. **(Added-ANG)** When an individual is TDY, on leave, or incapacitated, that person need not be decertified provided the required evaluations are completed within 90 days of the member's return to duty, not to exceed three calendar months from original due date.

6.4.12. **(Added-ANG)** Process and coordinates upgrade Training Waivers.

6.5. Programs and Resources Flight. Manages the manning, facilities, support agreements, and deployment functions for the MXG.

6.5. (ANG) The duties of Programs and Resources will typically be assigned to the Maintenance Training Section, but may be reassigned at the discretion of the MXG/CC.

6.5.1. Developes, maintains, and coordinates all AFI-directed programs and plans affecting maintenance.

6.5.2. Acts as the resource advisor to MXG/CC.

6.5.3. Conducts staff assistance visits (SAVs) within the MXG to assist each maintenance functional area.

6.5.3.1. Administratively evaluate a unit's ability to deploy IAW the DOC statement.

6.5.3.1. **(ANG)** N/A to ANG AETC gained units.

6.5.3.2. Conduct and document SAVs at least annually. Units will retain documentation until the next SAV unless repeat discrepancies are noted. If discrepancies are repeated, SAV documentation will be retained until the discrepancies are closed.

6.5.4. Manages manpower authorizations for the MXG.

6.5.5. Serves as the focal point within the MXG for management of facilities.

6.5.6. Serves as the focal point for MXG mobility planning and execution actions. If designated as a UTC Pilot Unit:

6.5.6. **(ANG)** N/A to ANG AETC gained units.

6.5.6.1. Coordinates with other UTC tasked units on cargo and equipment authorizations/requirements to develop and maintain a standardized package to meet specific mission capability requirements.

6.5.6.2. Coordinates with the AS monitor on equipment changes and new equipment requirements driven by the UTC.

6.5.6.3. If requested, assists with site surveys of deployment locations.

6.5.7. Oversee local, functional or host country unique support agreements applicable to the MXG IAW AFI 25-201, *Support Agreements Procedures*.

6.5.8. Develops and coordinates MXG commercial contracts unless the MXG/CC has determined another office of responsibility.

6.5.9. Monitors SORTs reporting for the MXG.

6.5.10. Coordinates with LRS to obtain unit assistance in interpreting guidance for marking/packing/marshaling of tasked equipment IAW AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*; AFMAN 10-401VI, and AFMAN 91-201.

6.6. Quality Assurance. Administratively assigned to the MOS (Not applicable to the ANG), but works directly for the MXG/CC. Refer to **Chapter 8** of this instruction for QA responsibilities.

6.6. (ANG) Applicable to the 116 ACW and 153 AW for active duty personnel.

Chapter 7

MAINTENANCE PLANS, SCHEDULING AND DOCUMENTATION (PS&D)

7.1. General. In CAF units, maintenance schedulers will be assigned to both MOF and AMU PS&D sections. In MAF units, aircraft maintenance schedulers are centralized in the MOF PS&D section. Maintenance documentation maintains historical documents and maintenance data essential for the development of wing plans and schedules and is an integral part of all PS&D functions. PS&D sections maintain historical maintenance data within the MIS. The accuracy of maintenance document entries is a basic responsibility of the initiator and supervisors. PS&D sections develop wing maintenance plans using MIS aircraft historical data input by all maintenance personnel. ***NOTE:*** In MAF units, AMU PS&D functions listed throughout this chapter will be performed by MOF PS&D. If CAF units centralize PS&D functions with MAJCOM concurrence, AMU PS&D responsibilities listed in this chapter will be performed by MOF PS&D.

7.1. (ANG) For the ANG the MOF and AMU PS&D sections are typically the same and located in the MOF. The 162 FW in coordination with LM Aero, GE, and UAE shall develop local written procedures in an OI/Sup addressing all UAE F-16 block 60 program PS&D requirements. The 178 FW and the RNAF maintenance liaison office shall develop local procedures for PS&D requirements for the RNAF owned F-16 aircraft.

7.2. Maintenance Operations Flight (MOF) PS&D Section. The MOF PS&D section NCOIC is the wing 2R1XX functional manager and advisor to all maintenance scheduling activities. The 2R1XX functional manager will ensure the following duties are performed:

7.2.1. Collect data monthly for assigned, inbound and outbound personnel to ensure equitable distribution of personnel in each of the maintenance scheduling sections. Coordinate on all Authorization Change Requests (ACRs) submitted to base manpower involving 2R1XX positions. (N/A to the ARC and ANG except the 116th ACW)

7.2.2. Visit all decentralized scheduling activities quarterly (semiannually for contract and civil service organizations) and provide technical assistance where needed. During the visit, ensure historical documents are properly maintained. Provide formal written reports of deficiencies found during visits to the MOS/CC, QA, applicable unit supervision and SQ/CC. Affected scheduling activities will provide written responses addressing deficiency resolution through their CCs to all addressees. Deficiencies will not be closed until validated by the functional manager. (N/A to the ARC and ANG except for 116 ACW)

7.2.3. Establish and coordinate plans for rotating 2R1XX personnel through various duty positions to increase field knowledge and experience every 24 months, not to exceed 36 months. This rotation plan applies to TSgts and below as well as 3- or 5-skill level personnel of any rank. Affected commanders will resolve any rotation conflicts. Rotating civil service and contractor maintenance personnel is a local/contract management decision. (N/A to the ARC and ANG except for 116 ACW)

7.2.4. Perform initial evaluations for all incoming 2R1XX personnel. Provide a written assessment of the individual's training needs to the gaining squadron. Initial interviews will be documented on an AF IMT 623A, **On-the-Job Training Record Continuation Sheet**, and filed in the individual's training record IAW AFI 36-2201 and MAJCOM supplements.

7.2.4.1. Develop and periodically review training programs for all 2R1XX personnel. The training plan must include familiarization with assigned weapons systems, core task training/certification procedures and continued proficiency in scheduling and documentation techniques.

7.2.4.1.1. Ensure personnel receive weapon system familiarization training, if not already familiar, through the MTF/TD within 3 months of assignment. If courses are not available, coordinate with the appropriate maintenance activity for familiarization training. Document familiarization training in the individual's training record. For ARC, PS&D will attend the course within 6 months of assignment to the unit.

7.2.4.1.1. **(ANG)** N/A to ANG, except for the 116 ACW and 153 AW active duty personnel.

7.2.4.1.2. Civil service and contractor maintenance organizations must comply with training plans established in the PWS, PRS or SOW.

7.2.4.2. Provide functional expertise on all maintenance scheduling issues and equipment historical document (AFTO IMT 95) management to QA during inspection/evaluations.

7.3. AMU PS&D Section. AMU PS&D will report directly to AMU supervision, not production supervisors. Refer to MAJCOM instructions for additional AMU PS&D responsibilities. AMU PS&D personnel will:

7.3. (ANG) N/A to ANG.

7.3.1. Attend and actively participate in daily, weekly, monthly, quarterly and yearly flying scheduling programs and meetings IAW this chapter and:

7.3.1.1. Inform AMU supervision and MOF PS&D of maintenance capabilities or limiting factors that could affect maintenance production.

7.3.1.2. Coordinate with AMU supervision and OS operations schedulers when scheduling AMU aircraft to meet flying requirements.

7.3.1.3. Coordinate the scheduled use of shared resources with MOF PS&D. Changes during the affected week will be documented on an AF IMT 2407.

7.3.1.4. Provide MOF PS&D a listing of JCNs for next week's scheduled maintenance by 1600 Friday if JCNs are not listed in the weekly flying and maintenance schedule. This list will be used to track MSE. AMU PS&D will assist MOF PS&D in determining causes of missed maintenance for reporting MSE.

7.3.2. Generate AFTO IMT 103, **Aircraft/Missile Condition Data**, to record certified maintenance needs for aircraft PDM IAW TO 00-25-4, *Depot Maintenance of Aerospace Vehicles and Training Equipment,* and forward it to MOF PS&D.

7.3.3. Establish jacket files for aircraft and maintenance historical documents IAW AFMAN 37-123 and TO 00-20-1 and dispose of documents IAW AF Records Disposition Schedule located at **https://afrims.amc.af.mil/**. Aircraft jacket files will be maintained in the PS&D office and standardized IAW the master aircraft historical file developed by MOF PS&D. Documents decentralized to sections maintaining installed-on equipment (e.g., fuel cell records at fuel systems section, landing gear strut records at hydraulics section) are filed by, and the responsibility of, the OWC. PS&D will list all historical records, including those decentralized in their file plan or office of record. The DD Form 2861,

Cross-Reference, will be used to cross-reference documents decentralized from PS&D to other sections. PS&D personnel will:

7.3.3.1. Ensure individual documents are kept for end items, subsystems and components IAW 00-20 series TOs, this instruction, AFMAN 37-123, AF Records Disposition Schedule located at **https://afrims.amc.af.mil/** and applicable Dash 6 TOs. MIS automated history is used in place of AFTO IMT 95 to document significant historical events on aircraft, engines, AGE and armament equipment. When an AFTO IMT 95 is initially automated, an entry will be made on the manual AFTO IMT 95 indicating the date and location of the event. Additionally, the following statement will be entered in ink on the original AFTO IMT 95; "Automated history started this date". Printed MIS automated 95s will be attached to the original AFTO IMT 95 and filed in the equipment record. Print a new automated 95 for aircraft installed components requiring an AFTO IMT 95 IAW Section 5 of the applicable Dash 6 TO and attach it to the original AFTO IMT 95. A copy of a MIS automated history or equivalent must be printed/down loaded (on a disk or CD) annually and be available at all times. Documents for non-powered AGE, training equipment and common equipment items requiring very little maintenance documentation may be grouped together in a single folder or area to eliminate keeping a record folder on each individual item. When this is done, documents for similar items should be grouped together and the recorded information should be identifiable to particular pieces of equipment.

7.3.3.2. When aircraft are temporarily moved to operating locations away from the unit of assignment, send only those documents necessary to ensure safety of flight and current aircraft status. Units will develop written procedures for records taken to deployed locations based on duration of TDY and peculiar operating requirements. When pertinent documents are not sent with the aircraft, accumulated airframe hours, TCTO status, TCI status data on installed engines and critical components are sent from the operating location to the parent unit as specified by MAJCOM instructions.

7.3.3.3. Review aircraft jacket files and associated decentralized records annually using the MOF PS&D-developed checklist. The last completed checklist must be kept on file in each aircraft jacket file. AETC units possessing aircraft designated as trainers (i.e., T-37, T-6) will accomplish an aircraft jacket file review on 50 percent of the assigned fleet semi-annually with the objective of accomplishing 100 percent of the fleet annually.

7.3.3.4. Maintain inactive (pulled) AFTO Form/IMT 781 series IAW the *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil**. Before filing, AFTO IMTs 781 must be reviewed to ensure no forms are missing, page number blocks are correct and the "from" date matches the "to" date from previous forms IAW TO 00-20-1. If forms are missing, send a missing form letter to the appropriate section NCOIC with a 5 duty-day suspense. If a response is not returned within 5 duty days, notify maintenance supervision. If the forms cannot be located, file the missing form letter, endorsed by the section NCOIC and maintenance supervision, in the aircraft jacket file in place of the missing forms. Units using fully automated forms will maintain the last 7 copies of the aircraft forms in the aircraft jacket file in PS&D. When the 8th report is received, destroy the earliest record. Units not required to use MIS, will use aircraft forms maintaining the current and last 3 month's worth of closed aircraft forms in the aircraft jacket file.

7.3.3.4. **(ANG)** Units using fully automated forms will maintain the last 7 copies of the aircraft forms in the aircraft jacket file in PS&D, but may maintain more at the MXG/CC's option.

7.3.3.5. Comply with hangar queen aircraft records management procedures in **MAJCOM Supplements.**

7.3.3.5. **(ANG)** For the ANG hangar queen aircraft records management procedures, see **Chapter 14** of this instruction.

7.3.4. Manage the following programs for assigned aircraft: TCTOs, TCIs and SIs (including installed engine inspections) IAW guidance in this chapter. Individual work centers accomplishing TCIs are responsible for changing configuration information in MIS. The performing work center supervisor and PS&D must conduct supervisory reviews of configuration change, TCTO, SI and TCI events using MIS on-line capabilities. Unless otherwise specified in local procedures, schedulers must process IMDS screen 128 for all removal, installation, TCI, SI and TCTO compliance updates for any items installed on the aircraft. EM must process IMDS screen 128 for engines and engine components. In addition:

7.3.4.1. Attend TCTO planning meetings when aircraft or equipment are affected and initiate/maintain folders for applicable TCTOs. TCTO folders will be standardized IAW MOF PS&D guidance. AMU PS&D will attend the monthly TCTO review meeting hosted by MOF PS&D.

7.3.4.2. Manually update MIS products as changes occur IAW procedures established by MOF PS&D.

7.3.4.3. Correct TCI and SI program discrepancies identified by the MOF PS&D time change monitor as soon as possible. Provide MOF PS&D with MIS products or other documentation of the corrections.

7.3.5. Wing AerospaceVehicle Distribution Officer (AVDO). MOF PS&D performs the AVDO function IAW AFI 21-103 and maintains the inventory portion of the MIS Inventory, Status and Utilization subsystem. AVDO will:

7.3.5.1. Coordinate all assignment/possession changes through the MAJCOM AVDO IAW AFI 21-103 and AFI 16-402.

7.3.5.2. Develop written procedures for the accounting of aircraft flying hours in the appropriate MIS IAW AFI 21-103. The procedures will provide guidance for daily reconciliations of all sorties flown and will ensure the MIS is reconciled with operations and all changes are completed NLT the 4th calendar day of the month.

7.3.5.3. Maintain a PDM schedule by tail/serial number for all aircraft and equipment in support of AFMC and MAJCOM plans and requirements. This listing will contain all MAJCOM directed modification and maintenance programs. Publish these schedules in monthly and quarterly maintenance plans.

7.3.5.4. Manage the aircraft transfer/depot program. Coordinate any changes to the transfer/depot/DFT/CFT programs with AMU PS&D sections and all affected agencies. Forward copies of all schedules and changes to the MAJCOM-AVDO.

7.3.5.4. **(ANG)** The ANG will not forward copies of all schedules and changes to the NGB-AVDO.

7.3.5.5. Coordinate with PS&D and QA on all AFTO IMT 103s and submit them IAW TO 00-25-4. Coordinate any resulting changes to the depot program with affected scheduling functions.

7.3.5.6. Comply with Dash-21 equipment accountability requirements in AFI 21-103 and MAJCOM supplements. Dash-21 accountability may be decentralized to AMU PS&D, however; MOF PS&D will continue oversight and set policy.

7.3.5.6. **(ANG)** The MXG/CC may determine which workcenters shall perform this function.

7.3.6. Job Standard Master Listing (JML) Management. MOF PS&D maintains (load, change, and delete) the JML for all inspections and time changes listed in the applicable aircraft Dash 6 and commodity TOs. The EM section maintains the portion of the JML for engine inspections and time changes. Maintain JMLs for off-equipment items in the OWC. Provide written guidance and training for JML management of off-equipment Job Standards (JSTs) when MOF PS&D authorizes OWCs to maintain it. For units using G081, MAJCOM weapon system managers must maintain master inspection and time change requirements. Once Master Job Standard Numbers (MJSNs) are fielded for a weapon system, local PS&D must review TO 00-20-2 for MJSN procedures. MOF PS&D must load, change and delete JSTs in the MIS as soon as possible after receipt of any Dash 6, or other TO, TCI or inspection change and promptly notify all affected PS&D sections for action. MOF PS&D shall:

7.3.6.1. Load JSTs for all aircraft Dash 6 special/scheduled inspections in the MIS. For units using G081, the AFTO Form/IMT 781D, **Calendar and Hourly Item Inspection Document**, is a shared responsibility with the weapons system manager for loading inspection requirements. PE, PH, engine changes and other event type inspections as they occur (e.g., hard landing) are loaded as a JST in the MIS. Provide training for maintaining profile JSTs as necessary.

7.3.6.2. Perform a semi-annual review of the JML and all JSTs (other than profile JSTs managed by QA) for accuracy and currency. Reconcile TCI and SI JSTs with the aircraft Dash 6 and applicable commodity TOs. Document the semi-annual review on AF IMT 2411. Units may create JSTs in the MIS to automate required documentation of repetitive complex tasks (e.g., engine change, phase inspection, flight control maintenance).

7.3.6.2. **(ANG)** QA does not manage profile JML and JSTs, only reviews. Document the semiannual review on AF IMT 2411, or electronic equivalent.

7.3.6.3. Develop a matrix/chart depicting the total number of SI and TCI requirements to be loaded in the MIS for each assigned aircraft and verify against the MIS totals weekly. Provide PS&D a list of all discrepancies found. Overdue and uncorrected discrepancies must be briefed weekly during a wing daily production/scheduling meeting.

7.3.6.3. **(ANG)** Maintain the TCI and SI matrix using MSAT. Brief at the daily production meeting as required.

7.3.6.4. Monitor the inspection and time change subsystems in the MIS. Perform a comprehensive quarterly review of all inspections, SIs and TCI JSTs for each assigned aircraft. Look for missing and/or excess inspections and TCIs loaded to the aircraft. Ensure the accuracy of all due dates/times for TCIs and verify the date of manufacture (DOM) and date of installation (DOI). Document the review, establish a suspense date, forward the report to the applicable PS&D and follow-up to ensure corrections are received. Maintain the report on file with corrective actions until the next review. The use of automated verification tools is encouraged provided MIS data is the source for verification.

7.3.6.4. **(ANG)** Units shall use MSAT to conduct semi-annual reviews and ensure accurate data in the MIS. Semi-annually review all inspection and time change job standards against all assigned aircraft.

7.3.7. Standardized Procedures. MOF PS&D publishes written guidance to ensure standardized core scheduling practices across the wing to include:

7.3.7.1. Automated and AFTO IMT 95 documentation requirements.

7.3.7.2. Standardized aircraft jacket files. MOF PS&D must develop and maintain a standardized master aircraft jacket file for use throughout the wing. Wing assigned aircraft jacket files must mirror the standard in organization and appearance. Slight variations in composition are allowed between different MDSs.

7.3.7.3. Missing IMTs policy requirements and annual jacket file review checklists.

7.3.7.4. Pre-dock and post-dock inspection meeting guidance to supplement this chapter and identify minimum required attendees. PS&D will attend meetings and notify the AMXS/CC, MXS/CC, MOS/CC and appropriate flight supervisors of any recurring problems.

7.3.7.5. Inspection requirements for historical documents at all decentralized scheduling activities IAW this chapter and MAJCOM guidance.

7.3.7.5. **(ANG)** N/A to the ANG.

7.3.7.6. Management of the wing's SI, TCI, TCTO and Aircraft Configuration Management (ACM) programs IAW this chapter and MAJCOM guidance. Assign specific responsibilities for each work center involved (e.g., egress, aircrew life support, survival equipment and PS&D) and establish procedures to ensure configuration data is maintained during routine maintenance actions. TCI and TCTO procedures must outline the requirements for ordering hazardous materials (e.g., batteries). Units using MIS will not delegate suspense validation processing for TCIs installed on aircraft to the performing work center unless the written procedures include: a list of work centers and specific technicians authorized to process suspenses, a list of the specific suspenses authorized to be cleared and the method for notifying PS&D of the work completed (an audit trail). EM will process all MIS suspense validations for engines and engine components.

7.3.7.6. **(ANG)** Use of MSAT is mandatory in ANG units using IMDS.

7.3.7.7. Common formats for TCTO folders and monthly/weekly utilization and maintenance schedules across the wing. Folders and schedules will be standardized among the same MDS, but may vary slightly between MDSs.

7.3.7.8. Freezing and consolidating aircraft and equipment records in the event of an accident, mishap or impoundment.

7.3.7.9. Aircraft and equipment transfer inspections IAW this chapter.

7.3.7.10. Accomplishment of an Aircraft Documents Review (ADR) for home station and deployed units. The procedures will identify who initiates the ADR, reviewing agencies (to include the OAP lab), AFTO Form/IMT 781 entry requirements and the agency responsible for completing the AFTO Form/IMT 781/MIS entry. Procedures will also outline any configuration verification requirements.

7.3.7.11. Verifying configuration items during aircraft phases.

7.3.7.12. Procedures to update manual products in the event Maintenance Scheduling Application Tool (MSAT) and the MIS are not available for an extended period of time (more than 48 hours). Paper MIS products are not required when using MSAT (IMDS users only) or the most current AF standardized Aircraft Maintenance Scheduling Mission Support Application to facilitate the management of MIS data. The back-up plan will ensure access to the most current paper or electronic version of MIS products used in MSAT. The MSAT administrator will be assigned to MOF PS&D.

7.3.8. Maintenance Schedules. MOF PS&D builds, coordinates, publishes and distributes an integrated aircraft schedule to support required maintenance and flying operations. Plans and schedules may be published via electronic means (e.g., web pages or E-mail) provided operations security is not compromised. Normal daily operations and training schedules are FOUO and should not be restricted to classified systems. MOF PS&D personnel will:

7.3.8.1. In conjunction with MDSA, provide planning factors for aircraft availability and maintenance capability to operations and maintenance managers and inform them of deviations from maintenance schedules.

7.3.8.2. Coordinate development of the wing's annual flying and maintenance program.

7.3.8.3. Participate in the wing quarterly, monthly and weekly scheduling meetings.

7.3.8.4. Participate in the daily production/scheduling meeting. Representatives from MOF PS&D, each AMU PS&D and EM must attend the wing daily production/scheduling meeting.

7.3.8.5. Monitor aircraft utilization and maintenance resources to ensure wing programs and commitments are met and that shared resources and schedules are deconflicted. Ensure aircraft and equipment are scheduled to meet all training needs. Review weekly and monthly training schedules prior to publication to minimize impact on production and facilities.

7.3.8.6. Compute MSE IAW MAJCOM instructions and forward data to MDSA.

7.3.8.6.1. **(Added-ANG)** Aircraft Maintenance Scheduling Effectiveness (MSE) Rate. The MSE rate is the percentage of scheduled aircraft maintenance events that were completed on or prior to the date printed in the weekly schedule. An event is considered completed when the last step of the actual scheduled event is completed. Examples of this would be the last step listed in the pre-dock work card of a periodic or isochronal inspection.

7.3.8.6.2. **(Added-ANG)** The purpose of the MSE rate is to measure the success of a unit in executing its planned maintenance schedule. Scheduled maintenance events are weighted using a measurement criteria intended to reflect the relative magnitude of the events. **Table 7.1. (Added)**, Scheduled Maintenance Actions, lists the scheduled maintenance actions and their weight factors. MSE Rate = (Maintenance points earned/ maintenance points possible) X 100.

Air National Guard Standard is 95 percent.

Table 7.1. (Added-ANG) Scheduled Maintenance Actions. (Note 1)

ITEM	SCHEDULED ACTIONS	POINTS
1.	Phase Inspection: Periodic (PE) or Isochronal (ISO) (Note 4)	30
2.	Home Station Check (HSC)/Hourly Post Flight (HPO)	20
3.	Time Compliance Technical Order (TCTO)	20
4.	Engine Time Change (Note 2)	20
5.	Aircraft Time Change (Note 2)	20
6.	Special Inspection (Note 2)	15
7.	Wash, Corrosion, Prep, and Paint (Note 2)	15
8.	Delayed Discrepancy (Note 2)	5
9.	Document Review	5
10.	Transfer Inspection or Acceptance Inspection	3
11.	Maintenance and Aircrew Trainers/Static Display	2
12.	Other Scheduled Action (Note 3)	2

NOTES:

1. Points are only earned for scheduled maintenance events on tail numbers printed in the weekly schedule. Use the event completion month as the basis for when to report points possible and earned..
2. Non-PE, ISO, HSC, or HPO..
3. Action not listed in the first 11 categories..
4. C-17 HSCs..

7.3.8.7. **(Added-ANG)** Assists workcenters in assigning ID numbers and automated tracking of inspection criteria.

7.3.8.8. **(Added-ANG)** Ensure that all borescope inspections are loaded against the engine and not the aircraft.

7.4. Flying and Maintenance Planning Cycle. MAJCOMs shall develop procedures to ensure the intent of the operational planning cycle is met. The objective of the operational planning cycle is to execute the wing flying hour program consistent with operational requirements and maintenance capabilities. This process requires operations and maintenance cooperation. The operational planning cycle begins with the annual allocation of flying hours and UTE rates. Maintenance schedulers must understand operational needs to determine supportability and operations schedulers must consider maintenance capabilities. Maintenance and operations schedulers will develop a proposed annual flying plan balancing both operational requirements and maintenance capabilities. The annual plan, detailed by month, will evaluate the capability of maintenance to support the annual flying hour program. The plan will be developed, coordinated and consolidated jointly by Operations Support Squadron (OSS) Current Operations Flight Scheduling, MOS MOF PS&D, and forwarded to MDSA, Current Operations Flight/CC, MOF/CC the

operational SQ/CC, and AMXS/CC.. The printed wing plan will include an assessment of the wing's ability to execute the flying hour program. The plan will be coordinated with the OG/CC and MXG CC before being approved by the WG/CC. Commit the fewest number of aircraft possible to meet programmed UTE rate standards and goals.

7.4. (ANG) MXG/CC and OG/CC will develop procedures to ensure the intent of the operational planning cycle is met in a Wing OI.

7.4.1. If applicable, MAJCOMs shall develop scheduling procedures for units involved in Operational Test and Evaluation, Developmental Test and Evaluation, or Initial Operational Test and Evaluation to ensure the intent of the flying and maintenance planning cycle is met.

7.5. First Look Requirements. Every year, on or about 15 March, MOF PS&D will task MDSA to accomplish an airframe capabilities assessment. This assessment will take into account personnel, facilities, and airfield infrastructure for each aircraft maintenance organization NLT the last workday of March.

7.5. (ANG) N/A to the ANG. All subparagraphs in section **7.5.** are also N/A to the ANG.

7.5.1. MOF PS&D will provide copies of the capability study to each OS and maintenance scheduling section. AMU PS&D will provide first look maintenance capability projections in a monthly format IAW MAJCOM procedures to maintenance supervision, OS operations officers, AMXS/CC, and MOF PS&D. Projections include operational requirements, an assessment of maintenance's ability to support the monthly requirement and an overall assessment of the unit's maintenance capability to meet the annual flying hour program.

7.5.2. AMXS and OS coordinated responses are sent to MOF PS&D and OSS Current Operations Flight Scheduling and are consolidated into a comprehensive package that includes a breakdown of the following items by OS:

7.5.2.1. Sortie UTE Rates (N/A to MAF units). Compute UTE rates by month for the entire fiscal year for contracted (required) sorties and scheduled sorties using the formula: (number of sorties per month) divided by (number of PAI aircraft).

7.5.2.2. Sorties contracted/scheduled per day (N/A to MAF units). Compute the number of sorties required per operations and maintenance (O&M) day to meet the operational requirement using the formula: (Number of sorties required) divided by (number of O&M days in a given month). Sorties per day will be computed by month for the entire fiscal year.

7.5.2.3. Monthly scheduled sorties (N/A to MAF units). Compute monthly scheduled sortie requirements using the formula: (Number of sorties or hours required) divided by (1 minus the attrition factor). Example: (1,000 sorties or hours required) divided by (1 minus 0.15) equals 1,177 sorties or hours to schedule. Remember to round any part to the next whole sortie or hour.

7.5.2.4. Inspection dock capability. Compute the number of PH/ISO inspections to be accomplished for each maintenance unit, by month, for the entire fiscal year in order to meet operational requirements. Compute dock capability using the formula (number of O&M days) divided by (number of PH/ISO days) times (inspection cycle).

7.5.3. Once compiled, packages shall be presented to the OG and MXG/CCs before being presented to the WG/CC for final approval. Final assessments of maintenance capabilities to support the operations "first look" projections are sent to MAJCOM DO/A4 as necessary.

7.6. Annual Maintenance Planning Cycle. MAJCOMs shall develop procedures to ensure the objectives of the annual maintenance planning cycle are met. The annual maintenance planning cycle ensures proper and effective use of maintenance resources. Schedulers use quarterly planning to assess maintenance's ability to support flying-hour programs, PDM schedules, TCTO programs, scheduled inspections and exercises. Automated products are used to assist in planning. Include all known operational events (e.g., exercises, deployments, surges) to determine maintenance capability to meet operational needs.

7.6. (ANG) MXG/CC and OG/CC will develop procedures to ensure the objectives of the annual maintenance planning cycle are met in a Wing OI.

7.6.1. Flying Hour Allocation. Using the MAJCOM Baseline Allocation message, MOF PS&D and OS/OSS scheduling provide affected work centers the following planning factors NLT 20 August each year, or within 10 working days after receipt of the flying hour allocations:

7.6.1.1. Updated capabilities computed by MDSA, provided by MOF PS&D.

7.6.1.2. Required flying hours and estimated sorties and missions, provided by OSS, in monthly increments.

7.6.1.3. Flying days in each month, provided by OSS.

7.6.1.4. Aircraft and aircrew alert requirements, provided by OSS.

7.6.1.5. Known and projected TDY and special mission requirements, provided by OSS.

7.6.1.6. PDM schedule, provided by MOF PS&D.

7.6.1.7. Configuration and munitions requirements, provided by OSS.

7.6.2. NLT 1 September, or within 10 working days after receipt of the planning factors, maintenance supervision provides MOF PS&D, MOF/CC, AMXS and OS and OSS scheduling the following planning factors:

7.6.2.1. Estimated number of aircraft available by month, taking into consideration aircraft required for training.

7.6.2.2. A projected airframe capability statement.

7.6.2.3. Forecasted personnel capability, taking into consideration required annual training for maintenance personnel. (Not applicable to contract maintenance organizations).

7.6.2.4. The number of supportable sorties for each month.

7.6.2.5. An estimated monthly attrition factor (N/A to MAF units) provided by MDSA. This factor combines operations, weather and materiel (maintenance and supply) factors. Maintenance is responsible for adding the attrition factor to operational requirements.

7.6.2.6. A recommended block scheduling pattern.

7.6.2.7. A statement of limitations.

7.7. Quarterly Planning. MAJCOMs will develop procedures to ensure the objectives of the Quarterly Planning cycle are met. Quarterly planning starts with the operational requirement for flying hours, UTE rate, airframe availability, alert and other related scheduling data. The OS operations officer provides these requirements to maintenance supervision and PS&D NLT 25 days before the beginning of the quar-

ter. Maintenance supervision and the OS operations officer discuss these requirements at the scheduling meeting before the quarter being planned.

7.7. (ANG) MXG/CC and OG/CC will develop procedures to ensure the intent of the objectives of the quarterly planning cycle are met in a Wing OI.

7.7.1. Schedulers ensure quarterly plans are as detailed and accurate as possible. Include known special missions, PDM schedules, HHQ commitments and lateral command support requirements. All maintenance requirements will be consolidated into a single quarterly plan using AF IMT 2401, **Equipment Utilization and Maintenance Schedule** or computer generated form. As a minimum, the quarterly plan shows the current month and the next 2 months known flying and maintenance requirements. Known maintenance requirements are defined as any maintenance event that impacts aircraft availability and maintenance events requiring management attention to ensure smooth flow of scheduling/completion. Maintenance events should be consolidated during a single down period to the greatest extent possible. As a minimum, include calendar inspections that prevent operational utilization for that day(s) flying schedule, calendar TCIs, TCTOs in workable status, PDM schedules, training aircraft, cannibalization aircraft and aircraft ISO/PE/PH inspections. Specific locally developed codes will be used to identify each different SI, TCI and TCTO on the AF IMT 2401. Other maintenance requirements, such as engine changes, hourly requirements, acceptance/transfer inspections, training aircraft and cannibalization aircraft will be posted as they become known or planned. Add AME inspections to the quarterly plan if the aircraft is scheduled to stay in that configuration to ensure the inspections are included in the monthly and weekly schedules. Refine monthly and weekly schedules to ensure the quarterly plan objectives are met while staying within the maintenance capability. Use the following priority to determine which objectives to support if a lack of resources prevents meeting requirements:

7.7.1.1. Alert commitments

7.7.1.2. HHQ directed missions.

7.7.1.3. Training.

7.7.2. The OG/CC and MXG/CC chair a quarterly meeting NLT 14 days before the next quarter. OSS Current Operations Flight scheduling compiles, coordinates and briefs the unit's quarterly plan and includes operational requirements, support capability and any difficulties expected. Once an approved quarterly plan is established, OSS Current Operations Flight Scheduling will forward a copy to OS, AMXS, OG and MXG/CCs along with all scheduling agencies. The plan will be posted so it may be viewed by both maintenance and operations.

7.7.2. **(ANG)** The schedule can be published electronically.

7.8. Monthly Planning. MAJCOMs will develop procedures to ensure the objectives of the monthly planning cycle is met. Forecast and monitor requirements for the current and next 2 months. Include predictable maintenance factors based on historical data along with other inputs, such as flow times for maintenance, turnaround times and parts replacement schedules. Include all known operational events (e.g., exercises, deployments, surges) to determine maintenance's capability to meet operational needs. The OS operations officers and maintenance supervision shall review their applicable portion of the monthly maintenance plan and weekly schedule prior to submission to MOF PS&D. To optimize aircraft and munitions support, MXS, AMXS and OS CCs shall ensure the number of aircraft and/or munitions configurations are minimized and standardized. The monthly schedule refines the quarterly plan:

7.8. (ANG) MXG/CC and OG/CC will develop procedures to ensure the objectives of the monthly planning cycle are met in a Wing OI.

7.8.1. NLT the first weekly scheduling meeting of the month, the OS operations officer provides maintenance supervision and PS&D with the estimated operational needs for the following month in as much detail as possible. Include known takeoff times, landing times and flying hour windows. ***NOTE***: Landing times are not required if the unit has an established and constant average sortie duration.

7.8.2. NLT the second weekly scheduling meeting of the month, maintenance supervision tells the OS operations officer whether requirements can be met or limitations exist. Make adjustments to the proposed schedule to satisfy maintenance and operational requirements.

7.8.3. NLT the third weekly scheduling meeting of the month, formalize next month's plan prior to presenting it to the WG/CC for approval. During the Wing/CC's monthly meeting, OS scheduling outlines past accomplishments, status of flying goals, problems encountered and detailed needs for the next month. AMXS and PS&D outlines projected maintenance capability and aircraft/equipment availability. If conflicts arise between operational requirements and maintenance capability, present alternatives and limitations. MXG/CC, OG/CC and WG/CC decide what portion of the mission to support and to what degree.

7.8.4. When the WG/CC approves the proposed monthly flying plan, MOF PS&D includes it as a portion of the monthly flying and maintenance plan. Monthly plans may be published electronically provided local security requirements are met.

7.8.5. The monthly flying and maintenance plan combines all aspects of aircraft utilization and includes:

7.8.5.1. A detailed monthly operations utilization calendar that specifies total aircraft flying hours, total sorties and missions, alert requirements, scheduled sortie or mission requirements and daily turn plans for each MDS by squadron, group or wing. Do not assign attrition sorties to a specific aircrew/mission for the monthly planning process.

7.8.5.2. Monthly maintenance requirements (as required):

7.8.5.3. Transient work schedule, if applicable.

7.8.5.4. Scheduled inspections, TCTOs, engine changes, time changes, DDs, contract or depot maintenance, washes, corrosion control, training aircraft and all other known maintenance requirements.

7.8.5.5. SE scheduled inspections, contract or depot maintenance, TCTOs, time changes, DDs, washes and corrosion control.

7.8.5.6. Avionics and other off-equipment maintenance scheduled inspections, TCTOs, assembly or repair operations.

7.8.5.7. Engine/module 6-month removal forecast and in-shop inspection requirements.

7.8.5.8. Munitions, photo, ECM and other mission loading or configuration requirements, including ammunition changes.

7.8.5.9. Total ordnance requirements for aircraft support.

7.8.5.10. Tanks, racks, adapters and pylons (TRAP) and WRM scheduled inspections, TCTOs, assembly or repair operations.

7.8.5.11. Special activities, such as CC calls, group TDY, physical training, and unit formations.

7.8.5.12. Monthly training schedules, if not published separately.

7.8.5.13. Detailed support requirements, as necessary:

7.8.5.13.1. Petroleum, oil and lubricants (POL) servicing.

7.8.5.13.2. Supply requirements.

7.8.5.13.3. Food service requirements.

7.8.5.13.4. Fire department requirements.

7.8.5.13.5. Security requirements.

7.8.5.13.6. Civil engineer requirements.

7.8.5.13.7. Airfield operations.

7.9. Weekly Scheduling. The weekly schedule is the final refinement to the monthly plan and results in the weekly flying and maintenance schedule. MAJCOMs will develop procedures to ensure the objectives of the weekly scheduling process are met. To optimize aircraft and munitions support, MXS, AMXS and OS CCs will ensure the number of aircraft and/or munitions configurations are minimized and standardized. The OS operations officer and maintenance supervision will review and coordinate on the proposed weekly flying and maintenance schedule with OS, AMXS and MXS prior to presenting it to OG and MXG CCs. Operations schedulers will use the Tactical Aircrew Scheduling Airspace Management System (TASAMS) to develop the flying schedule in units where Theater Battle Management Core Systems-Unit Level (TBMCS-UL) is fielded. The group-approved schedule will be submitted to MOF PS&D for compilation and a complete copy provided to the WG/CC. At the weekly scheduling meeting, evaluate the past week's accomplishments (to include flying and MSE) and negotiate/approve refinements to the coming week's schedule. (The AF IMT 2402, **Weekly Equipment Utilization and Maintenance Schedule**, is used to summarize the upcoming week’s schedule.) The AF IMT 2403, **Weekly Aircraft Utilization/Maintenance Schedule**; and AF IMT 2436, **Weekly/Daily Aircraft Utilization Schedule**; are more finite in the depiction of aircraft utilization and maintenance. The AF IMT 2403 and AF Form 2436 may be used together or individually. Electronic versions of the above IMTs/forms are authorized. Whatever IMTs/forms are used, all requirements will be entered. Weekly schedules may be published electronically provided local security requirements are met.

7.9. (ANG) MXG/CC and OG/CC will develop procedures to ensure the objectives of the weekly scheduling process are met in a Wing OI.

7.9.1. NLT 2 workdays before the weekly scheduling meeting, the OS operations officer gives maintenance supervision the following information (as required):

7.9.1.1. Aircraft takeoff and landing times. ***NOTE***: Landing times are not required if the unit has an established and constant average sortie duration.

7.9.1.2. Configuration requirements.

7.9.1.3. Munitions requirements.

7.9.1.4. Fuel loads.

7.9.1.5. Special or peculiar mission support requirements.

7.9.1.6. Alert requirements.

7.9.1.7. Exercise vulnerability.

7.9.1.8. Deployments.

7.9.1.9. Off-base sorties.

7.9.1.10. On equipment training requirements.

7.9.1.11. Other special requirements.

7.9.2. Once the weekly schedule is reviewed and signed by the OG/CC and MXG/CC it becomes the final planning guide for both operations and maintenance and the basis for deviation reporting. The schedule will be followed as printed or as amended by coordinated changes. Coordinated changes do not negate reporting deviations IAW MAJCOM guidance. MOF PS&D distributes the schedule to each appropriate activity and work center NLT 1200 (1400 for AETC) Friday preceding the effective week. Weekly flying and maintenance schedules may be transmitted electronically provided local security requirements are met.

7.9.2. **(ANG)** Load Tail Numbers into the MIS NLT Friday preceding the effective week. For ANG Unit Training Assemblies (UTA) PS&D distributes the weekly schedule NLT 1200 Sunday morning preceding the effective week. Load tail numbers into the MIS NLT Sunday preceding the effective week.

7.9.2.1. Tanker/Airlift Control Center (TACC) tasked units (MAF units) will use the daily flying schedule as the basis for deviation reporting.

7.9.3. Home and deployed units will publish a weekly schedule. Include the following in the weekly flying and maintenance schedule:

7.9.3.1. Sortie sequence numbers, aircraft tail numbers (primary and spares), scheduled takeoff and landing times, aircraft or equipment scheduled use times, configurations and special equipment requirements. Units tasked by TACC need not include aircraft tail numbers. Units that fly a published and constant average sortie duration need not publish land times.

7.9.3.2. Spare aircraft requirements. Spare requirements are printed by day for each maintenance unit. Generate only the absolute minimum of spare aircraft.

7.9.3.3. Scheduled maintenance actions, by aircraft and equipment serial number, to include inspections, TCTOs, time changes, contract and depot inputs, engine changes, washes or corrosion control, document reviews and DDs.

7.9.3.4. Required pre-inspection and other maintenance/scheduling meetings to include minimum attendees.

7.9.3.5. Wash rack use.

7.9.3.6. On-equipment training requirements.

7.9.3.7. AGE inspections or maintenance schedule by type and ID number.

7.9.3.8. A list of new or revised publications, TO indexes, inspection work cards, checklists and Dash 6 TOs. Include the date of change. Automated systems will be used, if available.

7.9.3.9. MAJCOMs will develop specific procedures to record and coordinate changes to the weekly schedule using an AF IMT 2407. Include minimum approval levels for approving changes to the weekly schedule.

7.9.3.9. **(ANG)** The MXG/CC and OG/CC shall develop specific procedures to record, coordinate and distribute changes, may be electronic, to the weekly schedule using an AF IMT 2407 or locally devised or computer generated products as long as they provide all the information contained in the AF IMT 2407.

7.9.3.10. Any change to the printed schedule will require an AF IMT 2407 with the following exceptions: a change to the original printed takeoff or landing time of 15 minutes or less; a change of aircrew names, ranges, or airspace; or a change arising after the first crew ready time for the squadron's current day's scheduled flying window.

7.9.3.10. **(ANG)** Interchanges (tail number swaps) do not require an AF IMT 2407.

7.9.3.10.1. Changes made during the daily scheduling meeting also require an AF IMT 2407.

7.9.3.10.2. The agency requesting the change initiates the AF IMT 2407 and coordinates it through the affected Pro Super, Operations Officer/MX SUPT, and required group staff agencies (i.e., MOC, PS&D, etc.) IAW MAJCOM procedures.

7.9.3.10.2. **(ANG)** MXG/CC and OG/CC will develop procedures in a Wing OI.

7.10. Aircraft Document Reviews. ADRs validate and correct any errors on airframe and engine operating times and cycles, TCTO documentation, TCI component operating times, time remaining to the next inspection, backordered supply document numbers and open and deferred discrepancies. Aircraft AFTO Form/IMT 781-series for possessed aircraft, are reviewed by flightline maintenance functions (DCC or alternate), PS&D, EM and supply to ensure the accuracy and validity of entries**.**

7.10.1. The MIS background product "Automated Records Check (ARC)" or on-line MIS products may be used to perform the ADR, however, ensure use of MIS products is standardized for all assigned units. Units using MDS specific MIS systems (ie. IMIS) must develop procedures to ensure the intent of para. **7.10.** are accomplished.

7.10.2. An ADR is accomplished at least every 60 days for units using fully automated AFTO 781-series IMTs. Units without access to a MIS and authorized to use manual AFTO 781-series IMTs, must accomplish an ADR at least every 30 days. Also accomplish an ADR when an aircraft is transferred (including Queen Bee), deployed for more than 30 days, before and after scheduled inspections (PH or ISO), before and after storage and after fatigue tests. For CANN aircraft, conduct ADRs at least every 30 days. MAJCOMs and MXG/CCs may shorten the ADR interval as needed.

7.10.3. ADR Procedures:

7.10.3.1. MOF PS&D creates a JST for ADRs. AMU PS&D loads this inspection against all assigned aircraft.

7.10.3.2. PS&D schedules the ADR in maintenance plans. An ADR is a scheduled maintenance action and counts in MSE computations.

7.10.3.3. PS&D and EM validate applicable inspection, TCI, TCTO data for correct due dates or expiration dates, airframe and engine operating times (or flight times if applicable) and appropriate symbol entry IAW TO 00-20-1.

7.10.3.4. Supply runs a tail number inquiry to validate backorders and corrects any discrepancies discovered.

7.10.3.5. Maintenance personnel will correct all documentation discrepancies discovered during the ADR, prior to updating the ADR JCN.

7.11. Pre-Dock Meetings. PS&D will review planned aircraft inspection schedules and initiate an AF IMT 2410, **Inspection/TCTO Planning Checklist**, or locally developed product for each aircraft prior to the pre-inspection meeting. When scheduling inspections, such as PEs/Home Station Checks (HSC (C-17)), ISOs and HPOs (50-hour cycle or greater), PS&D prepares the AF IMT 2410, or locally developed product in duplicate. The original is used as "basic inspection" data for planning. For aircraft that are not normally placed into an inspection section for the accomplishment of HPO's and/or the inspection requires minimal time to accomplish (e.g., H-1 20 hr, T-1 200 hr, T-6 100 hr, T-37 125 hr and T-38 225 hr), the MAJCOM will determine if a pre and post dock meeting is required. If it is determined that a pre and post dock meeting is not required, the initiation of an AF IMT 2410 is also not required. PS&D personnel will:

7.11.1. Review and list all known aircraft and equipment TCTO, TCI, SI and other major requirements to be accomplished during the inspection on the AF IMT 2410, or locally developed product. Identify requirements for kits or parts when availability has not been confirmed.

7.11.2. Prior to the pre-inspection meeting, incorporate all requirements against the aircraft into a work package. Keep the original JCN for DDs to be fixed during the inspection. Use the AF IMT 2410, or locally developed product as an aid in planning for and conducting the pre-inspection meeting. Block 14 will list the agencies attending the meeting and any discussion items to be presented. Block 15 reflects specialist tasks in addition to normal inspection needs.

7.11.3. At the pre-dock meeting, inform representatives of the inspection schedule and scope, including TCTOs, TCIs, SIs, DDs and special requirements to be accomplished. The representatives inform PS&D of limiting factors that might affect the schedule. Use the AF IMT 2410, or locally developed product to record additional information discussed during the pre-inspection meeting. Maintain the original AF IMT 2410, or locally developed product on file in the aircraft jacket file for use as a guide when conducting the post-dock meeting. Give a copy to the Dock NCOIC.

7.11.4. Discuss aircraft configuration during all aircraft pre-dock meetings. Provide a list of items identified as out-of-configuration to the Dock NCOIC in the pre-dock package for verification/correction during the major inspection. The responsible work center will correct verified erroneous data and out-of-configuration items in IMDS prior to the post-dock meeting.

7.12. Post-Dock Meetings. The Dock NCOIC, PS&D, DCC and other attendees discuss open discrepancies, review any significant inspection events and identify any problems that may adversely affect future scheduling. The Dock NCOIC gives the completed inspection work package to PS&D for filing until it is replaced by the next similar inspection work package. PS&D files a computer-printed listing of completed on-line work orders in the aircraft jacket file.

7.13. Aircraft Configuration Management. ACM provides unit managers the capability to determine the actual versus approved configuration of an aircraft. The intent of the configuration management subsystem is to ensure selected serially controlled and/or TCIs are properly loaded to the MIS database. Of major concern are accurate, approved part numbers, quantity per assembly (QPA) and next higher assembly (NHA) items by WUC/LCN. MOF PS&D has overall responsibility for the ACM subsystem of MIS.

7.13.1. The configuration tables (F-15s, F-16s, F-22As, F-117s, B-1s and B-2s) are electronically pushed to each unit from REMIS as aircraft configuration changes occur. Maintenance personnel discovering a tracked part number not on the approved configuration table will send the part number for validation to the configuration specialist. This is accomplished through IMDS part number validation (PNV) TRIC (IMDS-CDB/REMIS TRIC PNV). Upon receipt of the part number, the configuration specialist approves or disapproves the new part number in REMIS. If approved, maintenance personnel will load the part number in IMDS. Configuration tables will be changed by the ALC or configuration specialist as a result of a TCTO modification.

7.13.2. For those aircraft that do not currently have an established configuration table, use IMDS screen 810 to validate the installed items against the data in the MIS.

7.13.3. MOF PS&D will coordinate the daily resolution of configuration management notices utilizing screen 690.

7.13.4. PS&D will provide GCSAS assistance to maintenance personnel.

7.13.5. PS&D must request IMDS DBM process screen 942, Actual Configuration Set-up, using the ID number of the aircraft entering PH. Once accomplished, the scheduler must run a IMDS screen 990. A copy of this product must be given to the Dock NCOIC at the pre-dock meeting, for verification/correction of all items out of configuration during the PH inspection. This document must be turned-in to PS&D during the post dock meeting. PS&D must request the DBM process screen 942 or run a new screen 990 for the same tail number to verify corrections. Establish a single DD in the aircraft IMTs for out-of-configuration condition. Add a IMDS WCE for each WUC/LCN and part/serial number item requiring verification to that single DD. If an item data plate is missing or does not have a serial number, contact the MAJCOM system functional manager and ALC item manager for disposition. Items not accessed or visible during routine field-level maintenance should be identified to MAJCOM and ALC managers for removal from the configuration management table.

7.13.6. Discrepancies must be briefed at the daily production/scheduling meeting and forwarded to the appropriate maintenance section for corrective action. Completed/verified copies of the output product (screen 942 or 990) must be maintained in MOF PS&D until the next scheduled PH inspection for that aircraft.

7.13.6. **(ANG)** Discrepancies shall be briefed at the post dock.

7.14. Major Maintenance Work Processing. MOF PS&D will:

7.14.1. Coordinate on all TO 00-25-107 requests for AFI 21-103 reporting. The work center discovering the discrepancy is responsible for drafting the TO 00-25-107 request and forwarding the request to QA for coordination and release. MOF PS&D is responsible for making the appropriate possession code changes in MIS when AFI 21-103 messages have been released. Depot level assistance provided by contractor support is accomplished IAW contract specifications.

7.14.2. In conjunction with QA, develop procedures for routing all major maintenance requests to ensure all affected parties are informed.

7.14.3. Upon arrival of the DFT, MOF PS&D will conduct an initial meeting to validate maintenance support requirements are in place. Meetings will be documented on an AF IMT 2410, or locally developed product.

7.14.4. Once work is completed, MOF PS&D will ensure appropriate possession codes are changed and a completed copy of the work package is placed in the aircraft historical file. Document significant historical data on the appropriate AFTO IMT 95 IAW 00-20 series TOs.

7.15. TCTO Management. MOF PS&D administers and manages the overall wing TCTO program. TCTOs and AF, MAJCOM or NAF-directed modifications and inspections provide units with instructions for doing a one-time change, modification, or inspection of equipment, (includes applicable FAA air worthiness directives, original equipment manufacturer service bulletins and service instructions, after concurrence by MAJCOM). Use the MIS to process MAJCOM and NAF OTIs or modifications in the same manner as TCTOs with compliance periods, remove from service dates and rescission dates IAW TO 00-5-15. MAJCOM, NAF and local inspections are referred to as OTIs. TCTOs, with the exception of immediate and urgent action, are considered scheduled maintenance and integrated into maintenance planning cycles. Consider concurrent accomplishment of TCTO work with other scheduled or unscheduled maintenance (e.g., PH, ISO, HSC, HPO). When practical, all Peacetime Operating Stock (POS) and RSP assets will be modified before in-use or installed items. Manage TCTOs using the MIS, TO 00-5-15 and specific MAJCOM instructions.

7.15.1. General Management of TCTOs. MOF PS&D manages aircraft and commodity TCTOs, Munitions Scheduling manages munitions-related TCTOs, and EM manages engine-related TCTOs. However, MOF PS&D still has the overall responsibility to monitor the effective management of the wing's TCTO program. All scheduling, tracking and day-to-day monitoring of TCTOs is accomplished by the owning scheduling agency (i.e., MOF PS&D, EM, AMU PS&D, AGE, Armament, Munitions and PMEL). If schedulers are not designated/assigned to an owning agency, MOF PS&D shall perform the responsibilities. The parent technical training center manages and schedules all TCTOs for training equipment assigned to a TD or MTT.

7.15.1.1. MOF PS&D must review MIS products weekly to ensure proper documentation and management by owning and managing TCTO agencies. When errors are detected, MOF PS&D must advise affected scheduling functions and provide assistance when necessary to correct the discrepancies. MOF PS&D must coordinate with MDSA to ensure the MIS TCTO synchronization program is run monthly as appropriate.

7.15.1.2. Significant problems or potential delays in TCTO accomplishment will be brought to the immediate attention of the managing scheduling agency and elevated to the SQ/CC and MXG/CC as appropriate. MOF PS&D will monitor all TCTO status and brief the MXG/CC weekly on unaccomplished TCTOs that are within 30 days of grounding.

7.15.1.3. MOF PS&D will chair a TCTO review meeting attended by all TCTO owning and managing agencies after the monthly supply TCTO reconciliation meeting. MOF PS&D will discuss the supply reconciliation, supply status, scheduling factors, current TCTO status and anticipated problems for all active TCTOs. MOF PS&D will produce minutes from the meeting and distribute to all affected agencies. (N/A to ANG except for the 116th ACW)

7.15.1.4. Depot-level TCTOs, excluding commodities, are loaded and tracked in the MIS for auditing compliance and applicability. Depot-level engine TCTOs are loaded in CEMS only. Units shall ensure dual reporting of completed depot TCTOs is prevented. All field-level companion TCTOs for commodities must be loaded in the MIS.

7.15.1.5. The reprogramming of passive/active ECM equipment is administered as a commodity TCTO for configuration management purposes. MOF PS&D will coordinate with the operations electronic combat pilot/EWO before implementing any CPIN changes.

7.15.1.6. When TCTOs are directed for items without serial numbers, assign permanent serial numbers IAW TO 00-20-2. If it is not feasible or impractical to assign a serial number (e.g., air chucks and pilot clipboards), use bulk quantity numbers. For example, if there are 50 air chucks, use serial numbers 1 through 50 in the MIS.

7.15.1.7. When TCTOs require modification of installed components, ensure modified components are not replaced with unmodified components. If LRS issues an unmodified component, it is identified as unmodified and returned to LRS.

7.15.1.8. Control and Transfer of TCTO Kits. Transfer aircraft or equipment, with any TCTOs still pending completion, with their applicable TCTO kits. Retain engine TCTO kits for engines installed on aircraft at depot locations if the aircraft is returning to that unit for TCTO compliance. Transfer TCTO kits IAW AFMAN 23-110, TO 00-5-15 and TO 00-5-1.

7.15.2. Specific TCTO Responsibilities.

7.15.2.1. QA personnel will:

7.15.2.1.1. Perform an initial review of the TCTO and determine applicability.

7.15.2.1.2. Distribute copies of TCTOs to the managing agency, performing work centers, the Flight Service Center of the Materiel Management Flight and the LRS Chief Inspector. Provide a cover letter requesting the number of items in supply, including WRM, affected by the TCTO.

7.15.2.1.3. Report all deficiencies in technical instructions and kit-proofing to the appropriate TCTO manager IAW TOs 00-5-1 and 00-5-15.

7.15.2.1.4. Attend TCTO planning meetings.

7.15.2.1.5. Provide technical support to performing work centers.

7.15.2.2. The appropriate TCTO managing agency personnel will:

7.15.2.2.1. Determine the total number of end items applicable to the TCTO.

7.15.2.2.2. Chair a TCTO planning meeting with attendees from QA, owning and performing work centers and LRS. Minutes of this meeting will be recorded on AF IMT 2410 (or locally-developed product) and provide an overall plan to implement the TCTO. Minutes will include TCTO applicability by ID number (or applicable part number or serial number for commodity TCTOs), purpose of the inspection or modification, performing work centers, serial number or ID number of equipment, training requirements, scheduling parameters, remove from service date, a review of the TCTO procedures, IMT entries and any supply requirements identified before the TCTO can be scheduled for accomplishment. All attendees

sign the AF IMT 2410, or locally developed product at the conclusion of the planning meeting indicating agreement with the conditions.

7.15.2.2.3. Establish and maintain a TCTO folder for each active TCTO. MOF PS&D will develop a master TCTO folder to be used as the standard. The folder will include the basic TCTO and any supplements, completed AF IMT 2410, or locally developed product, AF IMT 2001**, Notification of TCTO Kit Requirements** (if required), messages and the supply cover memorandum from QA. Once the TCTO has reached its rescission date, print a MIS product showing the current status of equipment and place it in the TCTO folder. Move the folder to an inactive TCTO file. The TCTO managing agency will maintain the folder until the TCTO is rescinded in the applicable TO index and then dispose of it IAW AFI 37-138 and *AF Records Disposition Schedule located at* ***https://afrims.amc.af.mil***. MIS TCTO records will be deleted at that time. TCTOs will not be deleted from the MIS *prior* to the rescission date.

7.15.2.2.4. If an initial TCTO load is not received from REMIS, notify the ALC to attempt a second REMIS push. If a second attempt is not successful, load the TCTO into the MIS. MAJCOMs will load TCTOs for G081 users. Add a requirement for QA when a TCTO affects equipment W&B.

7.15.2.2.5. Use the SBSS to order required kits/parts/tools IAW MIS manuals. When SBSS is not available, initiate three copies of the AF IMT 2001. Forward two copies of the IMT with a copy of the TCTO to the supply TCTO monitor. For locally obtained parts, prepare an AF IMT 2001 listing each item by NSN, noun and quantity required. Assign ID numbers to kits as they are received. Use Part II of the AF IMT 2001 to manage kit/part assignment and track individual end items, date issued, document numbers and the number of kits remaining. The supply TCTO monitor will ensure kits and/or parts are assembled prior to release. The performing work center will order/maintain all HAZMAT required to comply with TCTOs and provide document numbers to the TCTO managing agency and supply TCTO monitor.

7.15.2.2.6. Control and release TCTO kits from LRS.

7.15.2.2.7. Attend the supply TCTO reconciliation meeting (N/A to the ANG except for the 116 ACW). Use the TCTO reconciliation listing from LRS to discuss the number of kits on hand, any “mark for” changes and estimated delivery dates combined with the time to accomplish parameters and compare to TCTO remove from service dates.

7.15.2.2.8. Notify appropriate MAJCOM and NAF functional managers, by message, when local managers anticipate a problem with TCTO compliance within prescribed time limits. The message should include the TCTO number and narrative, total units affected, total units complete, kits on hand, kits on order, estimated delivery date, requisition number and a narrative of the problem.

7.15.2.2.9. Report status of TCTOs that cannot be reported under “HOW MAL” codes 793, 797, 798, 801, 802, or 911 IAW the MIS, and 00-20 series TOs.

7.15.2.2.10. Report interim TCTO status on immediate, urgent or routine action safety TCTOs as directed by MAJCOM.

7.15.2.3. The owning schedulers (i.e., MOF PS&D, EM, AMU PS&D, AGE, Armament, Munitions and PMEL) will:

7.15.2.3.1. Establish and maintain a TCTO folder for each active TCTO. TCTO folders will mirror the master TCTO folder and include any section unique management information.

7.15.2.3.2. Schedule, track and monitor TCTO accomplishment. Prepare a work order in the MIS for each affected end-item, including spares. Agencies owning installed on-equipment TCTOs will coordinate with PS&D prior to scheduling on-aircraft TCTOs.

7.15.2.3.3. Review suspense validation inputs prior to processing TCTO suspenses and updating the MIS.

7.15.2.3.4. Update equipment/aircraft TCTO status as changes occur.

7.15.2.3.5. Annotate back-up MIS products as changes occur IAW MOF PS&D guidance.

7.15.2.3.6. Ensure TCTOs are scheduled for completion prior to the grounding date.

7.15.2.3.7. Schedule all workable TCTOs for accomplishment prior to permanent equipment transfer or storage input.

7.15.2.3.8. Notify the appropriate work center when a TCTO requires an AFTO Form/IMT 781- series entry.

7.15.2.4. The Performing Work Center personnel will:

7.15.2.4.1. Report all deficiencies in technical instructions and applicability to the TCTO managing agency and QA.

7.15.2.4.2. Attend TCTO planning meetings. Review the TCTO prior to the meeting and request clarification of any requirements from QA and the appropriate TCTO managing agency during the meeting.

7.15.2.4.3. Inventory TCTO kits for completeness prior to starting work. If a discrepancy exists, contact the TCTO managing agency to resolve shortages.

7.15.2.4.4. Perform the inspection or modification procedures outlined in the TCTO and document results or findings in the MIS.

7.15.2.4.5. If an inspection TCTO generates a requirement for parts, the performing work center creates a new JCN and enters the discrepancy in the AFTO Form/IMT 781A or applicable equipment record and orders the required parts. Inspection TCTOs are complete when the inspection is finished.

7.15.2.4.6. Order and maintain all HAZMAT required to comply with TCTOs and provide document numbers to the TCTO managing agency and supply TCTO monitor.

7.15.2.4.7. Validate technical instructions and data on AFTO IMT 82, **Certificate-Proofing TCTOs/Kits,** when performing TCTO kit proofing IAW TO 00-5-15.

7.16. TCIs. MOF PS&D has over-arching responsibility for the wing TCI program. EM is responsible for monitoring, projecting and including engine life limited component TCI requirements into aircraft maintenance plans. Schedulers identify, monitor, forecast and schedule only those selected items specifically identified in TO 00-20-9, *Forecasting Replacement Requirements for Selected Calendar and Hourly Time Change Items;* applicable commodity TOs; the aircraft Dash 6 TO, AFI 21-201 or identified as FSG 13 and Materiel Management Code AQ Items.

7.16.1. MOF PS&D personnel will:

7.16.1.1. Establish a JST for both the DOM and DOI for Cartridge-Actuated Devices (CAD), Propellant Actuated Devices (PAD), life sustaining, and other TCI items listed in the aircraft Dash 6 TO and applicable commodity TOs

7.16.1.2. TCI Forecasting. Forecasting of CAD/PAD items for long-term CAD/PAD spare requirements will be accomplished by OO-ALC through use of the Requirements Determination Module (RDM) to extract installation and due dates from the REMIS aircraft maintenance data collection system. Items not visible in a maintenance data system will continue to be forecasted by the using organization IAW T.O. 00-20-9, Forecasting Replacement Requirements for Selected Calendar and Hourly TCIs.

7.16.1.2.1. When CAD/PAD items or forcast requirements are not visible within the maintenance data system (e.g., CLS managed components), units forecast for TCIs IAW TO 00-20-9 and AFI 21-201. In these cases, validate and consolidate TCI forecasts for items listed in TO 00-20-9, commodity TOs, and aircraft specific Dash-6 TOs. Submit consolidated forcasts to the appropriate MAJCOM representative with an info copy to munitions operations. Forward any quarterly updated forecasts to munitions operations.

7.16.1.3. Initiate, validate, and submit TCI extension requests to the ALC item manager (IM) with info copy to munitions operations. Maintain and monitor a suspense copy of the extension request and follow up prior to the grounding date of the TCI. Refer to Technical Orders 00-20-1 and 00-20-9 for additional guidance on TCI extensions.

7.16.1.4. The IM will either satisfy demand for parts by directing shipment (depot or inter-command RDO) of assets or approve TCI extensions as appropriate. IMs are authorized to direct inter-command redistribution of CAD/PAD parts as required.

7.16.1.5. Participate in a monthly reconciliation of all TCIs with FSC. The reconciliation will consist of 100 percent validation of existing due-outs and a complete physical inventory of all issued TCIs. Inform FSC of any "mark for" changes or items no longer required.

7.16.1.5. **(ANG)** MOF PS&D performs the monthly reconciliation.

7.16.2. AMU PS&D and EM personnel (as applicable) will:

7.16.2.1. Load only the DOI or DOM JST, that comes due first, in the MIS against a specific part or serial number. As a minimum, when the DOI and DOM frequencies are identical, maintain the JST for the DOM. (N/A for G081 units)

7.16.2.2. Monitor and requisition TCI requirements based on projected equipment utilization. Order parts using SBSS, if available. Unless otherwise specified in Dash 11, Dash 14 and Dash 6 TOs. TCIs are considered due for replacement at the HPO, PH, PE, HSC or ISO inspection nearest to the replacement date.

7.16.2.2.1. Notify the Munitions Flight of the need to order munitions items IAW TO 00-20-9 and AFI 21-201. CAD/PAD TCIs with 9 months or less service life remaining may be turned into munitions operations and must not be reissued. Maintenance plans must reflect replacement dates to coincide within the 9-month parameter.

7.16.2.2.2. Order non-CAD/PAD or engine TCIs IAW AFMAN 23-110.

7.16.2.3. Schedule the time change in the MIS and incorporate it in the monthly/weekly maintenance plan.

7.16.2.4. Review the data entered by the performing work center and update the suspense validation in the MIS when the time change is completed (N/A to units using G081).

7.16.2.5. Coordinate management of respective TCIs with egress, survival equipment and aircrew life support sections.

7.16.2.6. Schedule drogue chute TCIs, except chute harnesses, for replacement during the drogue chute repack before the expiration of the component service or shelf life. These components will not be over flown without an approved waiver from the appropriate item manager.

7.16.2.7. When required, forward TCI due date extension requests to MOF PS&D. EM will send requests directly to the ALC. Maintain a copy of the ALC/System Program Director (SPD) approved message until the item is replaced.

7.16.2.8. Prepare TCI forecasts IAW TO 00-20-9 and forward to MOF PS&D. Squadrons will submit a forecast for non-munitions items to their supply section.

7.16.2.9. Validate TCI requirements 45-60 days prior to the next quarter with the MASO. Validate current requirements against the annual forecast and make corrections based on aircraft utilization.

7.16.2.10. Participate in a monthly reconciliation of all TCIs with FSC IAW AFMAN 23-110.. The reconciliation will consist of 100 percent validation of existing due-outs and a complete physical inventory of all issued TCIs. Inform FSC of any "mark for" changes or items no longer required.

7.17. Aircraft Generation Planning. The AF IMT 2408, **Generation Maintenance Plan;** AF IMT 2409, **Generation Sequence Action Schedule,** (GSAS); or MAJCOM approved automated equivalents will be used to manage aircraft generation sequence actions for various unit taskings. The AF IMT 2408 reflects the hour sequence of all actions necessary to launch aircraft and contains a locally established legend indicating the type aircraft and tasked mission. If the tail number, mission number or specifically tasked NLT times are linked, this IMT becomes classified. The AF IMT 2409 shows the actions necessary to generate a specific line number. Use locally established codes for maintenance shown in the action column blocks and to report maintenance actions during generation. The AF IMT 2408 and AF IMT 2409 are not required for AETC/AFMC units without a mobility tasking. MOF PS&D personnel will:

7.17. (ANG) Units may use automated products (e.g., Excel, Access) to develop and maintain generation flow plans. For ANG AETC-gained units without a mobility tasking, the AF IMT 2408 and 2409 are not required.

7.17.1. Develop, coordinate and prepare all aircraft maintenance flow plans in conjunction with maintenance supervision, WWM and MXS personnel.

7.17.2. Prepare the GSAS in sufficient detail to satisfy all generation actions. A completed GSAS requires only the aircraft serial number assignment and the 24-hour clock time annotation. Each plan must not exceed unit resources (i.e., load crews, equipment, convoys per hour, supervision, etc.).

7.17.2. **(ANG)** To prevent classification, do not include items such as wartime bed down locations, OPLAN title, A-hour (OPLAN 8044) timing, or no-later-than timing from OPLANs.

7.17.3. Forward the completed GSAS IMT to affected activities at the beginning of the generation sequence.

7.17.4. GSAS plans must be compared semi-annually with the unit DOC statement to ensure compatibility with the mission.

7.17.5. Attend post exercise/contingency "hot wash" meetings to evaluate flow plans for changes or improvements.

7.18. Transfer Inspections.

NOTE: During temporary loans of an air vehicle, the acceptance and transfer inspections can be waived as long as a MOA is signed by both gaining and losing CCs.

7.18.1. MOF PS&D personnel will:

7.18.1.1. In conjunction with QA, develop a local JST for aircraft and equipment transfer and acceptance inspection. This JST must meet all 00-20-1, 2-1-18, applicable aircraft Dash 6 and Dash 21 TOs, as well as AFI 21-103 and MAJCOM specific transfer requirements. Include historical records (e.g., NDI records, Egress records, W&B records, OAP records, strut records) and other items listed below.

7.18.1.2. Ensure all PS&D actions are completed in the MIS prior to permanently transferring an aircraft to another unit.

7.18.2. AMU PS&D personnel will:

7.18.2.1. Conduct a transfer pre-dock meeting one duty day prior to start of the aircraft transfer inspection. All items to be accomplished during the transfer inspection will be documented on an AF IMT 2410, or locally developed product, and scheduled in the MIS.

7.18.2.1. **(ANG)** N/A to ANG. Conduct a transfer pre-dock meeting prior to start of the aircraft transfer inspection. All items to be accomplished during the transfer inspection will be documented on an AF IMT 2410, or locally developed product, and scheduled in the MIS.

7.18.2.2. Run a MIS planning requirements product and complete a total verification of all TCIs installed on the transferring aircraft. Verify the correct computation of all due dates/hour/cycles based on DOM, DOI, installed times, etc. Ensure all propulsion Dash 6 SIs are accomplished when engine time/cycles are outside TO specified transfer limits.

7.18.2.3. All errors will be annotated on the MIS product and corrected in the MIS. A new MIS product will be run to verify the errors were corrected. The new MIS product will be signed, dated and placed in the aircraft jacket file.

7.18.2.4. For IMDS units only:

7.18.2.4.1. Ensure the IMDS - REMIS synchronization programs are processed and errors are corrected prior to transfer. The error correction and synchronization program must be repeated anytime a configuration tracked part is removed or installed in the MIS. Ensure the synchronization program has been successfully processed before transferring the aircraft in IMDS.

7.18.2.4.2. Ensure an up-to-date Transfer of Equipment (TRE) report and an AFTO IMT 95 with current engine trend and performance data are placed in the aircraft jacket file. A backup

copy will be maintained by the losing unit IAW *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil**.

7.18.2.5. Perform an ADR and conduct a transfer post dock meeting to ensure all required actions have been completed and all forms are current/accurate.

7.18.3. Acceptance Inspections.

7.18.3.1. Units will perform acceptance inspections on all aircraft possession transfers to the wing from outside agencies using the MOF PS&D/QA locally developed JST.

7.18.3.2. For aircraft returning from DFT/CFT work, OWCs will perform acceptance inspections to determine equipment condition IAW TO 00-20-1 and AFI 21-103. Ensure aircraft acceptance inspections include a validation of completed depot and contractor maintenance requirements, to include TCTOs (open and closed). As applicable, use the completed AFTO IMT 103 and work specifications as a guide to verify work accomplished. ***NOTE:*** Acceptance inspections by the gaining unit may be accomplished at the losing unit in conjunction with their transfer inspection as long as a MOA between units has been established and approved by the applicable MAJCOM(s).

7.18.3.3. MOF PS&D personnel will request approved configuration tables for B-1, B-2, F-15, F-16 and F-117 units and actual configuration tables for all other MDSs using IMDS screen 334 (IMDS-CDB units only).

7.18.3.4. In conjunction with MDSA DBM, MOF PS&D personnel will process the aircraft transfer file from REMIS IAW AFCSM 21-576V2, *Generic Configuration Status Accounting System (GCSAS), Software User Manual*. ***NOTE:*** DBMs must process NFS6A0, screen 47 and 942, upon receipt of approved file from REMIS. This must be accomplished prior to processing IMDS-CDB program NFS3W0 (actual configuration).

7.18.3.5. Ensure maintenance performs a complete aircraft Dash 21 series TO equipment inventory IAW AFI 21-103.

7.18.3.6. MAJCOMs will publish guidance to determine if egress system CAD/PAD inspections are required on newly assigned aircraft and upon those returning from depot/PDM where the egress system has been worked on by depot personnel.

7.18.3.6. **(ANG)** Cartridge Actuated Device (CAD) / Primary Actuated Device (PAD) inspections will be accomplished on newly assigned aircraft, and upon those returning from depot/PDM.

7.18.3.7. Aircraft will not be flown until all configuration managed items, TCIs, SIs, TCTOs, engines and engine components are loaded and due dates/times are verified in MIS. MOF PS&D personnel will ensure this validation is accomplished. Completed validations will be filed in the aircraft jacket file. *NOTE:* Units using IMDS will use the IMDS-CDB/REMIS transfer system to populate the IMDS-CDB. Manual loads cause unnecessary rejects from REMIS. TCTO records will auto process provided the TCTO is previously loaded in the gaining unit's IMDS-CDB.

Chapter 8

QUALITY ASSURANCE (QA)

8.1. General. Maintenance quality and equipment reliability is the responsibility of all maintenance personnel. The combined efforts of QA personnel, maintenance leaders, and technicians are necessary to ensure high quality maintenance production and equipment reliability. Maintenance leaders are responsible for safety of flight, safety of equipment operation, and quality maintenance production. The QA staff evaluates the quality of maintenance accomplished in the maintenance organization and performs necessary functions to manage the organization's MSEP. The MSEP provides an objective sampling of both the quality of equipment and the proficiency of maintenance personnel. QA personnel are not an extension of the work force and shall not be tasked to perform production inspections as a portion of the MSEP. QA serves as the primary technical advisory agency in the maintenance organization, assisting maintenance supervision at all levels to resolve quality problems. The evaluation and analysis of deficiencies and problem areas are key functions of QA that highlight and identify underlying causes of poor quality in the maintenance production effort. By finding causes of problems and recommending corrective actions to supervisors, QA can significantly affect the quality of maintenance within the maintenance complex. Aircraft and equipment condition and personnel proficiency are validated through the MSEP and shall be recorded using a MAJCOM-approved QA database. Civil service and contracted organizations shall use the accepted quality program outlined in their respective contract. **NOTE:** For aircraft operation and maintenance services that are complex and critical the acquisition multi-functional team (e.g. FC/FD, Chief QAE, aircraft functionals, ACO/PCO and customer should consider using higher-level contract quality requirements as outlined in FAR Part 46 202-4. The quality specification should also provide the supplier/contractor the flexibility to use basic to advanced process control tools such as Lean and Six Sigma.

Section 8A—CWO ONLY

8.1. (ANG) ANG units shall use the ANG QuAD for documenting QA evaluations. Other QuAD functions may be used at the QA Chief's discretion. At local option, Management Analysis and/or Training Management may be assigned as an integrated part of QA rather than the Maintenance Operations Flight. If this option is exercised, the duties and responsibilities of Training and Analysis are specified in **Chapter 6**.

8.2. QA Responsibilities. QA is responsible to the MXG/CC to perform as the primary technical advisory agency for maintenance and assists work center supervisors in managing the maintenance effort. QA personnel will:

8.2.1. Implement and administer the MSEP and other programs to include:

8.2.1.1. Activity Inspections (as MAJCOM directed)

8.2.1.1. **(ANG)** Activity Inspections are an MXG/CC option.

8.2.1.2. Product Improvement Program (PIP)

8.2.1.2.1. Deficiency Reporting (DR).

8.2.1.2.2. Product Improvement Working Group (PIWG).

8.2.1.2.3. R&M Working Groups.

8.2.1.3. AF Repair and Enhancement Program (AFREP) IAW AFI 21-123.

8.2.1.3. **(ANG)** At the discretion of the MXG/CC, the AFREP duties may be assigned elsewhere. QA must maintain oversight of the program.

8.2.1.4. Aircraft and Equipment Impoundment Program IAW **Chapter 9** of this instruction.

8.2.1.5. Functional Check Flight (FCF) program IAW this chapter.

8.2.1.6. Weight and Balance (W&B) program IAW this chapter.

8.2.1.7. Hot Refuel/Aircraft to Aircraft Refuel Program IAW **Chapter 14** of this instruction.

8.2.1.8. Unit Chafing Awareness Program as applicable IAW this chapter.

8.2.2. Ensure management and evaluation of the programs in **Chapter 14** of this instruction and other programs as assigned by the MXG/CC.

8.2.3. Assign a TODO manager to ensure TOs are managed IAW AFI 21-303 and TO 00-5-1.

8.2.4. Review aircraft aborts, IFEs, and other incidents as required.

8.2.5. Assist MOF PS&D and the Munitions Flight with the Configuration Management Program IAW **Chapter 7** of this instruction.

8.2.6. Assist MOF PS&D with the TCTO program IAW **Chapter 7** of this instruction.

8.2.7. Manage OTIs.

8.2.8. Augment evaluations at the request of WS. Flightline weapons loading inspections/evaluations are the responsibility of WS evaluators.

8.2.8. **(ANG)** N/A to the ANG. The following only applies to the ANG: Flightline weapons loading inspections/evaluations are the responsibility of WS and QA evaluators.

8.2.9. Assist the MXG/CC when coordinating with HHQ, AFMC, Defense Contract Management Agency (DCMA), and other outside agencies.

8.2.10. Evaluate unit maintenance management procedures, including locally developed forms, publications, OIs, checklists etc., for accuracy, intent, and necessity IAW **Chapter 1**.

8.2.11. Accomplishes QA responsibilities pertaining to contract maintenance activity (as required) IAW **Chapter 17**.

8.2.12. Review all new and revised technical data and TCTO's for completeness, accuracy and applicability. Inform applicable work centers of changes and up channel any problems discovered during this review.

8.2.12. **(ANG)** N/A to ANG. The following only applies to the ANG. Review all new and revised TCTO's for completeness, accuracy and applicability. Review all new and revised technical data. Inform applicable work centers of changes and up channel any problems discovered during this review.

8.2.13. **(Added-ANG)** Perform CSO evaluations as applicable.

8.2.14. **(Added-ANG)** JEDMICS use is optional, however if used, manage the program in accordance with ANG Policy Memorandum 21-407.

8.2.15. **(Added-ANG)** Manage QAE/QAR Program, if applicable IAW AFI 63-124.

8.3. Quality Assurance OIC/Superintendent (QA OIC/SUPT) Responsibilities. In addition to common responsibilities outlined in **Chapter 3** of this instruction, the QA OIC/SUPT will:

8.3. (ANG) N/A to ANG. The following only applies to the ANG. Quality Assurance Superintendent (QA SUPT) Responsibilities. The ANG does not have a QA OIC. These duties will be performed by the Superintendent. In addition to common responsibilities outlined in **Chapter 3** of this instruction, the QA SUPT will:

8.3.1. Make recommendations to the MXG/CC to enhance the quality of maintenance.

8.3.1. **(ANG)** Acts as the primary technical advisor within aircraft maintenance.

8.3.2. Develop the MSEP, using a MAJCOM-approved QA database. Make every effort to fully use a LAN to provide supervisors access to MSEP data.

8.3.3. Act as the MXG focal point to ensure appropriate actions are taken to notify the MAJCOM when deficiencies are found in AF or MAJCOM instructions.

8.3.4. Review maintenance related local OIs, profile JSTs, and IMTs/forms annually for accuracy, intent, and necessity (document these reviews)

8.3.4. **(ANG)** Reviews and approves all locally developed technical data checklists, checksheets, JST/JML, workcards, OTIs and TO Local Page supplements IAW AFI 33-360.

8.3.5. Ensure functional checklists are reviewed annually for currency and document this review.

8.3.6. Designate individuals to accomplish the following responsibilities:

8.3.6.1. Chief Inspector.

8.3.6.2. W&B program manager.

8.3.6.3. FCF managers.

8.3.6.4. PIM IAW AFI 21-118 para 1.7.

8.3.6.4. **(ANG)** PIM responsibilities may be distributed among inspectors as needed.

8.3.6.5. TODO.

8.3.7. Perform management inspections.

8.3.8. Ensure the MXG portion of the FOD Prevention Program is conducted IAW **Chapter 14** of this instruction.

8.3.9. Oversee and implement the MXG Impoundment Program IAW **Chapter 9** of this instruction.

8.3.10. Manage and oversee the prevention of dropped objects and assist in investigating incidents IAW **Chapter 14** of this instruction, as applicable.

8.3.11. Ensure MXG maintenance actions relating to hot refueling are accomplished IAW TO 00-25-172, **Chapter 14** of this instruction, applicable technical data, and MAJCOM supplements.

8.3.12. Coordinate on all requests for locally designed tools or equipment. QA must maintain records of all approved locally designed tools and equipment, including pictures or drawings and a description of the use for each item. (If pictures, drawings, or authorizations are not available, they will be re-accomplished.) If a TO or the MMHE focal point website located at **https://peonet.eglin.af.mil/mmhe/**, contains the option of a locally designed tool, QA does not need to coordinate or maintain the

records on that tool as long as the tool remains approved by the TO. ***NOTE:*** Locally designed equipment for weapons loading, maintenance and the armament systems flight must be coordinated through the WWM.

8.3.13. Monitor the ASIP IAW **Chapter 14** of this instruction.

8.3.14. Review, verify (annually) and publish combined MXG IPI listing.

8.3.15. Evaluate maintenance TO files that are kept on the aircraft (G files).

8.3.16. Monitor flight control maintenance.

8.3.16. **(ANG)** For ANG, this maintenance refers to flight control malfunctions that create an impoundment event.

8.3.17. Review wing depot-level assistance requests developed IAW **Chapter 1 and Chapter 7** of this instruction.

8.3.18. Develop key task and routine inspection listings (KTL/RIL), in conjunction with the Operations Officer/MX SUPT, and provide copies of approved lists to all affected organizations.

8.3.19. Ensure standardized Acceptable Quality Levels (AQL)/standards are developed for all tasks including key tasks and routine inspection lists.

8.3.20. Ensure agendas and presentations are compiled for the MSEP Summary.

8.3.21. Evaluate and document contractor performance IAW the PMAP and AFI 63-124, if applicable.

8.3.22. Manage the Activity Inspection Program, if established.

8.3.23. **(Added-ANG)** Manage JEDMICS if applicable.

8.3.24. **(Added-ANG)** Monitors the Repair Enhancement program if applicable.

8.3.25. **(Added-ANG)** Monitors maintenance crosstells. Distributes maintenance and safety crosstell messages as applicable within the maintenance complex.

8.3.26. **(Added-ANG)** Reviews and monitors special certification roster for currency, qualification and applicability. Maintains a signed master copy of the SCR.

8.4. Quality Assurance Chief Inspector Responsibilities. The Chief Inspector is responsible to the QA OIC/SUPT for ensuring functions listed below are performed. The Chief Inspector may delegate day-to-day management responsibility for each area, as appropriate. The QA SUPT may elect to appoint a Chief Inspector or distribute these responsibilities to individual inspectors as appropriate (ARC only). Each QA Chief Inspector is responsible for applicable section NCOIC duties in **Chapter 3** of this instruction and will:

8.4.1. Use assigned inspectors to provide on-the-spot assistance to correct problems.

8.4.2. Spot-check TOs, inspection work cards, checklists, job guides and WUC manuals during evaluations and inspections for currency and serviceability.

8.4.3. Assist MDSA with investigations and studies.

8.4.4. Review QA database and MSEP inspection summary inputs for accuracy and content.

8.4.5. Initiate actions when additional attention is required to resolve adverse maintenance trends or training problems. Actions include preparing crosstell information bulletins and messages for MXG/CC release to other similarly-equipped units and the MAJCOM .

8.4.6. Review and compile inputs annually for a consolidated MXG IPI listing. A copy of the approved IPI listing must be kept and annotated with the signature and date of review/certification. The IPI listings must be approved by MXG/CC.

8.4.7. Standardize the MXG master AFTO IMTs 781-series forms binder IAW TO 00-20-1.

8.4.8. Ensure all assigned 2W1X1, 2W0X1, 2W2X1 and 2M0XX QA inspectors complete all required explosive safety and nuclear surety training. Additionally, initial and recurring academic training is required for all 2W1X1's.

8.4.9. Review Category II major discrepancies for trends quarterly. If frequency or severity of identified discrepancies warrant inclusion of that item into a specific TO governing an action or inspection, the QA Chief Inspector must submit an AFTO IMT 22 or develop a local work card, local page supplement or checklist IAW TO 00-5-1.

8.4.10. Establish procedures for inspectors to document completed inspections.

8.4.11. Determine the duties and responsibilities of inspectors.

8.4.12. Perform inspections on GITA IAW **Chapter 14** of this instruction.

8.5. Quality Assurance Inspector Responsibilities. QA inspectors will:

8.5. (ANG) QA inspectors shall manage programs and perform duties as assigned by the QA SUPT and/or Chief Inspector, if assigned.

8.5.1. Evaluate flightline and back shop maintenance tasks and inspections (only weapons qualified inspectors with a 2W1 AFSC will inspect 2W1 maintenance tasks (N/A to ARC)).

8.5.1. **(ANG)** QA Inspectors may inspect 2W1 maintenance tasks. Does not apply to certification loads.

8.5.2. Enter inspection and evaluation reports into the QA database.

8.5.3. Perform QA review of Dull Swords, Unsatisfactory Reports, TCTOs, OTIs, modification proposals, DRs and SR, AFTO IMTs 22 and local OIs.

8.5.4. Evaluate IMT/forms documentation and MIS inputs.

8.5.5. Provide training/instruction as applicable to address deficiencies identified during the evaluation/inspection.

8.5.6. **(Added-ANG)** Performs evaluations and technical inspections in all maintenance functions, to include MOF and survival equipment, as directed by the MXG/CC.

8.5.7. **(Added-ANG)** Periodically evaluate weapons loading and other maintenance actions performed during combat sortie operations.

8.5.8. **(Added-ANG)** Reviews and submits wing depot-level assistance requests developed IAW TO 00-25-107.

8.6. Quality Assurance Training. Develop a local training plan to train all QA personnel, including QA augmentees, to ensure uniformity in application of inspection and evaluation techniques and philosophy.

8.6.1. Training must cover inspection and evaluation techniques, documenting inspection worksheets and actions to prevent personnel injury or equipment damage if a major finding is detected. The formal QA inspector course may be used to supplement this training. Document QA Inspector training in individual training records using the AF IMT 797 and/or utilize the MIS.

8.6.2. A qualified inspector will conduct an Evaluator Proficiency Evaluation (EPE) on each inspector performing one PE and one technical inspection. Each QA inspector, permanent or augmentee, must pass the EPEs prior to performing unsupervised evaluations and inspections. All EPEs must be tracked in the MIS or MAJCOM-approved QA database. Additional requirements for nuclear weapons certifying officials are located in AFI 21-204.

8.6.2.1. QA augmentees also require an annual EPE on either a PE or technical inspection.

8.6.3. Inspectors/Augmentees must be familiar with the requirements/procedures of all tasks they evaluate/inspect. If not mandated otherwise, the Chief Inspector must determine, in writing, which tasks inspectors must be JQS qualified and certified on before an evaluation or inspection is performed.

8.6.3. **(ANG)** N/A to the ANG. The following only applies to the ANG. Inspectors must be familiar with the tasks they evaluate/inspect, but not JQS qualified and certified.

8.6.4. QA inspectors and QA augmentees must complete AFI 21-112 certification before evaluating egress tasks and be certified IAW TO 00-25-252 before evaluating a completed weld.

8.6.4. **(ANG)** N/A to the ANG. Refer to AFI 21-112 para 6.3 for egress tasks evaluation guidance and TO 00-25-252 for weld evaluation guidance.

8.6.5. QA personnel, including augmentees, who conduct engine run evaluations are not required to maintain the engine run proficiency requirements outlined in **Chapter 14** of this instruction. However, if QA evaluators run engines, they must maintain the applicable aircraft proficiency requirements.

8.6.6. QA inspectors must be trained on all associated safety requirements prior to performing inspections on fuel systems or fuel systems repair facilities IAW TO 1-1-3.

8.6.7. Minimum experience requirements for evaluating Low Observables (LO) maintenance include; completion of applicable LO TD courses and certified in core training tasks contained in Attachment 3 of the 2A7X3 CFETP

8.7. Quality Assurance Augmentation. If a functional area does not warrant a full-time position in QA, but specialized expertise is warranted, select qualified technicians that are recommended by their Operations Officer/MX SUPT to be augmentees. QA must maintain a listing of current augmentees. In coordination with the Operations Officer/MX SUPT, QA shall establish augmentee duties. Only 2W1X1 personnel (as determined by the QA Superintendent in coordination with the WWM) will augment 2W1X1 QA activities.

8.7. (ANG) Cross utilization of permanently assigned QA personnel should be encouraged to minimize the use of augmentees.

8.8. Rotation of Quality Assurance Personnel. The MXG/CC is responsible for developing/executing a plan to rotate QA personnel. As a minimum, personnel must have 6 months time in the unit before being selected as a QA inspector and should be assigned to QA for a maximum of 36 months/minimum of 24 months. Personnel receiving specialized training (e.g., W&B, AFREP) should be assigned for 36 months to ensure program continuity. QA personnel at OCONUS short tours and QAE/QAR assigned personnel do not need to meet the time requirements. ARC, civil service, and service provider employees do not have any time requirements.

8.8. (ANG) N/A to the ANG except for the 116 ACW active duty personnel.

8.9. Activity Inspection Program. MAJCOMs have the option to establish an activity inspection program for subordinate units to complement MAJCOM and HHQ inspections and assessments. The activity inspections should be designed to give commanders and managers a comprehensive, objective evaluation of mission capabilities and compliance with technical/management directives for each function. If implemented, the MAJCOM activity inspection program should address, as a minimum, the following:

8.9. (ANG) Activity Inspections are an MXG/CC option.

8.9.1. Activity inspections are management and compliance oriented. Management and procedural deficiencies are most often identified by investigating production problems or poor discipline resulting in excessive overtime and failure of personnel to be dispatched to a job on time. Inspectors must not only identify discipline, housekeeping and technical discrepancies, but must also attempt to identify the underlying cause for the deficiencies.

8.9.2. The MXG/CC must ensure the depth and detail of the activity inspection is sufficient to evaluate the management capability of the maintenance organization. This is achieved by expanding the minimum requirements outlined herein or by adding special subject items. The QA OIC/SUPT recommends adjustments to the requirements based on trends and problem areas identified by QA personnel, MAJCOM and AF Inspector General (IG)/LSET/MSET inspections or audit reports.

8.9.3. The activity inspection must encompass all flights of the organization being inspected and all facets of the operation within each flight. Whenever possible, locally required inspections conducted by outside agencies (e.g., wing safety, training, security, LRS, BE or the fire department) should be accomplished in conjunction with the QA activity inspection. This reduces the number of disruptions to the organization being inspected and also increases the comprehensiveness of the activity inspection.

8.9.4. Inspection Requirements. When conducting an activity inspection, the activity inspection team must address internal problems of the unit and problems caused by other activities outside the jurisdiction of the inspected unit. Activity inspections should use (but are not limited to) the appropriate MAJCOM MSET/LSET and IG inspection checklists as the basis for the inspection areas.

8.9.5. Activity Inspection Reports. The report must be objective and factual with specific definitions of problem areas. Appropriate directive references must be included. The report should also contain recommended corrective action on major problem areas. If a solution is not readily apparent, or if the inspector believes one solution is better than another, the report should include appropriate comments.

8.9.6. Follow-up Inspections. Depending upon the severity of discrepancies and the overall rating, the MXG/CC may direct specific follow-up inspections. Follow-up inspections must not cause other inspections to be delayed.

8.10. Maintenance Standardization and Evaluation Program (MSEP). The MSEP is both a MAJCOM and wing/unit program to ensure maintenance organizations comply with AF, MAJCOM and unit directives. MSEPs may be combined with Logistics Standardization and Evaluation Programs (LSEP) which focus on supply, transportation and logistics plans functions. However, MSEP must have separate evaluation/inspection criteria and checklists.

8.10.1. MAJCOM MSEP. MAJCOMs shall establish an office to implement, manage, and execute the command's MSEP. The MAJCOM shall develop criteria and create a MSET to evaluate subordinate wings/units for compliance. The MAJCOM MSET shall conduct recurring unit evaluations to ensure maintenance technician proficiency, equipment condition and other command-developed focus areas are in compliance with AF, MAJCOM and local maintenance and munitions policies and directives.

8.10.1. **(ANG)** ANG LSEP workcenter checklists shall be used as a minimum at the MXG level.

8.10.1.1. Scope of MAJCOM MSET. The MSET evaluations are not intended to duplicate MAJCOM IG Unit Compliance Inspections (UCIs). However, it is acknowledged there will be some overlap of evaluated areas. MSET/LSET evaluations and other MAJCOM inspections (e.g., IG UCIs), may be conducted simultaneously to minimize impact on the unit being inspected.

8.10.1.1.1. Types of Evaluations and Inspections. The following types of evaluations, inspections and observations support the MSEP: PEs, QVIs, SIs, Management Inspection (MIs), DSVs, TDVs, UCRs and when directed, other inspections. These inspection terms may differ based on MAJCOM-approved QA databases.

8.10.1.2. Organization of MAJCOM MSEP. The MAJCOM MSEP office will have at least one permanent member on their MSET. The MSET may be a sub-organization of the LSET (also comprised of permanent members). Personnel from other MAJCOM staff agencies and/or field units may be used to augment the permanent team member(s).

8.10.1.3. MAJCOM MSEP Evaluation Criteria. MAJCOMS will develop standard functional checklists from AF and MAJCOM directives for use at the unit level. For evaluations of technician proficiency and equipment condition, applicable technical data is the evaluation standard. Local directives will also be used.

8.10.1.4. MAJCOM MSET Grading. MSETs may or may not provide an overall grade. If an overall grade is given, MAJCOM MSETs should use objective ratings (Outstanding, Excellent, Satisfactory, Marginal, and Unsatisfactory). Report findings to the MAJCOM A4 and publish a final report of findings from the evaluation.

8.10.1.4. **(ANG)** ANG MSEPs shall not be graded.

8.10.1.4.1. Inspections and evaluations performed (e.g., PE, QVI) will be rated "PASS/FAIL" or equivalent subjective rating system by the MAJCOM MSET. These will include over-the-shoulder evaluations of unit QA inspectors.

8.10.1.4.2. The results of the total number of inspections accomplished during the inspection may be assigned one of the following five tier ratings based on number of inspections passed versus completed. In addition, the results of the total number of inspections accomplished during the inspection may be rolled up to create a cumulative rating by flight, squadron and group.

8.10.1.4.2.1. Outstanding 95-100%

8.10.1.4.2.2. Excellent 90-94.99%

8.10.1.4.2.3. Satisfactory 80-89.99%

8.10.1.4.2.4. Marginal 70-79.99%

8.10.1.4.2.5. Unsatisfactory 0-69.99%

8.10.1.4.3. Deduct 0.5 percentage points for each TDV, DSV, and UCR from the overall percentage grade. For example, a unit earns an overall rating of 92 percent, "Excellent". However, the MSET observed 4 TDVs and 3 DSVs. The sum of the TDVs and DSVs is 7, (4+3=7). Multiply the sum (7) by 0.5, (7x0.5=3.5) and subtract the product (3.5) from the original 92 percent, (92-3.5=88.5). The adjusted total is 88.5 percent; therefore, the unit is rated "Satisfactory."

8.10.1.4.4. For each unresolved major category (CAT) I finding and any repeat CAT I and II findings identified by a previous MAJCOM MSET, the unit's MXG/CC must update the MAJCOM A4 through the MAJCOM MSEP office at 30-day intervals until the findings are resolved. (ARC units shall follow MAJCOM guidance).

8.10.1.5. **(Added-ANG)** General. The ANG MSEP is administered as a subset of the ANG Logistics Standardization and Evaluation Program (LSEP), which evaluates both Maintenance and Logistics Readiness functions. The ANG Logistics Directorate will implement the ANG LSEP utilizing a core complement of full time Staff Members, field augmentees from ANG units, and when available, LSET Evaluators from Gaining Major Commands (GMAJCOMs). The ANG Logistics Directorate will develop an Operating Instruction which will identify the LSEP Office of Primary Responsibility (OPR) and provide adequate procedures to effectively implement the ANG LSEP.

8.10.1.6. **(Added-ANG)** Evaluation Intervals. ANG LSET intervals will match GMAJCOM compliance inspection intervals. Whenever possible, ANG LSET evaluations will be accomplished in conjunction with GMAJCOM Unit Compliance Inspections (UCIs) to reduce inspection footprint on the unit. The ANG LSEP OPR will develop and publish an annual Fiscal Year LSET Evaluation Schedule NLT 30 April each year. This schedule will encompass the next Fiscal Year following the April 30 schedule publication date. ANG LSETs will be accomplished over unit drill weekends to ensure an adequate evaluation of both part time and full time personnel. When building the schedule, the ANG LSEP OPR will accommodate unit requests for inspection dates to the greatest extent possible, but the ANG LSEP OPR is the final approval authority to determine the evaluation dates of each unit.

8.10.1.7. **(Added-ANG)** Evaluation Criteria. ANG LSEP evaluation criteria consist of ANG LSET Checklists, an ANG LSEP Routine Inspection List (RIL), Unit MSEP RIL, Unit MSEP KTL, and general surveillance of the maintenance complex. A Non-Graded written test may also be administerd to a percentage of the workforce . This test will be based on general maintenance practices and will be utilized to provide the commander with a general knowledge overview of the maintenance organization. ANG LSET Checklists will contain Critical and Non-Critical Compliance Items (CCIs and Non-CCIs), and will contain all requirements outlined in this AFI. When conducting evaluations listed on the ANG LSEP RIL, LSET Evaluators will utilize a standard list of AQLs. The ANG LSEP OI will outline procedures for building and maintaining these checklists and the LSEP RIL.

8.10.1.8. **(Added-ANG)** Notification of Upcoming LSET Evaluation. The ANG LSEP OPR will send an official LSET Notification Letter to the WG/CC and MXG/CC 6 months prior to the scheduled evaluation date. This notification letter will identify a person from the ANG LSEP OPR office, who will work with unit personnel to facilitate the upcoming evaluation.

8.10.1.9. **(Added-ANG)** Evaluated Unit Responsibilities. Upon receipt of the LSET Notification Letter, units will assign a Unit POC who will provide all required deliverable products to the ANG LSEP OPR prior to the team's arrival and will ensure the LSET workcenter meets the requirements outlined below. Once Unit POCs are identified, they will contact the ANG LSEP OPR and ensure applicable LSET Pre-Departure Checklist items are accomplished.

8.10.1.9.1. **(Added-ANG)** Deliverable Products. At a minimum, Unit POCs will provide all Wing and Group OIs/Supplements, a copy of the most recent Self Inspection results, and copies of the last 2 quarterly Unit MSEP Summaries. The ANG LSEP OPR may require additional information from unit POCs, and will notify Unit POCs of additional requirements NLT 30 days prior to the LSET Evaluation date.

8.10.1.9.2. **(Added-ANG)** LSET Workcenter Requirements. ANG LSETs require a room which provides desktop space for 30 personnel, contains adequate power outlets/capacity to run 30 laptop computers, and contains a minimum of 2 Local Area Network (LAN) ports. The workcenter must contain a minimum of 2 desktop computers configured with a full Microsoft Office Suite. These computers must be mapped to a high speed black and white printer and a color printer. The black and white printer must be located in the LSET workcenter, while the color printer should be located a convenient walking distance from the workcenter. The ANG LSEP OPR may identify additional requirements to the Unit POC.

8.10.1.10. **(Added-ANG)** On-Site Evaluation Methodology. The ANG LSET will determine compliance with the items on the ANG LSET Checklists by interviewing key personnel, analyzing system-generated reports and documentation provided by unit personnel, conducting Task Evaluations on applicable RIL Items, and by conducting general surveillance of unit activities. ANG LSET evaluations will not generate maintenance workload for unit personnel. When the LSET identifies a checklist item as non-compliant, the LSET will assign a Non-Compliance Cause Code (NCC) to the item to help identify potential systemic issues either at unit or headquarters levels. These NCCs will be grouped in to either "Unit" or "Headquarters" categories, depending on which level the LSET Team Chief deemed to be most causal to the non-compliance. ANG LSETs will provide an Outbrief and Final Report to the Maintenance Group Commander before departing the base. During the LSET, the following types of write-ups are possible:

8.10.1.10.1. **(Added-ANG)** Discrepancy. Non-Compliant items on Non-CCIs, Task Evaluations in which minor discrepancies were noted, and any other discrepancy noted during general surveillance which would most likely not cause serious injury, death, excessive litigation, or cause serious adverse mission impact.

8.10.1.10.2. **(Added-ANG)** Task Evaluation Fail. Any task evaluation rated as "Fail.".

8.10.1.10.3. **(Added-ANG)** Finding. Non-Compliant CCIs and any other discrepancy noted through general surveillance which could cause serious injury, death, excessive litigation, excessive cost, or cause serious adverse mission impact. Findings are reportable to NGB/A4.

8.10.1.10.4. **(Added-ANG)** Pass—Zero Defects. A Task Evaluation in which no defects were noted.

8.10.1.10.5. **(Added-ANG)** Outstanding Performer. Unit member who goes above and beyond in all aspects of their duties, displays exceptional prowess during the evaluation, generates innovative solutions to systemic problems, and embodies the Air Force Core Values.

8.10.1.10.6. **(Added-ANG)** Top Shop Award. Award given to the best shop in the aircraft maintenance complex, as determined by the LSET Team Chief. LSET Team Chiefs will consider compliance rates, pass rates, TDVs, DSVs, UCRs, and other LSET data as required to determine the recipient of this award.

8.10.1.10.7. **(Added-ANG)** Best Practice. A local program which meets all applicable regulatory implementation requirements, has a positive impact on mission accomplishment, reduces manpower requirements, reduces system processing time, or facilitates widespread compliance with directives.

8.10.1.10.8. **(Added-ANG)** Higher Headquarters Finding. A critical issue, outside of a unit's scope to rectify, which has an immediate adverse impact on mission accomplishment.

8.10.1.11. **(Added-ANG)** Evaluation Ratings. ANG LSET evaluations will not be rated. However, the ANG LSET will provide evaluated units key numerical indicators as follows:

8.10.1.11.1. **(Added-ANG)** CCO Compliance Rates. Represents the compliance rate of all LSET Checklist items categorized as part of one of the Maintenance Group CCOs identified in **Chapter 1**.

8.10.1.11.2. **(Added-ANG)** Performance Score. This Performance Score will be calculated utilizing the criteria outlined for Unit MSEPs. It will help to validate the effectiveness of the Unit MSEP.

8.10.1.12. **(Added-ANG)** Post-LSET Follow Up. After each LSET is complete, commanders will receive a letter from NGB/A4 requesting corrective actions to the Reportable Findings contained in the Final Report. Additionally, the ANG LSEP OPR will brief all HHQ Findings identified during the LSET to the NGB/A4 Staff NLT 7 days after completion of the LSET. The NGB/A4 staff will immediately work all HHQ Findings as a priority over all other workload and continue to work them to resolution through the ANG LSEP Corrective Action Council (CAC). For every LSET evaluation, the ANG LSEP OPR will review all unit corrective actions and accomplish an on-site follow-up visit to validate corrective actions and brief the status of all HHQ Findings and headquarters-level NCCs to the unit commander.

8.10.1.13. **(Added-ANG)** Crosstell. The ANG LSEP Crosstell Database is located on the ANG LSEP Community of Practice (CoP) on the AF Portal (**https://afkm.wpafb.af.mil/ASPs/CoP/OpenCoP.asp?Filter=AN-LG-00-05**). The ANG LSEP OPR will post new crosstell data, at a minimum, within 7 days of completing each LSET evaluation.

8.10.2. MXG/CC will direct QA to follow-up inspections when a maintenance activity receives a rating of "unsatisfactory" or "marginal" during a MAJCOM LSEP/MSEP inspection. Re-inspect an area within 30 days after the "unsatisfactory" rating or within 60 days after the "marginal" rating is given. The results of follow-up inspections will be forwarded to the MAJCOM LSET/MSET office by the MXG/CC.

8.10.3. Unit MSEP. The unit MSEP must be designed to provide maintenance managers with a method to evaluate the unit's compliance with AF, MAJCOM and local maintenance directives and policies.

8.10.3. **(ANG)** The Unit MSEP is not intended to be used for disciplinary actions against personnel. Under no circumstances will a failed MSEP evaluation be used as a sole source for disciplinary actions.

8.10.3.1. Scope of the Unit MSEP. Units are responsible for developing their MSEP and conducting local inspections to ensure their programs, maintenance technician proficiency, equipment condition and other focus areas are in compliance with AF, MAJCOM and local directives.

8.10.3.1.1. Types of MSEP Evaluations and Inspections. The following types of evaluations, inspections and observations support the MSEP: PEs, QVIs, SIs, MIs, DSVs, TDVs, UCRs and when directed, other inspections. These inspection terms may differ based on MAJCOM-approved QA databases.

8.10.3.1.2. Applicability to Contract Maintenance Activities. The unit level MSEP is not applicable to contract maintenance activities unless required by the SOW/PWS/PRS/contract. However, MAJCOM MSEP is applicable to contract maintenance activities to ensure that the contractor is complying with the requirements of the contract and the QAEs are surveilling the contractor using the criteria outlined in the PWS and Performance Plan.In addition, wings must ensure their contracted maintenance programs are in compliance with applicable directives through evaluations performed by the QAEs using the criteria outlined in the SOW/PSW/PRS and PMAP. When updating the SOW/PSW/PRS or PMAP, review applicable directives and include/update those SOW/PSW/PRS and PMAP items necessary to ensure contract maintenance activities will comply with applicable directives and inspection criteria.

8.10.3.2. Executing the Unit MSEP. The MSEP is executed by QA, which permits the MXG/CC to focus the unit program on problem areas where improvements are needed. QA may be augmented by personnel from other MXG organizations. Units may develop a local system to track inspection reports until closed.

8.10.3.3. Unit MSEP Evaluation Criteria. Units will use MAJCOM-approved checklists or develop standard functional checklists from AF and MAJCOM directives for use at the unit level. For evaluations of technician proficiency and equipment condition, applicable technical data is the evaluation standard.

8.10.3.4. Unit MSEP Grading. Units must grade their MSEP evaluations using objective ratings (Outstanding, Excellent, Satisfactory, Marginal, and Unsatisfactory). The unit MSEP shall publish a final report of findings from the evaluation for distribution to all inspected organizations.

8.10.3.4.1. Inspections and evaluations performed (e.g., PE, SI, QVI) will be rated "PASS/FAIL". ***EXCEPTION***: see AFI 21-204 for additional information on Nuclear Weapons PE's and certification program.

8.10.3.4.1. **(ANG)** All failed inspections/evaluations/TDVs/UCRs/DSVs will be routed to immediate supervisor, section NCOIC, superintendent, SQ/CC and MXG/CC.

8.10.3.4.2. The results of the total number of inspections accomplished will be assigned one of the following five tier ratings based on number of inspections passed versus completed. In addition, the results of the total number of inspections accomplished will be rolled up to create

a cumulative rating by flight, squadron and group. ICBM units shall follow MAJCOM-approved scoring criteria to determine five tier ratings.

8.10.3.4.2.1. Outstanding 95-100%

8.10.3.4.2.2. Excellent 90-94.99%

8.10.3.4.2.3. Satisfactory 80-89.99%

8.10.3.4.2.4. Marginal 70-79.99%

8.10.3.4.2.5. Unsatisfactory 0-69.99%

For example, QA inspects 10 aircraft preflights with the following results: 8 “passes” and 2 “failures”. Divide the total “passes” by the total inspections (8/10=0.80) 80 percent for a “Satisfactory” rating. In addition, the results of the total number of inspections accomplished during the month shall be rolled up to create a cumulative rating by flight, squadron, group as directed by the MXG/CC.

Squadron	Total Inspections	Pass	Fail	Percent	Rating
Aircraft Maintenance Squadron	90	80	10	88.89	SAT
Equipment Maintenance Squadron	125	120	5	96.00	OUT
Component Maintenance Squadron	85	80	5	94.12	EXC
Group Totals	300	280	20	93.33	EXC

8.10.3.4.3. Deduct 0.5 percentage points for each TDV, UCR, and DSV from the overall percentage grade. Refer to paragraph **8.10.1.4.3.** for an example.

8.10.4. Unit MSEP Focus Areas. The purpose of the MSEP is to measure how well units meet or exceed standards. QA shall assess how well units are meeting compliance goals and look for areas of opportunity for improvement. The results of the evaluations and inspections are organized into a summary. The following areas must be addressed:

8.10.4.1. Compliance with and currency of TOs and directives. Personnel at all levels are responsible and accountable for enforcing this mandatory standard. Ensure all applicable TOs and directives are complete, current and used.

8.10.4.2. Aircraft and equipment forms documentation. Ensure forms used to document any maintenance related action for aircraft or equipment are documented according to 00-20 series TOs, specific equipment TO requirements and applicable command directives and supplements.

8.10.4.3. Aircraft and Equipment Inspections. Inspect aircraft and equipment (including munitions) IAW TOs and directives.

8.10.4.4. Compliance and Management of Safety, Environmental and Housekeeping Programs. Personnel at all levels are responsible for minimizing risk to equipment and personnel.

8.10.4.5. Training. Verify training is correctly documented and ensure individuals are qualified to perform evaluated tasks.

8.10.4.6. Unit Directed Programs. Verify units' programs are in compliance with local directives.

8.10.4.7. Key Task List (KTL). The KTL must cover tasks that are complex and those affecting safety of flight. All maintenance actions/functions listed on the KTL require mandatory call-in to QA each time the maintenance action/function is accomplished. QA evaluators will respond and perform an evaluation, but on a limited basis may waive the inspection. QA must review and update the list at least annually to ensure it encompasses those maintenance actions/functions directly affecting quality of maintenance. MAJCOMs may identify KTLs.

8.10.4.8. Routine Inspection List (RIL). MAJCOMs may define additional RIL actions and tasks. QA shall consolidate Operations Officer/MX SUPT inputs/suggested changes and obtain MXG/CC approval. Additional requirements for nuclear capable units are located in AFI 21-204. Tasks shall not be removed from the RIL without MXG/CC approval. The RIL must contain the following if applicable to the group:

8.10.4.8.1. Pre-flight, thru-flight, basic post-flight and HSC inspections.

8.10.4.8.2. Aircraft and equipment forms/MIS documentation.

8.10.4.8.3. Aircraft ground handling, launch and recovery, and servicing tasks.

8.10.4.8.4. Technical data use and currency.

8.10.4.8.5. CTK Program.

8.10.4.8.6. TMDE calibrations when the performing work center is not a PMEL IAW TO 00-20-14.

8.10.4.8.7. AGE maintenance.

8.10.4.8.8. AGE flightline use.

8.10.4.8.9. Housekeeping.

8.10.4.8.10. Vehicles (including AF IMTs 244 and/or 1800-series).

8.10.4.8.11. Aircraft washes and corrosion inspections.

8.10.4.8.12. Equipment washes, and corrosion inspections.

8.10.4.8.13. Environmental compliance.

8.10.4.8.14. **(Added-ANG)** F-15/F-16 Inlet/Intake/exhaust inspections.

8.10.4.8.15. **(Added-ANG)** F-15/F-16 Aircraft with F100-PW-100/220/220E 4K Fan Drive Turbine Module, 4th Stage Turbine Blade, Eddy Current Inspection. Each qualified NDI inspector shall have at least one Personnel Evaluation performed annually.

8.10.4.9. QA must coordinate with Munitions Activity to ensure all required inspections are performed IAW AFI 21-200 series publications. Additionally, QA, in coordination with the Munitions Flt CC/Chief (or Operations Officer/ MX SUPT in a MUNS), must develop quarterly standards for the following areas:

8.10.4.9.1. Munitions accountability.

8.10.4.9.2. Munitions storage practices and safety.

8.10.4.9.3. Munitions inspections.

8.10.4.9.4. Munitions material handling and test equipment.

8.10.4.9.5. Munitions stockpile management.

8.10.4.9.6. Tactical missiles records system.

8.10.4.9.7. Munitions infrastructure (e.g., adequacy of lightning protection and grounding systems, bonding of facility doors, adequate power conversion equipment).

8.10.4.9.8. Munitions training programs.

8.10.4.10. Include high-missed carded items from PEs and QVIs in the unit's monthly (ANG - quarterly) MSEP summary. A high-missed carded item is defined as any work card item missed at least three times during a one-month period. Units should use the high-missed carded items to enhance maintenance-training programs, detect trends and improve the quality of maintenance. MDSA will review items to identify any relationships with repeat, recur and CND trends.

8.10.5. Unit MSEP Evaluation and Inspection Plan. QA develops an evaluation and inspection plan showing areas, types and numbers of inspections and evaluations that must be conducted. When developing the plan, QA OIC/SUPT will:

8.10.5.1. Address areas of concern identified by maintenance managers and the WWM.

8.10.5.2. Tailor the plan for each squadron, flight or section.

8.10.5.3. Review, formalize and distribute the inspection or evaluation plan.

8.10.5.4. Review and update the plan.

8.10.6. Discrepancy Categories.

8.10.6.1. Category I (CAT I). A required inspection/TO procedural item missed or improperly completed. This category is a specific work card item or TO step, note, caution or warning for a specific condition or action. Use sub-classifications of major or minor to indicate the discrepancy's relative severity.

8.10.6.2. Category II (CAT II). An obvious defect, which could have been readily detected by a technician or supervisor, but is not a specific work card item or TO step, note, caution or warning for that specific evaluated task. Use sub-classification of major or minor to indicate the discrepancy's relative severity.

8.10.6.3. Definitions of major and minor.

8.10.6.3.1. A major finding is defined as a condition that would endanger personnel, jeopardize equipment or system reliability, affect safety of flight or warrant discontinuing the process or equipment operation.

8.10.6.3.2. A minor finding is defined as an unsatisfactory condition that requires repair or correction, but does not endanger personnel, affect safety of flight, jeopardize equipment reliability or warrant discontinuing a process or equipment operation.

8.10.6.4. Reporting. Report the condition of the equipment to the owning and using work centers. QA must provide a reference for identified discrepancies. Review available documents and forms

including work cards, job guides, WUC manuals, checklists, AFOSHSTDs and 00-series TOs. The review determines accuracy, currency and compliance with applicable TOs.

8.10.7. Personnel Evaluations (PE). A PE is an over-the-shoulder evaluation of a maintenance action or inspection by an individual or team. Use PEs to evaluate job proficiency, degree of training and compliance with technical data. Individuals performing, supervising or evaluating maintenance tasks are subject to a PE. Rate PEs "Pass" or "Fail" based on established AQLs/standards. Document the PE on AF IMT 2419, **Routing and Review of Quality Control Report**, MIS, or in the MAJCOM-approved database. Ensure a PE is accomplished on all technicians that perform maintenance. ***NOTE:*** MAJCOMs will determine the frequency of PEs.

8.10.7. **(ANG)** PEs are conducted on all individuals that perform maintenance. The MXG/CC will determine the frequency, not to exceed every three years for Drill Status Guardsman and 18 months for full time personnel.

8.10.7.1. Performing a PE. When performing a PE, the QA inspector briefs the individual or team on the evaluation and how it will be rated. The PE may include an evaluation of the individual's training records, tool box, TMDE and TOs. The evaluation starts when the individual or team begins the task, or portion of the task to be evaluated, and is completed when the job or previously determined portion of the task is finished. Limit the PE to the same inspection card deck or technical data required for the job. When performing an evaluation, the inspector determines if the technician or supervisor performed the job IAW technical data and appropriate instructions. Provide feedback to the individual or team and supervision upon completion. The types of PEs are:

8.10.7.1.1. Individual Evaluations. This is a QA over-the-shoulder evaluation of a technician or supervisor performing a job. The evaluator may start or stop the task evaluation at any step. PEs may be performed on individuals working alone or as part of a team. Evaluations must accurately assess the proficiency of each individual under evaluation.

8.10.7.1.2. Team Evaluations. This is a QA over-the-shoulder evaluation of technicians and supervisors performing a team task. A team task is one requiring more than one person to complete the task (e.g., refueling, ECM pod up/down loading, bomb build-up, towing, weapons maintenance, pylon installation). The evaluator may start or stop the task evaluation at any step.

8.10.7.2. Rating Personnel Evaluations. QA rates each evaluation based on AQLs/standards (see paragraph **8.11.** for AQL definitions/standards). A failed PE rating means the specific task was not performed within the established AQL/standards. The rating applies only to the specific task evaluated and not to other tasks that a technician or supervisor is qualified to perform. Upon completion of a failed evaluation, the evaluator must provide on-the-spot feedback. If the work center supervisor determines an individual should be restricted from performing the task unsupervised, the supervisor annotates the technician's Job Qualification Standard (JQS) or CFETP IAW AFI 36-2201. Determine ratings as follows:

8.10.7.2.1. Pass: Number of discrepancies does not exceed AQL/standards.

8.10.7.2.1.1. CAT II minors shall be documented for trends, but must not be counted against the AQL.

8.10.7.2.2. Fail: An evaluation that results in any of the following:

8.10.7.2.2.1. Number of discrepancies exceeds the established AQL/standards.

8.10.7.2.2.2. A technician fails to detect a major discrepancy while complying with an inspection or work card requirement.

8.10.7.2.2.3. A technician fails to comply with a technical data step that could affect the performance of the equipment involved or cause injury to personnel.

8.10.7.2.2.4. A technician demonstrates a lack of technical proficiency or system knowledge.

8.10.7.2.2.5. Training/certification not documented.

8.10.7.2.2.6. A technician commits a safety violation. See definition of DSV.

8.10.7.2.2.7. A technician fails to document maintenance actions in appropriate equipment records.

8.10.7.2.2.8. For nuclear weapons maintenance, an unsatisfactory rating must be given when any of the deficiencies or applicable unsatisfactory conditions in TO 11N-25-1, *Nuclear Weapon Technical Inspections*, or AFI 21-204 exist.

8.10.8. Quality Verification Inspections (QVI). A QVI is an inspection of equipment condition, or a maintenance process, an assessment following a maintenance inspection, servicing or repair action, or verification that a technician or supervisor properly completed an inspection or repair action. QVIs shall not be conducted after equipment operation when such operation could invalidate indications of proper job accomplishment. Limit QVIs to the same inspection card deck or technical data required for the job. Normally this inspection does not require disassembling parts, removing stress panels or like actions. A QVI for required Dash 6 TO inspections may be accomplished by checking a portion of the required card or area. The QVI report should reflect deficiencies by the individual who accomplished the task and identify specific discrepancies. Document discrepancies in active equipment records and forms (i.e., AFTO Form/IMT 781A, AFTO IMT 244 or AF IMT 2420, **Quality Assurance Inspection Summary**).

8.10.8.1. Rating QVIs. Rate QVIs “pass” or “fail” by comparing the number of discrepancies with the established AQLs/standards.

8.10.8.1.1. Pass: Number of discrepancies does not exceed established AQL/standard.

8.10.8.1.1.1. CAT II minors shall be documented for trends, but must not be counted against the AQL.

8.10.8.1.2. Fail: An inspection that results in any of the following:

8.10.8.1.2.1. A technician failed to detect a major discrepancy after completing an inspection, work card or task requirement.

8.10.8.1.2.2. Number of CAT I minor discrepancies exceeds the established AQL/standard.

8.10.8.1.2.3. A technician is not signed off in training records as task qualified.

8.10.8.1.3. Document the QVI in the MAJCOM-approved QA database. Each QVI is chargeable to the technician or supervisor who signed off/cleared the “corrected by” block or “inspected by” block of the applicable maintenance form or equipment record. When evaluating the technician who signed off the “inspected by” block, evaluate only the items normally verified by signing off the “Red-X”. Only one evaluation shall be scored for each inspection.

8.10.9. Special Inspections (SI). SIs are inspections not covered by QVIs, PEs or MIs. SIs may include, but are not limited to, aircraft and equipment forms inspections, document file inspections, CTKs, TO files, vehicle inspections, housekeeping, safety practices, FOD Program, etc. SIs may be condition, procedural or compliance oriented. The MAJCOM-approved QA database will be used to document special inspections. SIs can be non-rated. If rating a SI, rate them "Pass" or "Fail" based on established AQLs/standards.

8.10.10. Management Inspection (MI). Perform these inspections to follow-up on trends, conduct investigations or conduct research to get to the root cause of problems. MXG/CC, SQ/CC or work center supervisors may request MIs. MIs may encompass PE/QVI trends and other inspection data; NMC causes; aborts and trends; in-flight emergency trends; high component or system failure rates; suspected training deficiencies, and tasks outlined in aircraft Dash 6 TOs. Report MI results to the requester, and allow them latitude to explore options prior to implementing corrective actions. MIs can be non-rated and may be counted in QA trends. Examples of MIs could be OAP procedures, EOR procedures, management of reparable components, etc. The MAJCOM-approved QA database will be used to document management inspections.

8.10.10. **(ANG)** Management Inspections will be loaded in QuAD.

8.10.11. Detected Safety Violations, Technical Data Violations, and Unsatisfactory Condition Reports (DSV, TDV and UCR). This category represents observed events or conditions with safety implications or technical violations not related to an inspection or evaluation and are considered unsafe, not IAW established procedures, or in the case of equipment, unfit to operate. The MAJCOM-approved QA database will be used to document DSV, TDV and UCRs. QA documents any of the following conditions:

8.10.11.1. Detected Safety Violation (DSV). An unsafe act by an individual. The inspector must stop the unsafe act immediately. Do not document a separate DSV on an individual undergoing a personnel evaluation since the unsafe act automatically results in a "Fail" rating on the PE. Use the word "Safety" when a safety violation is committed during a PE.

8.10.11.2. Technical Data Violation (TDV). An observation of any person performing maintenance without the proper technical data available and in use. The technician must have knowledge of all general directives associated with the job prior to performing the task. However, those directives need not be present at the job site. Do not document a separate TDV on an individual undergoing a PE, since failure to use technical data automatically results in a "Fail" rating.

8.10.11.3. Unsatisfactory Condition Report (UCR). An unsafe or unsatisfactory condition, other than a DSV, chargeable to the work center supervisor. UCRs may be documented even when it is not possible to determine who created the condition.

8.10.12. Acceptance Inspections. Owning work centers perform acceptance inspections to determine equipment condition and adequacy of depot or contractor maintenance as prescribed by TO 00-20-1. The unit performs acceptance inspections when receiving newly assigned equipment or as a result of aircraft transferring from another unit, command or depot. QA develops procedures for aircraft acceptance and transfer inspections. Personnel who perform acceptance inspections should be familiar with the general work requirements and knowledgeable of the contract specifications of the work performed at depot. Include procedures for:

8.10.12.1. Reviewing the depot/contractor maintenance contract requirements (when available locally). This does not apply to MAJCOM-sponsored programs such as PDM.

8.10.12.2. Reporting discrepancies found during acceptance inspections (applicable to equipment received from depot) and monitor corrective actions IAW TO 00-35D-54. DRs shall be input into Deficiency Reporting Entry and Mail Submitter (DREAMS) and fed into DRIS (G021). DRs are sent to the appropriate ALC and appropriate MAJCOM functional manager.

8.11. Establishing Acceptable Quality Levels (AQL/Standards). An AQL denotes the maximum allowable number of minor findings that a KTL task, RIL task, process or product may be charged for the task to be rated "Pass." It must be strict enough that the task, process or product meets an acceptable level of quality, but isn't so strict that a "pass" rating is unattainable. The AQL is derived/revised from QA performance-based data. Units must develop procedures for determining minimum AQLs delineating an "attainable" quality level. MAJCOMs may develop standardized AQLs. These levels shall comprise the AQL standards for the weapon system RILs. AQLs must be reviewed at frequencies determined by the MXG/CC.

8.11. (ANG) AQLs will never be less than one (1).

8.11.1. Failure to meet an AQL/standard results in the task being rated as "Fail".

8.11.2. AQLs/baselines for nuclear maintenance, cruise missile maintenance and nuclear weapons handling tasks are defined in AFI 21-204 as four minor errors for weapons maintenance tasks and two minor errors for weapons handling tasks, and shall not be adjusted.

8.12. MAJCOM-approved QA database. Every unit must capture and catalog the minimum data elements depicted in the following paragraphs into their database for trending, crosstell and benchmarking purposes. Capture assessment and trend data using a database that makes information easily exportable for crosstell and benchmarking purposes. Every effort should be made to fully utilize Local Area Networks to provide all supervisors with real time, read-only access to the database. Units will develop procedures to restrict/grant levels of access to this information. Whenever possible, read-only access should be available to all unit personnel. Minimum data fields contained in the database must be:

8.12. (ANG) ANG QuAD will be used.

8.12.1. Work center: Input the shop code whose process was inspected.

8.12.2. Inspector: Enter the employee number of the inspector.

8.12.3. Employee: Enter the employee number or equivalent of the person inspected.

8.12.4. Date: Enter the date the inspection was completed.

8.12.5. Time: Enter the time of day when the inspection took place (24-hour clock).

8.12.6. Shift: Enter the shift during which the actual work was performed.

8.12.7. Type Inspection Performed: This code reflects the inspection performed. (e.g., PE, SI, QVI)

8.12.8. WUC/LCN or Type Event Code (TEC): This code reflects the event being evaluated. (e.g., CTK, phase)

8.12.9. AQL/standards: The number of discrepancies allowed for a particular item or process (task).

8.12.10. Inspection Rating: "Pass" or "Fail".

8.12.11. Equipment: Enter the type of equipment assessed.

8.12.12. Equipment ID: Enter the equipment ID. Example of this field would be A/C serial number 91-0387, SG01, etc.

8.12.13. Discrepancy Category: Identify discrepancies as: Major, Minor (CAT I, CAT II).

8.12.14. Remarks: The narrative of inspector findings.

8.13. Monthly Summary (Quarterly for ANG). The MSEP summary advises the WG/CC and MXG/CC of the quality of maintenance. The monthly summary shall be published and distributed (may be electronic) to the WG/CC, MXG/CC and appropriate activities in the maintenance complex. Compile the summary from inspection data, load crew evaluation statistics (provided by WS) and summaries. The MSEP summary will include visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas and descriptions of successful programs or initiatives. As a minimum, the monthly narrative report must contain an analysis of the MSEP results, a summary of significant CAT I and II discrepancies, technical inspections and recommendations for improvement. Care must be taken to ensure that no classified information is included in unclassified MSEP summaries. To ensure the greatest visibility possible for MSEP summaries, classified parts must be published separately from the main summary. Although most portions of the MSEP summary will not be classified, the category of nuclear weapons stockpile, if used, must always be classified. Prior to preparing the narrative report, QA must conduct a study of trends. The relationship between personnel evaluation and technical inspection results may indicate strong or weak portions of the program (e.g., excellent personnel evaluation scores and marginal equipment scores).

8.13. (ANG) A quarterly summary spreadsheet will be forwarded to NGB/A4QI, NLT the last day of the month following the end of the quarter. This spreadsheet will include a synopsis of the unit MSEP e.g. PEs, QVIs, SIs with pass/fail results. The spreadsheet will also include Unit Self Inspection results.

8.13.1. Trend Analysis. Review previous reports to determine if inspected areas have improved or declined. Consistently high scores in any category may indicate emphasis on that part of the program is not focused on the unit's actual problem areas. Low scoring areas may require a reassessment of the corrective actions taken by management. Continuous communication between MDSA, Operations Officer/MX SUPT, and QA personnel is essential. Highlight trends and root causes in the summary.

8.14. MSEP Meetings. The unit must conduct quarterly meetings to review MSEP data. The MXG/CC shall chair the meeting. Attendees must include, as a minimum, squadron Operations Officers/MX SUPTs, WWMs, inspectors and senior analysts. This meeting is a forum to refine MSEP direction, address maintenance issues and resolve problems. It provides cross-tell to all maintenance activities by reviewing QA inspections, evaluations and trends.

8.15. QA Product Improvement Programs. This section describes QA's specific program responsibilities. QA must establish the following:

8.15.1. Product Improvement Program (PIP). The PIM promotes deficiency reporting and provides a sound PIP based on inputs from maintenance activities. The PIM emphasizes and promotes product improvement and ensures maintenance personnel are familiar with them by circulating flyers/newsletters, visiting commanders calls, presenting the program at maintenance orientation briefings and making routine visits to maintenance areas. Combined with daily maintenance data reporting, the PIP provides an effective means to improve the R&M and support PIWG of aircraft and equipment. PIP includes the following programs:

8.15.1.1. Deficiency Reporting.

8.15.1.2. AFTO IMT 22.

8.15.1.3. Source, Maintenance, Recoverability (SMR) change code request.

8.15.1.4. R&M as applicable.

8.15.1.5. Configuration Management Program; AF IMT 1067 and TCTOs.

8.15.2. The PIM responsibilities include the following:

8.15.2. **(ANG)** The PIM is appointed by the QA Superintendent and is assigned to QA and is the wing's aircraft and equipment maintenance focal point for promoting the PIP. The QA Superintendent may elect to delegate day-to-day management of the elements of the PIP.

8.15.2.1. Deficiency Reporting . DR is the process of reporting prescribed by TO 00-35D-54, DREAMS and TO 00-5-1. The PIM's DR responsibilities are:

8.15.2.1. **(ANG)** N/A to the UAE owned F-16 block 60 program and RNAF owned F-16 aircraft.

8.15.2.1.1. Monitor the DR process to ensure items are properly loaded in the MIS database and are accomplished IAW TO 00-35D-54. Warranty information is located in AFMAN 64-110. Units supporting reconnaissance aircraft, comply with warranty DR requirements IAW the applicable weapons system logistics support plan (LSP).

8.15.2.1.2. Ensure compliance with acceptance inspection reporting requirements on aircraft returning from depot or contractor maintenance IAW TO 00-35D-54.

8.15.2.1.3. Ensure procedures are followed for submitting DRs. The DR must be adequately defined, deficiencies properly categorized, meet the criteria of the governing instruction or TO and must be investigated, when necessary. DRs must be submitted using DREAMS. **https://wwwmil.wpafb.af.mil/infocen**

8.15.2.1.4. Ensure detailed background information on suspected deficiencies are submitted.

8.15.2.1.5. Verify each report against pertinent publications and assign the appropriate precedence and category.

8.15.2.1.6. Screen reported deficiencies for possible unit-unique contributing factors. Initiate management action on unsatisfactory conditions resulting from local procedures or a lack of technical capability.

8.15.2.1.7. Perform/coordinate a technical review of DRs returned to the unit without an adequate response. Determine whether to resubmit with additional information.

8.15.2.1.8. Maintain a file for all R&M deficiencies (non-quality) reported by the maintenance units, but not meeting the criteria for submission to AFMC. If required, these deficiencies are tracked for future PIWG action on a product improvement worksheet IAW AFI 21-118.

8.15.2.1.9. Review the DR prior to releasing to the ALC or AFMC Maintenance Wings IAW TO 00-35D-54. Perform exhibit-processing oversight by coordinating with the ALC and the LRS to ensure proper exhibit control and handling.

8.15.2.2. AFTO IMT 22. Submit AFTO IMT 22 IAW TO 00-5-1 to correct and improve TOs. The PIM will:

8.15.2.2. **(ANG)** Paragraph **8.15.2.2.** and all subparagraphs through **8.15.2.4.2.** are N/A to UAE F-16 block 60 program and RNAF owned F-16 aircraft.

8.15.2.2.1. Ensure proper evaluation is performed and forms are properly filled out and processed IAW TO 00-5-1 and MAJCOM supplements. WS reviews and approves all AFTO IMTs 22 for weapons loading TOs. WS must fill in Block 9 and indicate "Approval"/"Disapproval" in Block 1.

8.15.2.2.2. Ensure control numbers are assigned and forwards all AFTO IMTs 22 via e-mail transmission or Joint Computer-Aided Acquisition Logistics Support (JCALS) to the appropriate action agency IAW TO 00-5-1 and MAJCOM supplements.

8.15.2.2.3. Maintain an AFTO IMT 22 suspense file. ***NOTE:*** Approved AFTO IMTs 22 do not constitute authority to deviate from established TOs.

8.15.2.2.4. Conduct a technical review of disapproved AFTO IMTs 22 to determine whether to resubmit with additional information. Evaluate for submission to technical working groups (e.g., PIWG, MDS maintainer's conferences). Dispose of disapproved AFTO IMTs 22 IAW the *AF Records Disposition Schedule* located at **https://afrims.amc.af.mil/**.

8.15.2.3. Source, Maintenance, and Recoverability Code (SMR) change request. The SMR process is a means for maintenance technicians to recommend routine and priority changes to SMR codes. DREAMS must be used to submit an SMR change request (formerly known as AFTO Form 135). The PIM shall:

8.15.2.3.1. Process and manage SMR change requests IAW TO 00-25-195 and track the status of SMR change requests.

8.15.2.3.2. Conduct a technical review of SMR change requests returned from depots and item managers with an unsatisfactory answer to determine whether to resubmit with additional information. Evaluate for submission to technical working groups (e.g., PIWG, MDS maintainer's conferences).

8.15.2.3.3. Coordinate repair evaluation meetings when approved SMR change requests affect several agencies.

8.15.2.3.4. Serve as focal point for base level repair and manufacturing capability (base self-sufficiency). Interface with maintenance, LRS and the AFREP manager to support enhanced base repair initiatives.

8.15.2.4. Reliability and Maintainability (R&M). At the core of AF R&M efforts are technical working groups (e.g., PIWG, MDS maintainers conferences). PIMs must forward inputs IAW AFI 21-118. Assessing unit R&M concerns is a twofold process. First, review all reported R&M deficiencies and determine those caused by unit factors and local conditions versus those beyond the unit's control. Second, review available maintenance and supply trends and high work hour consuming repairs. Analysis and the LRS provide the majority of this information. The PIM will:

8.15.2.4.1. Consolidate R&M deficiency reports for each system (e.g., AGE, weapons, PMEL, avionics, engines, commodities and airframe) and prioritize proposed items for a particular system IAW weighted factors in AFI 21-118. The PIM conducts R&M working group

meetings with supervisors and technicians when it is determined beneficial to ensure quality inputs to technical working groups to solicit ideas to enhance product improvement. These meetings are chaired by the MXG/CC or designated representative. Prepare an agenda and maintain meeting minutes.

8.15.2.4.2. Distribute technical working group minutes and ALC corrective actions to appropriate base agencies.

8.15.3. **(Added-ANG)** Monitors the Repair Enhancement program if applicable

8.16. Configuration Management (CM) and Modification. QA is responsible for monitoring the CM and modification process. This includes reviewing, submitting and tracking unit modification proposals being worked by MAJCOMs and ensuring proper implementation of approved modification instructions or TCTOs. Follow procedures outlined in **Chapter 7** of this instruction for specific QA responsibilities in the TCTO process.

8.16.1. QA reviews TCTOs, OTIs and command modifications to determine their applicability to unit maintained equipment, notifies the MOC and monitors expended man-hours consumption and the quality of unit compliance actions. Munitions and special weapons TCTOs are reviewed by their respective sections.

8.16.1. **(ANG)** Monitors compliance of TCTOs and determines evaluation coverage that is directly related to the complexity of the TCTO as well as to the criticality of the system or the component to be modified. QA monitors the quality of the first job and performs kit proofing as required. Report any deficiencies to appropriate agencies. QA is the sole authority for determining applicability.

8.16.2. QA ensures command-directed modifications are documented in the same manner as TCTOs. QA must maintain a copy of command modification instructions on file until they are formally rescinded or removed from the equipment.

8.16.2. **(ANG)** ANG and Reserve Test Center (AATC) will develop procedures for SPO/ALC modifications.

8.16.3. **(Added-ANG)** Participates in all TCTO planning meetings and shall be notified by the performing workcenter when work is started on the first TCTO, OTI, or modification for aircraft and equipment.

8.17. Technical Order Distribution Office (TODO). The TODO ensures TOs are managed IAW AFPD 21-3, AFI 21-303 and TO 00-5-1. Establish the PMEL TODO under the control of the TMDE Flight. TO 00-5-1 provides criteria for establishing levels of TO distribution activities. Additionally, group TODO offices shall control electronic technical data configuration IAW **Chapter 10** of this instruction. Sub-functions of the TODO are described below.

8.17. (ANG) All initial distribution and requisition requirements are sent through QA for processing. Based on requirements, QA sets up TO series initial distribution requirements. This ensures receipt of TCTOs that apply to equipment maintained, owned, or operated within the Wing. If the QA TODO has assumed Wing TO responsibilities, QA shall ensure they are on requirement for all TCTO series utilized within the Wing. The 162 FW and LM Aero shall develop written procedures for Technical Publication management for the UAE F-16 block 60 program. The 178 FW and the RNAF maintenance liaison office shall develop local procedures for Technical Publication management for the RNAF owned F-16 aircraft.

8.17.1. The QA TODO shall:

8.17.1.1. Coordinate with the appropriate QA subject matter expert (SME) for each incoming TCTO to determine applicability.

8.17.1.2. Date stamp TCTOs to reflect the date the hard copy is received. The compliance period start date for an inspection TCTO is upon receipt of the TCTO itself and it must be completed entirely within the stated time frame or the affected system/equipment must be removed from service. Determine applicability by aircraft serial number for aircraft TCTOs, engine serial number for engine TCTOs and by part number or other specific criteria for commodity TCTOs. Date stamping all TCTOs with the date received indicates QA has reviewed the TCTO and that it is applicable. Only date stamped TCTOs are authorized for use. All TCTOs received from outside agencies must be routed through QA for the review process.

8.17.1.3. Provide copies of the TCTO to the work centers doing the work. Mark these TCTOs as "working copy/destroy when complete". Do not place these working copies in a formal TO file. Provide a file copy of the TCTO to PS&D.

8.17.1.4. Ensure personnel assigned as a TODO/TODA meet requirements set forth in TO 00-5-1, AFI 21-303 and applicable directives.

8.17.2. QA Central TO File. As a minimum, the QA file must contain copies (paper copies for paper-only TOs or local access to digital TOs) of general and procedural TOs and copies of all TCTOs pertaining to the equipment owned, operated or maintained by the MXG. The file is kept to meet QA requirements, not to duplicate TOs held by maintenance work centers.

8.17.3. Automated Technical Order Management System (ATOMS). In addition to its designed purpose as established in TO 00-5-1, ATOMS serves as a locator for maintenance TOs. Updates are based on information from squadron TODA requisitions.

8.17.4. TODOs on-line with JCALS (ETIMS once fielded) must use both JCALS and ATOMS to perform all TODO operations (ATOMS provides a feature for the receipt and redistribution of TOs to multipile TODAs not available through JCALS). All TODOs not on-line with JCALS must use ATOMS to establish and maintain records for all TOs required and distributed by organization shops and offices serviced by the TODO IAW TO 00-5-1.

8.17.5. Local Work Cards, Job Guides, Page Supplements and Checklists. Limit use of local work cards (LWC), local job guides (LJG), local page supplements (LPS) or local checklists (LCL) to accomplish maintenance on AF equipment. Locally prepared technical instructions must not be used to circumvent AFMCs inherent responsibility for technical data (see TO 00-5-1). The TODO must review and manage all locally developed products IAW TO 00-5-1 and MAJCOM supplements for safety and adequacy of procedures. Ensure LWCs, LJGs, LPSs and LCLs are reviewed for currency when source reference data changes. Develop OIs to comply with these policies.

8.17.5. **(ANG)** Locally developed products are reviewed for safety and adequacy of procedures by the QA SME.

8.17.6. DMS Maintenance. To ensure effective and timely TO and TCTO distribution, TODOs are responsible for identifying the proper addressees for message distribution to receive interim Operational/Safety supplement TCTOs. TODOs must establish distribution requirements per TO 00-5-1 and AFMAN 33-326, *Preparing Official Communications*.

8.17.6. **(ANG)** MXG/CC may delegate this responsibility as required. Alternate means of secure distribution may be utilized. TODOs will ensure correct AIGs for TOs are established.

8.17.7. TO Change Notification. The TODO must prepare a list of all changes and revisions to indexes, TOs, inspection work cards and checklists. This list must include TO number and date received. This list must be included in the wing's weekly maintenance plan and flying schedule or electronically linked. Supervisors must review the list of changes and ensure all personnel are aware a change or revision has been received. Additionally, "Immediate" action TCTOs must be dealt with upon receipt, and "Urgent Action" TCTOs, safety supplements and interim supplements must be brought to the attention of supervisors within 24 hours of receipt.

8.17.8. TO File Inspections. The QA TODO shall inspect other maintenance TODOs/TODAs in the maintenance complex at least annually along with performing spot checks of TO files. As a minimum, the TODO will develop an inspection checklist or use the "TODO and TO Account Checklist" provided in TO 00-5-1. As part of this inspection, the TODO should evaluate and ensure whether the TODO/TODA has received the proper training.

8.17.8. **(ANG)** The QA TODO shall inspect TODAs in the maintenance complex at least every 24 months along with performing spot checks of TO files. The TODO must follow-up within 90 days when non-compliance is noted.

8.17.9. TODOs must effectively control the electronic data configuration on applicable E-Tools IAW **Chapter 10** of this instruction.

8.17.10. TODOs shall maintain records of Automated Computer Program Identification Number System (ACPINS) using Technical Orders 00-5-1, 00-5-16, and 00-5-17. TODOs shall set up software sub-accounts with each appropriate shop/section and ensure each shop/section has the most current software on hand. Additionally, TODOs shall include ACPINs in the routine and annual checks required by Technical Orders 00-5-1.

8.18. One-Time Inspections (OTI). OTIs are normally look-only actions to verify the existence of suspected equipment conditions or malfunctions. All TCTOs directing an inspection must indicate whether previous inspections satisfy the one-time requirement.

8.18.1. MAJCOM, NAF and Local OTIs. Process and manage MAJCOM, NAF or local OTIs with the same procedures as a TCTO issued from an ALC. HQ, NAF or MXG/CCs initiate OTIs. OTIs are issued with a data code consisting of a unique alpha prefix and a six character sequence number. MAJCOM OTI data codes shall begin with the second character of their command sequence code in TO 00-20-2, Appendix B (e.g., C for ACC, V for AFSOC, AMC will use "Y" since their second character command code is L, AFMC will use "T" to deconflict with AFRC) NAF OTIs shall begin with N, and local OTIs shall begin with L. For MAJCOM and NAF OTIs, the six remaining characters identify the year, month and a sequence number. For example, C060601: is the first ACC OTI issued during June 2006.

8.18.2. For local OTIs, the six remaining characters identify the originating wing, year issued and a sequence number (e.g., LXXXYY01: L for local OTI, XXX for unit designation, YY for two digit year , and 01 for the first in the year sequence). The data code is used to report and control OTI compliance.

8.18.2. **(ANG)** N/A to ANG. The following only applies. For local OTIs, the six remaining characters identify the originating wing, year issued and a sequence number (e.g., LXXXY01: L for local OTI,

XXX for unit designation, Y for one digit year , and 01 for the first in the year sequence). The data code is used to report and control OTI compliance.

8.18.2.1. OTI Contents. Minimum contents include statements of:

8.18.2.1.1. Title.

8.18.2.1.2. Applicable Equipment.

8.18.2.1.3. Date OTI was issued.

8.18.2.1.4. Data Code.

8.18.2.1.5. Type or category (i.e., immediate, urgent, routine action).

8.18.2.1.6. Background, purpose or reason.

8.18.2.1.7. Compliance period.

8.18.2.1.8. Remove from service date.

8.18.2.1.9. Recession date.

8.18.2.1.10. By whom to be accomplished (AFSC and man-hours required).

8.18.2.1.11. Tools required.

8.18.2.1.12. How work is to be accomplished (give detailed and specific step-by-step instructions).

8.18.2.1.13. Operational checks (if required to verify operational status, list TO references).

8.18.2.1.14. Record actions.

8.18.2.1.15. Compliance reporting (MAJCOMs may require periodic status).

8.18.2.1.16. OPR (the OTI's drafter; include name and telephone number).

8.18.3. OTI Distribution. OTIs are sent to all applicable organizations. The MXG/CC shall determine cross-tell value for OTIs to lead commands for the equipment or MDS.

8.18.3. **(ANG)** The Quality Assurance Superintendent shall determine crosstell value for OTIs to lead commands for the equipment or MDS.

8.19. Functional Check Flights (FCFs).

8.19. (ANG) Functional Check Flights (FCFs). N/A to the ANG. Subparagraphs **8.19.1.** through **8.19.4.3.** are also N/A. The ANG FCF procedure begins with paragraph **8.19.5. (Added)**.

8.19.1. FCFs, to include OCFs, are performed to ensure an aircraft is airworthy and capable of accomplishing its mission. However, FCFs are not normally flown when the airworthiness of the aircraft can be determined by maintenance operational checks prescribed by a technical directive. Additional guidance may be found in AFI 11-401, *Aviation Management*; AFI 11-202V3*, General Flight Rules*; AFI 13-201, *AF Airspace Management*; TO 1-1-300, *Acceptance/Functional Check Flight and Maintenance Operational Checks*; TO 00-20-1; and applicable Dash 6 and Dash 1 TOs. The OG/CC is responsible for appointing an OIC to manage and administer the program. The MXG/CC and OG/CC must establish and implement local FCF procedures published in the wing supplement to this instruction.

8.19.2. The FCF OIC and QA FCF manager will:

8.19.2.1. Establish local FCF procedures and checklists for any specific local aircraft requirements to include configuration, administration, control, and documentation of the FCF, OCF, and high-speed taxi check programs. Coordinate them with OG Standardization/Evaluation. Procedures will be published in the wing supplement to this instruction.

8.19.2.2. Establish an FCF training and certification program. Track FCF qualification on the 'Letter of X's', as well as training qualification requirements in QA.

8.19.2.3. Review FCF results on a continuing basis and recommend modified FCF criteria and procedures.

8.19.2.4. Work with maintenance and operations in areas of flying safety, standardization and operational maintenance priorities with respect to the FCF program.

8.19.2.5. Coordinate with the appropriate squadron for an FCF pilot/aircrew and provide squadron operations with the aircraft tail number, reason for the FCF and anticipated takeoff time.

8.19.2.6. Maintain an information file for briefing aircrews. As a minimum, this file must contain unit directives concerning FCF procedures, authorization lists for FCF crews and an FCF checklist for each MDS assigned.

8.19.2.7. An FCF checklist must be used for each FCF. QA must debrief all FCFs with the appropriate debrief function. During debriefing, the FCF checklist and aircraft forms must be reviewed to determine if all requirements have been accomplished. Each discrepancy discovered during the FCF must be documented on AFTO Form/IMT 781A. After completing the review, the checklist must be sent to PS&D for inclusion in the aircraft jacket file.

8.19.2.7.1. Maintain a copy of the AF IMT 2400, **Functional Check Flight Log,** or equivalent automated product for deficiency and trend analysis.

8.19.3. The QA FCF manager will:

8.19.3.1. Ensure the FCF aircrew is briefed (for all FCFs to include OCFs) on the purpose and extent of the flight, previous maintenance problems and discrepancies recorded on the aircraft or engines related to the FCF.

8.19.3.2. Ensure aircraft W&B documents are reviewed.

8.19.3.3. Ensure AF IMT 2400 or an equivalent automated product is maintained to provide information for evaluation and analysis. Include the date and time of the FCF, aircraft serial number, reason for FCF, name of debriefer and name of aircraft commander. The FCF Log also indicates if the aircraft was released for flight, reasons for any non-release, action taken and date completed and the date maintenance documents were forwarded to PS&D.

8.19.4. The AMU accomplishes the following:

8.19.4.1. Configure the aircraft for FCF/OCF IAW technical data and local directives.

8.19.4.1.1. Ensure all maintenance actions are completed and all AFTO IMTs 781 are documented IAW Dash 6 and 00-series TOs.

8.19.4.1.1.1. All maintenance actions on transient aircraft requiring FCF must be reviewed by QA prior to FCF. If the aircraft MDS/type is not assigned at the transient base, then the owning unit must provide a qualified FCF pilot/crew and maintenance as required.

8.19.4.2. Flight Requirements. The mandatory requirements for FCF are outlined in TO 1-1-300 and the applicable Dash 6 TO. FCF profiles are normally determined by, and tailored for, the maintenance requirement causing the FCF. The decision to fly a full profile FCF is the MXG/CC's and OG/CC's discretion. Tailor the FCF profile for the discrepancy causing the FCF applying the following guidance:

8.19.4.2.1. Require a clean configuration whenever FCFs are flown for flight controls, fuel controls or engine changes. Do not remove fixed wing pylons, fixed wing tip tanks and fixed external stores unless they interfere with fuel scheduling, aerodynamic reaction, air loading, signal propagation, etc.

8.19.4.2.1.1. Do not fly FCFs in conjunction with other missions or training requirements, unless authorized in TO 1-1-300.

8.19.4.2.1.2. Comply with weather condition requirements IAW TO 1-1-300 at all times unless aircraft are urgently required for operational commitments. Waiver provisions are outlined in TO 1-1-300 for the MDS involved.

8.19.4.2.1.3. FCF Release. An FCF release occurs upon the successful completion of all requirements as determined by the FCF aircrew. The final decision to release rests solely with the aircraft commander. An FCF conditional release may occur when the aircraft does not successfully complete FCF requirements, due to a specific system malfunction, if the FCF aircrew (in consultation with maintenance) determines the malfunction may be corrected without generating another FCF. If on review of the corrective action the FCF aircrew accepts the maintenance action as a satisfactory repair of the malfunction, they may release the aircraft from FCF.

8.19.4.2.1.4. FCF Aborts. All ground aborts result in a non-release. An aircraft may be released for flight if a malfunction occurs during an FCF, which is not related to the condition generating the FCF and the original condition checks good.

8.19.4.3. Units must refer to MAJCOM instructions for FCF procedures away from home station.

8.19.5. **(Added-ANG)** FCFs, to include OCFs, are performed to ensure an aircraft is airworthy and capable of accomplishing its mission. However, FCFs are not normally flown when the airworthiness of the aircraft can be determined by maintenance operational checks prescribed by a technical directive. Additional guidance may be found in AFI 11-401, *Aviation Management*; AFI 11-202V3*, General Flight Rules*; AFI 13-201, *AF Airspace Management*; TO 1-1-300, *Acceptance/Functional Check Flight and Maintenance Operational Checks*; TO 00-20-1; and applicable Dash 6 and Dash 1 TOs. The OG/CC is responsible for appointing an OIC (ANG: Chief FCF Pilot) to manage and administer the program. The MXG/CC is responsible for appointing a QA FCF Manager. The MXG/CC and OG/CC must establish and implement local FCF procedures published in the wing supplement/instruction to this instruction to include when applicable: Fuel Load, Expanded preflight check by the aircrew, Ground procedures (compass swing, taxi check), Radio procedures, Radar control procedures, Procedures to enter test area, Control bailout area, Control jettison area, Emergency landing base, Debriefing procedures, and procedures to adequately prepare, perform, and debrief ATD FCFs.

8.19.5.1. **(Added-ANG) EXCEPTION** : Units with C-21, C-22, C-26, C-130, C-5, C-17, C-38, C-40, E-8C, and KC-135 series aircraft rarely perform FCFs, and are exempt from the following requirements contained in this instruction: initial checkouts, initial certification letters, annual certifications, and FCF currency requirements. When these aircraft require a FCF, the Operations Group Commander issues temporary written certification designating the most highly qualified crew available. OG/CC, Chief FCF Pilot, and QA ensure crews are thoroughly briefed on specific FCF requirements and procedures. File certification letters with the FCF program manager.

8.19.5.2. **(Added-ANG)** Operations Group Chief FCF Pilot is FCF-qualified in a unit mission aircraft, and can serve as checkout pilot in mission aircraft.

8.19.6. **(Added-ANG)** The Chief FCF Pilot and QA FCF manager will:

8.19.6.1. **(Added-ANG)** Establish local FCF procedures and checklists for any specific local aircraft requirements to include configuration, administration, control, and documentation of the FCF, OCF, and high-speed taxi check programs. Coordinate them with OG Standardization/Evaluation. Procedures will be published in the wing supplement to this instruction.

8.19.6.2. **(Added-ANG)** Establish an FCF training and certification program. Track FCF qualification on the 'Letter of X's', as well as training qualification requirements in QA.

8.19.6.2.1. **(Added-ANG)** Normally the number of FCF crews does not exceed four per squadron. Units with unique-mission requirements may waive the number of assigned crews at the discretion of the OG/CC. Crew members are certified on the Letter of X's after meeting the flying hour requirements and completing the certification program.

8.19.6.2.2. **(Added-ANG)** If the necessity arises for an FCF during a TDY when an FCF crew is not available, the OG/CC may issue temporary certification, designating the most highly qualified crew available to perform such duties. In addition, the OG/CC ensures crews are briefed on the provisions of TO 1-1-300 and comply with deployed location FCF procedures.

8.19.6.2.3. **(Added-ANG)** The initial checkout and annual certification program for applicable crew members consists of, but is not limited to:

8.19.6.2.3.1. **(Added-ANG)** A comprehensive briefing by the Operations Program Manager on the following:

8.19.6.2.3.1.1. **(Added-ANG)** Procedures listed in this publication.

8.19.6.2.3.1.2. **(Added-ANG)** The publications listed in this section.

8.19.6.2.3.1.3. **(Added-ANG)** Local FCF procedures for the type of aircraft being flown.

8.19.6.2.3.1.4. **(Added-ANG)** The applicable -6 worksheets.

8.19.6.2.3.1.5. **(Added-ANG)** FCF procedures for ATD when devices are possessed by the wing.

8.19.6.2.3.1.6. **(Added-ANG)** Map of local FCF area or route of flight.

8.19.6.2.3.2. **(Added-ANG)** A complete FCF aircraft flight profile (except helicopters) with a certified FCF pilot.

8.19.6.2.3.3. **(Added-ANG)** Checkout may be accomplished in conjunction with an actual FCF. A chase aircraft not requiring an FCF or operational check is used for single seat aircraft. Crewmembers for multiple seat aircraft fly a complete FCF profile with an FCF-certified crewmember for the corresponding crew position if aircraft size or seating capability permits.

8.19.6.2.3.4. **(Added-ANG)** If an ATD is possessed by the wing, a complete ATD FCF profile is flown under the supervision of a certified FCF pilot prior to the aircraft flight.

8.19.6.2.3.5. **(Added-ANG)** Additional FCF checkout sortie requirements are determined locally, based on the complexity of the aircraft and the qualifications/proficiency of the prospective FCF crewmember.

8.19.6.2.3.6. **(Added-ANG)** FCF pilot currency for single seat aircraft is 120 days. To update currency, FCF pilots may accomplish a complete ATD FCF profile or an actual FCF flight. Non-current FCF pilots must not perform FCF duty's until currency is regained. To regain currency, FCF pilots accomplish a FCF in the ATD with a certified FCF pilot. If an ATD is not possessed by the unit, currency may be regained by accomplishing an academic review of the requirements of Paragraph 10.19.5.3**.**, and applicable emergency procedures with a current FCF pilot or operations squadron supervisor. Currency may also be regained by flying an FCF profile with a certified FCF pilot, either as a chase or in the rear seat of a two-seat model (if applicable). If an FCF pilot does not accomplish an ATD or aircraft FCF profile for more than one year, the initial checkout procedures in Paragraph 10.19.5.3**.,** must be accomplished.

8.19.6.2.3.7. **(Added-ANG)** Any FCF crewmember, which loses AFI 11-401 aircraft qualification for over 6 months, must not perform FCF duties until reaccomplishment of initial checkout.

8.19.6.2.3.8. **(Added-ANG)** For single engine aircraft, pilots maintain Simulated Flameout (SFO), and landing currency IAW applicable 11-MDS series guidance. OGs possessing newly assigned aircraft may waive the minimum hourly criteria of this publication (up to one year from the start of unit conversion) and select the most qualified crewmembers for FCFs.

8.19.6.2.3.9. **(Added-ANG)** Use the following minimum hourly criteria, including student time, to designate pilots to perform FCF duties.

8.19.6.2.3.9.1. **(Added-ANG)** 750 hours total and 200 hours first pilot PAA time.

8.19.6.2.3.9.2. **(Added-ANG)** 650 hours total and 300 hours first pilot PAA time.

8.19.6.2.3.9.3. **(Added-ANG)** 575 hours total and 400 hours first pilot PAA time.

8.19.6.2.3.9.4. **(Added-ANG)** Helicopter pilots designated as FCF co-pilots shall be selected by Unit Commander and must follow minimum qualification criteria listed below:

8.19.6.2.3.9.4.1. **(Added-ANG)** Be current and qualified with a minimum of 200 hours total time and 100 hours assigned airframe time.

8.19.6.2.3.9.4.2. **(Added-ANG)** Complete unit FCF Training Program.

8.19.6.2.3.10. **(Added-ANG)** Flight engineers/flight mechanics must have at least 1250 hours total time and 250 hours PAA time. **EXCEPTION**: Helicopter flight engineers must be current and qualified in type aircraft to be checked.

8.19.6.2.3.11. **(Added-ANG)** Other crewmembers are current and qualified in the type aircraft and crew position to be checked.

8.19.6.2.3.11.1. **(Added-ANG)** The crew size for an FCF is the minimum crew necessary to perform required maintenance checks and is never less than the minimum crew as stated in the applicable -1 TO.

8.19.6.2.3.12. **(Added-ANG)** Waivers. OGs may authorize temporary waivers to this publication, for aircrew qualification, when operational requirements dictate. Permanent waivers, not otherwise granted in this publication, require ANG Director of Operations (NGB/A3) and NGB/A4 approval. Requests for permanent waiver of FCF aircrew qualifications contained in this publication are normally submitted through channels to ANG Operations and Training Division (NGB/A3).

8.19.6.3. **(Added-ANG)** Review FCF results on a continuing basis and recommend modified FCF criteria and procedures.

8.19.6.4. **(Added-ANG)** Work with maintenance and operations in areas of flying safety, standardization and operational maintenance priorities with respect to the FCF program.

8.19.6.5. **(Added-ANG)** Coordinate with the appropriate squadron for an FCF pilot/aircrew and provide squadron operations with the aircraft tail number, reason for the FCF and anticipated take-off time.

8.19.6.6. **(Added-ANG)** Maintain an information file for briefing aircrews, may be electronic, as a minimum, this file must contain unit directives concerning FCF procedures, authorization lists for FCF crews and an FCF checklist for each MDS assigned.

8.19.6.7. **(Added-ANG)** An FCF checklist must be used for each FCF. QA must debrief all FCFs with the appropriate debrief function. During debriefing, the FCF checklist and aircraft forms must be reviewed to determine if all requirements have been accomplished. Each discrepancy discovered during the FCF must be documented on AFTO Form/IMT 781A. After completing the review, the checklist must be sent to PS&D for inclusion in the aircraft jacket file.

8.19.6.7.1. **(Added-ANG)** Maintain a copy of the AF IMT 2400, Functional Check Flight Log**,** or equivalent automated product for deficiency and trend analysis.

8.19.7. **(Added-ANG)** The QA FCF manager will:

8.19.7.1. **(Added-ANG)** Ensures each FCF crew is briefed on the documentation requirements for the AFTO Form 781 series and the -6 TO FCF checklists, when applicable.

8.19.7.2. **(Added-ANG)** Ensure the FCF aircrew is briefed (for all FCFs to include OCFs) on the purpose and extent of the flight, previous maintenance problems and discrepancies recorded on the aircraft or engines related to the FCF.

8.19.7.3. **(Added-ANG)** Ensure aircraft W&B documents are reviewed.

8.19.7.4. **(Added-ANG)** Ensure AF IMT 2400 or an equivalent automated product is maintained to provide information for evaluation and analysis. Include the date and time of the FCF, aircraft

serial number, reason for FCF, name of debriefer and name of aircraft commander. The FCF Log also indicates if the aircraft was released for flight, reasons for any non-release, action taken and date completed and the date maintenance documents were forwarded to PS&D.

8.19.8. **(Added-ANG)** The AMXS accomplishes the following:

8.19.8.1. **(Added-ANG)** Configure the aircraft for FCF/OCF IAW technical data and local directives.

8.19.8.1.1. **(Added-ANG)** Ensure all maintenance actions are completed and all AFTO IMTs 781 are documented IAW Dash 6 and 00-series TOs.

8.19.8.1.1.1. **(Added-ANG)** All maintenance actions on transient aircraft requiring FCF must be reviewed by QA prior to FCF. If the aircraft MDS/type is not assigned at the transient base, then the owning unit must provide a qualified FCF pilot/crew and maintenance as required.

8.19.8.2. **(Added-ANG)** Flight Requirements. The mandatory requirements for FCF are outlined in TO 1-1-300 and the applicable Dash 6 TO. FCF profiles are normally determined by, and tailored for, the maintenance requirement causing the FCF. The decision to fly a full profile FCF is the MXG/CC's and OG/CC's discretion. Tailor the FCF profile for the discrepancy causing the FCF applying the following guidance:

8.19.8.2.1. **(Added-ANG)** Require a clean configuration whenever FCFs are flown for flight controls, fuel controls or engine changes. Do not remove fixed wing pylons, fixed wing tip tanks and fixed external stores unless they interfere with fuel scheduling, aerodynamic reaction, air loading, signal propagation, etc.

8.19.8.2.1.1. **(Added-ANG)** Do not fly FCFs in conjunction with other missions or training requirements, unless authorized in TO 1-1-300.

8.19.8.2.1.2. **(Added-ANG)** Comply with weather condition requirements IAW TO 1-1-300 at all times unless aircraft are urgently required for operational commitments. Waiver provisions are outlined in TO 1-1-300 for the MDS involved.

8.19.8.2.1.3. **(Added-ANG)** FCF Release. An FCF release occurs upon the successful completion of all requirements as determined by the FCF aircrew. The final decision to release rests solely with the aircraft commander. An FCF conditional release may occur when the aircraft does not successfully complete FCF requirements, due to a specific system malfunction, if the FCF aircrew (in consultation with maintenance) determines the malfunction may be corrected without generating another FCF. If on review of the corrective action the FCF aircrew accepts the maintenance action as a satisfactory repair of the malfunction, they may release the aircraft from FCF.

8.19.8.2.1.4. **(Added-ANG)** FCF Aborts. All ground aborts result in a non-release. An aircraft may be released for flight if a malfunction occurs during an FCF, which is not related to the condition generating the FCF and the original condition checks good.

8.19.8.2.2. **(Added-ANG)** Do not shut down engines while airborne unless specified in the -6 TO.

8.19.8.2.3. **(Added-ANG)** Conduct FCFs during daylight hours only, except for aircraft with four or more engines, unless waived by provisions specified in TO 1-1-300.

8.19.8.2.4. **(Added-ANG)** Fly FCFs using radar control to the maximum extent possible. Whenever practical, an IFR clearance is filed (except helicopters). In cases where FCF areas are not controlled by ground radar agencies, radar monitoring is used, if available.

8.19.8.2.5. **(Added-ANG)** Fly FCFs for a single engine change on a two-engine aircraft if that aircraft will next fly an extended over-the-water flight, i.e., overseas deployment. This applies to engines with no operating time since major maintenance. It does not apply to engines obtained from donor aircraft with established operating time.

8.19.8.2.6. **(Added-ANG)** Units must refer to deployed location instructions for additional FCF procedures.

8.20. Operational Check Flights (OCFs). Units must establish and publish local procedures to this instruction. OCFs must be kept to a minimum and are not used to replace Dash 6 FCF requirements. OCFs must be flown by experienced aircrews (not required to be an FCF qualified aircrew) and must be accomplished following the same maintenance criteria as FCFs. Fly OCFs when maintenance has been performed that does not require an FCF. Due to the extent of maintenance performed or history of a maintenance discrepancy, a unit determines if an OCF should be flown before the aircraft is flown by an inexperienced aircrew or on an operational mission.

8.20. (ANG) Fly OCFs when an operational check is listed as a -1 or -2 requirement.

8.21. Inflight Operational Checks. Maintenance must document the reason for the inflight operational check. Inflight checks are accomplished:

8.21.1. When test equipment does not exist to perform the operational check on the ground.

8.21.2. At the request of maintenance to validate a maintenance action that cannot be fully verified on the ground.

8.22. High Speed Taxi Checks. High speed taxi checks may be utilized IAW TO 1-1-300 instead of FCFs with MXG/CC and OG/CC authorization, when a maintenance ground operational check requires aircraft movement at higher than normal taxi speeds to operationally check completed maintenance. This procedure should rarely be used due to the potential for aircraft damage; FCFs are preferred over high speed taxi checks. Perform high speed taxi checks with qualified FCF aircrews. Process aircraft forms through QA using FCF procedures. QA develops an aircrew briefing checklist specifically for high speed taxi checks, to include the required FCF briefing items and pertinent warnings, cautions, etc.

8.22.1. To minimize brake and tire wear, configure aircraft with the minimum fuel practical to accomplish the high-speed taxi check. Ensure aircraft is prepared for flight and the Exceptional/Conditional release is signed off. Do not conduct high speed taxi tests, self-propelled movement of the aircraft or any operation where the possibility of becoming airborne exists, with less than the Dash 1 (aircraft flight manual) operational fuel minimums onboard.

8.22.2. Aircrew performing high-speed taxi checks must complete a take-off data card to indicate the highest speed expected to ensure sufficient stopping distance is available for existing runway conditions without exceeding normal brake energy limits. For aircraft equipped with an arresting hook, taxi checks of speeds 100 knots or above require the hook to be lowered once the pilot begins to initiate braking action. For taxi checks below 100 knots, the pilot lowers the hook if there is any doubt about stopping the aircraft within the bounds of the remaining runway.

8.23. Weight and Balance (W&B) Program. Maintain strict accounting of aircraft W&B for safe flight and ground operations. Each unit manages a W&B program, ensuring accurate inventories of aircraft weight. As the W&B authority, the QA Superintendent shall appoint a QA individual to be the unit W&B program NCOIC/manager.

8.23.1. W&B Program NCOIC/Manager Responsibilities. The W&B Program NCOIC/manager must ensure compliance with applicable TOs and other directives in order to safely, effectively, and efficiently manage the unit weight and balance program. The W&B program NCOIC/manager carries out their responsibilities with assistance of W&B technicians. The QA W&B technician must verify scale readings and accomplishes or oversees the actual computations. The QA W&B technician supervises the preparation, leveling and weighing of the aircraft IAW MDS specific –2 and –5 series TOs and TO 1-1B-50, *Basic Technical Order for USAF Aircraft Weight and Balance*. QA W&B technicians are not required to participate in aircraft preparation, but are responsible for ensuring preparation is properly accomplished. The W&B program NCOIC/manager ensures:

8.23.1.1. Sufficient personnel are qualified on assigned aircraft IAW TO 1-1B-50.

8.23.1.2. Complete Dash 21, AME, aircrew life support equipment, etc., W&B inventories are accomplished IAW applicable directives and upon return to home station from any ALC or contractor facility where extensive maintenance was performed. Complete W&B inventories prior to the first flight after arrival.

8.23.1.3. All assigned aircraft are weighed IAW applicable directives. Keep W&B documents required by TO 1-1B-50 for each assigned aircraft. Use the Automated Weight and Balance System (AWBS), and keep a back-up copy of all W&B documents.

8.23.1.4. Procedures are written by QA for routing completed TCTO and modification information for W&B changes.

8.23.1.5. A QA W&B qualified technician inspects W&B documents before flight when locally accomplished modifications affect the basic aircraft weight and moment. Review computations for accuracy.

8.23.1.6. Essential W&B data and changes to the basic weight and moment are available for appropriate mission planning (e.g., Standard Configuration Loads, updates to supplemental handbook).

8.23.1.6. **(ANG)** Electronic use is encouraged.

8.23.1.7. QA periodically inspects unit-stored/maintained W&B equipment for serviceability (as applicable).

8.23.1.8. QA and squadron Operations Officer/MX SUPT work together in developing a W&B Preparation Checklist if the aircraft Dash 5 TO is not comprehensive enough for the task.

8.23.1.9. W&B manuals are maintained for Class I and II aircraft in a central file. Maintain and store Class I and Class II aircraft W&B handbooks IAW TO 1-1B-50. The method of supplemental handbook storage and physical location must be standardized by the lead command for like MDS. (Manage commercial derivative aircraft IAW FAA procedures, contract specifications and the manufacturer's maintenance manuals.) The contract logistics support (CLS) contractor is responsible for managing W&B programs on these aircraft.

8.23.1.10. The SCR reflects W&B certification.

8.24. Chafing Program. This program is mandatory for fighter aircraft units IAW MAJCOM supplements and applicable MDS technical data. This program is optional for other MDS units as determined by the MXG/CC. QA must monitor and track instances of wire, harness and metal line/tube chafing. A randomly selected 10 percent of assigned aircraft are inspected when notification is received of a potential chafing problem involving like model, lot number or block of aircraft. Ideally, select aircraft currently undergoing maintenance or scheduled inspection for random sampling to reduce manpower expenditures.

8.24. (ANG) N/A to the ANG. The following only applies to the ANG. Chafing Program**.** This program is mandatory for fighter aircraft units ANG supplements and applicable MDS technical data. This program is optional for other MDS units as determined by the MXG/CC. When notified of a chafing or potential chafing instance of wire, harness and metal line/tube chafing, QA will evaluate the problem. QA will determine if a random sample of assigned aircraft should be accomplished. If determined the condition warrants a sampling, 10 percent of the assigned aircraft (but not less than three) will be inspected.

8.24.1. The chief inspector shall recommend initiating an OTI if the sampled aircraft indicates a chafing problem or the detected chafing is an operational safety hazard.

8.24.2. QA evaluates and determines if crosstells, DRs or service reports (SRs) are required when chaffing is identified and submits when necessary.

8.24.3. QA must develop local chafing inspection work cards for periodic, pre-flight, thru-flight and basic post-flight inspections, if needed (do not duplicate Dash 6 TOs). Ensure inspectors inspect at least 50 percent of accessible areas, focusing on known chafing areas and work cards dealing with chafing.

8.24.4. QA must utilize a database for the purpose of tracking wire and harness chafing problems identified through OTIs and maintenance cross-tell reports. Consult the database before expending man-hours performing inspections. This could preclude duplication of effort or re-inspection if updated in the automated program.

8.25. Quality Assurance Evaluator (QAE)/ Quality Assurance Representative (QAR). If a CLS aircraft or CFT is assigned, a QAE/QAR must be appointed and trained IAW AFI 63-124. A QAR is the government's on-site inspector and is the liaison between contractor and government personnel at each applicable base. Through administrative actions, the QAR coordinates, processes and reviews documents required to successfully implement the contract. The QAR evaluates the contractors' ability to fulfill the requirements of the contract statement of work, documents contract deviations and provides those to the site manager for necessary corrective actions and coordination. Through system malfunctions or anomalies, the QAR determines the need for government-requested special inspections. They may coordinate all requests for additional support for the contractor with the host and submit recommended contract changes through appropriate channels. They may review or coordinate on host-tenant support agreements affecting contractor support. ***NOTE:*** For the purposes of this instruction QAE is synonymous with quality assurance representative (QAR), contracting officers technical representative (COTR), and contracting officers representative (COR).

8.26. MSEP and Contract Maintenance. Although contract maintenance organizations are not subject to unit MSEP, wings must ensure their contracted maintenance programs are in compliance with applicable directives through evaluations by the Contractor Officer Representative(s) using the criteria outlined in the SOW/PWS/PRS and PMAP.

Section 8B—ALC/AMARC only

8.27. QA Responsibilities.

8.27.1. Responsible to the MXW/CC and MXG/CC to perform as an advisory agency for maintenance, assisting work center supervisors.

8.27.1.1. Implements and administers the MSEP and other programs to include:

8.27.1.1.1. Activity Inspections

8.27.1.2. Ensure management and evaluation of the programs in **Chapter 14** of this instruction and other programs as assigned by the MXW/CC or MXG/CC.

8.27.2. Ensures evaluation of the programs in **Chapter 14** and other programs as assigned by the MXW/CC or MXG/CC.

8.28. MXW Quality Assurance Chief Responsibilities. MXW QA Chief will:

8.28.1. Manage the Activity Inspection Program

8.28.1.1. Attend the initial briefing with inspected unit's leadership

8.28.1.2. Attends the out briefing with the inspected unit's leadership

8.28.2. Appoints a QIMSS focal point for the MXW

8.28.3. Reviews MXG Maintenance Standardization and Evaluation Program (MSEP)

8.28.4. Act as wing focal point to ensure appropriate actions are taken to notify the MAJCOM when deficiencies are found in AF or MAJCOM instructions.

8.29. MXG **QA Chief Responsibilities.** MXG QA Chief shall:

8.29.1. Make recommendations to the MXW/CC or MXG/CC to enhance the quality of maintenance.

8.29.2. Develop the MSEP and monitor the program using the Quality Information Management Standard System (QIMSS).

8.29.3. Designate a First Level Supervisor Quality Assurance Specialist (QAS).

8.29.4. Enusre MIs are performed (when required).

8.29.5. In conjunction with maintenance supervison, develop RILs and provide copies of approved lists to all affected organizations.

8.29.6. Ensure standardized AQLs/standards are developed for all assigned workloads including RIL tasks.

8.29.7. Ensure agendas and presentations are compiled for the MSEP Summary.

8.29.8. If applicable, evaluate and document contractor's performance IAW the PMAP and AFI 63-124.

8.29.9. Assists the MXW QA Chief with managing the Activity Inspection Program.

8.29.10. Perform QA review of local OIs

8.29.11. Develop an evaluation and inspection plan IAW para **8.35.5.** showing areas, types, and numbers of inspections and evaluations that must be conducted.

8.30. First Level Supervisor QAS Responsibilities.

8.30.1. The First Level Supervisor QAS is responsible to the MXG QA Chief for ensuring functions listed below are performed. The First Level Supervisor QAS may delegate day-to-day management responsibility for each area, as appropriate. Each Lead QAS shall:

8.30.1.1. Provide on-the-spot assistance through assigned QASs to correct problems.

8.30.1.2. Assist the analysis section with investigations and studies.

8.30.1.3. Review inspection summary inputs for accuracy and content, as applicable.

8.30.1.4. Initiate actions when additional attention is required to resolve adverse maintenance trends or training problems. Actions include preparing crosstell information bulletins and messages for MXW/CC or MXG/CC release to other ALCs when necessary.

8.30.1.5. Establish procedures for QASs to document completion of inspections.

8.30.1.6. Determine the duties and responsibilities of QASs.

8.31. QAS Responsibilities. QASs will:

8.31.1. Evaluate flightline and back shop maintenance tasks and inspections.

8.31.2. Enter inspection and evaluation data into QIMSS.

8.31.3. Perform QA review of local OIs.

8.31.4. Evaluate forms documentation and MIS inputs.

8.31.5. Perform inspections.

8.32. QA Training.

8.32.1. All QASs, inspectors and evaluators (i.e., QA personnel) must be trained to the extent necessary to perform QA functions. Training requirements contained within AFMC's 1910, QA series Civilian Training Plan (CTP), will be used to identify and document QAS training.

8.32.2. A qualified QAS shall conduct an EPE on each inspector while they are performing one evaluation and one inspection. Each QAS shall be trained and must pass the EPE prior to performing unsupervised evaluations and inspections. All EPEs must be tracked in the Production Acceptance Certification Standard System (PACSS). Additional requirements for nuclear weapons certifying officials are located in AFI 21-204.

8.32.3. Document all training in PACSS. Personnel must be familiar with all tasks they evaluate/inspect. If not mandated otherwise, the First Level Supervisor QAS must determine which tasks inspectors must be PACSS qualified on before an evaluation or inspection is performed.

8.32.4. Ensure QASs and QA augmentees complete AFI 21-112 certification before evaluating egress tasks and comply with TO 00-25-252 before evaluating a completed weld.

8.32.5. QA personnel, including augmentees, who conduct engine run evaluations, are not required to maintain the engine run proficiency requirements outlined in **Chapter 14** of this instruction and AFI

11-218. However, if QASs run engines, they must maintain the applicable aircraft proficiency requirements.

8.32.6. QASs must be trained on all associated safety requirements prior to performing inspections on fuel systems or fuel maintenance facilities IAW TO 1-1-3.

8.33. QA Augmentation. If a functional area does not warrant a full-time position in QA and specialized expertise is warranted, select qualified technicians that are recommended by their Squadron CC or Branch Chief to be augmentees. QA must maintain a listing of current augmentees. In coordination with Squadron CC or Branch Chief, QA shall establish augmentee.

8.34. Activity Inspections. MAJCOMs have the option to establish an activity inspection program for subordinate units to complement MAJCOM and HHQ inspections and assessments. The activity inspections should be designed to give commanders and managers a comprehensive, objective evaluation of mission capabilities and compliance with technical/management directives for each function. If implemented, the MAJCOM activity inspection program should address, as a minimum, the following procedures:

8.34.1. Activity inspections are management and compliance oriented. Management and procedural deficiencies are most often identified by investigating production problems or poor discipline. Inspectors must not only identify discipline, housekeeping and technical discrepancies, but must also attempt to identify the underlying cause for the deficiencies.

8.34.2. The MXW/CC must ensure the depth and detail of the activity inspection is sufficient to evaluate the management capability of the maintenance organization. This is achieved by expanding the minimum requirements outlined herein or by adding special subject items. The MXW QA Chief recommends adjustments to the requirements based on trends and problem areas identified by QA personnel, MAJCOM and AF IG/LSEP/MSEP inspections, or audit reports

8.34.3. The activity inspection must encompass all sections/flights of the organization being inspected and all facets of the operation within each section/flight. Whenever possible, locally required inspections conducted by outside agencies (e.g., wing safety, training, security, LRS, BE, or the fire department) should be accomplished in conjunction with the QA activity inspection. This reduces the number of disruptions to the organization being inspected and also increases the comprehensiveness of the activity inspection

8.34.4. Inspection Requirements. When conducting an activity inspection, the activity inspection team must address internal problems of the unit and problems caused by other activities outside the jurisdiction of the inspected unit. Activity inspections should use (but are not limited to) the appropriate MAJCOM MSET/LSET and IG inspection checklists as the basis for the inspection areas.

8.34.5. Activity Inspection Reports. The report must be objective and factual with specific definitions of problem areas. Appropriate directive references must be included. The report should also contain recommended corrective action on major problem areas. If a solution is not readily apparent, or if the inspector believes one solution is better than another, the report should include appropriate comments.

8.34.6. Follow-up Inspections. Depending upon the severity of discrepancies and the overall rating, the MXW/CC may direct specific follow-up inspections. Follow-up inspections must not cause other inspections to be delayed.

8.35. MSEP. The MSEP is both a MAJCOM and wing/unit program to ensure maintenance organizations comply with AF, MAJCOM and unit directives. MSEPs may be combined with LSEP which focus on supply, transportation and logistics plans functions. However, MSEP must have separate evaluation/ inspection criteria and checklists.

8.35.1. MAJCOM MSEP. MAJCOMs shall establish an office to implement, manage and execute the command's MSEP. The MAJCOM shall develop criteria and create a MSET to evaluate subordinate wings/units for compliance. The MAJCOM MSET shall conduct recurring unit evaluations to ensure maintenance technician proficiency, equipment condition and other command-developed focus areas are in compliance with AF, MAJCOM, and local maintenance and munitions policies and directives.

8.35.1.1. Scope of MAJCOM MSET. The MSET evaluations are not intended to duplicate MAJCOM IG UCIs. However it is acknowledged there will be some overlap of evaluated areas. While MSET/LSET evaluations are not intended to duplicate other MAJCOM inspections (e.g., IG UCIs), they may be conducted simultaneously to minimize impact on the unit being inspected.

8.35.1.1.1. Types of MSET Evaluations and Inspections. The following types of evaluations, inspections and observations support the MSEP: PE, QVI, SI, MI, DSV, TDV, UCR, and when directed, other inspections.

8.35.1.2. Organization of MAJCOM MSEP. The MAJCOM MSEP office shall have at least one permanent member on their MSET. The MSET may be a sub-organization of the LSET (also comprised of permanent members). Personnel from other MAJCOM staff agencies and/or field units may be used to augment the permanent team members.

8.35.1.3. MAJCOM MSET Evaluation Criteria. MAJCOMs will develop standard functional checklists from AF and MAJCOM directives for use at the unit level. For evaluations of technician proficiency and equipment condition, applicable technical data is the evaluation standard.

8.35.1.4. MAJCOM MSET Grading. MSET evaluations may or may not provide and overall grade. If an overall grade is given, MAJCOM MSETs should use subjective ratings (Outstanding, Excellent, Satisfactory, Marginal, and Unsatisfactory). Report findings to the MAJCOM A4 and publish a final report of findings from the evaluation.

8.35.1.4.1. Inspections and evaluations performed and graded by the MAJCOM MSET shall be rated "PASS/FAIL". These may include over-the-shoulder evaluations of unit QA inspectors.

8.35.1.4.2. The results of the total number of inspections accomplished during the inspection may be assigned one of the following five tier ratings based on number of inspections passed versus completed. In addition, the results of the total number of inspections accomplished during the inspection may be rolled up to create a cumulative rating by work center, section, branch, flight, squadron, group, wing and center.

8.35.1.4.2.1. Outstanding 95-100%

8.35.1.4.2.2. Excellent 90-94.99%

8.35.1.4.2.3. Satisfactory 80-89.99%

8.35.1.4.2.4. Marginal 70-79.99%

8.35.1.4.2.5. Unsatisfactory 0-69.99%

8.35.1.4.3. Deduct 0.5 percentage points for each TDV and DSV from the overall percentage grade. For example, a unit earns an overall rating of 92 percent, "Excellent". However, the MSET observed 4 TDVs and 3 DSVs. The sum of the TDVs and DSVs is 7, (4+3=7). Multiply the sum (7) by 0.5, (7x0.5=3.5) and subtract the product (3.5) from the original 92 percent, (92-3.5=88.5). The adjusted total is 88.5 percent; therefore, the unit is rated "Satisfactory."

8.35.1.4.4. For each unresolved Not In Compliance Area (NICA) and any repeat major observation identified by a previous MAJCOM L/MSET, the unit's center commander must update the MAJCOM A4 through the MAJCOM MSEP office at 60 day intervals until the findings are resolved.

8.35.2. The MXW/CC or MXG/CC will direct follow-up inspections when a maintenance activity receives a rating of "unsatisfactory" or "marginal" during a MAJCOM LSET/MSET inspection. Re-inspect an area within 30 days after the "unsatisfactory" rating or within 60 days after the "marginal" rating is given. The results of follow-up inspections shall be forwarded to the MAJCOM LSET/MSET office by the MXW/CC. The purpose of these inspections is to verify the adequacy of corrective actions. These inspections do not replace required activity inspections, but they may be performed concurrently.

8.35.3. Unit MSEP. The unit MSEP must be designed to provide maintenance managers with a method to evaluate the unit's compliance with AF, MAJCOM and local maintenance directives and policies.

8.35.3.1. Scope of the Unit MSEP. Units are responsible for developing their MSEP and conducting local inspections to ensure their programs, maintenance technician proficiency, equipment condition and other focus areas are in compliance with AF, MAJCOM and local directives.

8.35.3.1.1. Types of MSEP Evaluations and Inspections. The following types of evaluations, inspections and observations support the MSEP: PE, QVI, SI, MI, DSV, TDV, UCR, Core Inspections and when directed, OI.

8.35.3.1.2. Applicability to Contract Maintenance Activities. The unit level MSEP is not applicable to contract maintenance activities unless required by the SOW/PWS/PRS/contract. However, MAJCOM MSEP is applicable to contract maintenance activities to ensure that the contractor is complying with the requirements of the contract and the QAEs are surveilling the contractor using the criteria outlined in the PWS and Performance Plan. In addition, wings must ensure their contracted maintenance programs are in compliance with applicable directives through evaluations performed by the QAEs using the criteria outlined in the SOW/PWS/PRS and PMAP. When updating the SOW/PWS/PRS or PMAP, review applicable directives and include/update those SOW/PWS/PRS and PMAP items necessary to ensure contract maintenance activities will comply with applicable directives and inspection criteria.

8.35.3.2. Executing the Unit MSEP. The MSEP is executed by QA, which permits the MXW/CC and MXG/CC to focus the unit program on problem areas where improvements are needed. QA may be augmented by personnel from other MXW organizations.

8.35.3.3. Unit MSEP Evaluation Criteria. Units will use MAJCOM-approved checklists or develop standard functional checklists from AF and MAJCOM directives for use at the unit level. For evaluations of technician proficiency and equipment condition, applicable technical data is the evaluation standard.

8.35.4. Unit MSEP Focus Areas. The purpose of the MSEP is to measure how well units meet or exceed standards. QA shall assess how well units are meeting compliance goals and look for areas of opportunity for improvement. The results of the evaluations and inspections are organized into a summary. The following areas must be addressed:

8.35.4.1. Compliance with and currency of TOs and directives. Personnel at all levels are responsible and accountable for enforcing this mandatory standard. Ensure all applicable TOs, Technical Data, WCDs and directives are complete, current and used.

8.35.4.2. Aircraft and equipment forms documentation. Ensure forms used to document any maintenance related action for aircraft or equipment are documented according to 00-20 series TOs, specific equipment TO requirements and applicable command standards and supplements.

8.35.4.3. Aircraft and Equipment Inspections. Inspect aircraft and equipment (including munitions) IAW TOs and directives.

8.35.4.4. Compliance and Management of Safety, Environmental and Housekeeping Programs. Personnel at all levels are responsible for minimizing risk to equipment and personnel.

8.35.4.5. Training. Verify training is correctly documented to ensure individuals are qualified to perform evaluated tasks.

8.35.4.6. Unit Directed Programs. Verify units' programs are in compliance with local directives.

8.35.4.7. RIL. MAJCOMs may define additional RIL actions and tasks. QA shall consolidate squadron CC or branch chief inputs/suggested changes and obtain the maintenance MXG/CCs approval. Tasks shall not be removed from the RIL without approval from the MXG/CC. The RIL must contain the following if applicable to the group:

8.35.4.7.1. Pre-flight, thru-flight and basic post-flight.

8.35.4.7.2. Aircraft and equipment IMTs/forms/WCD/REMIS documentation.

8.35.4.7.3. Aircraft ground handling and servicing tasks.

8.35.4.7.4. Technical data use and currency.

8.35.4.7.5. CTK/TK (tool Kit) Program.

8.35.4.7.6. TMDE calibrations when the performing work center is not a PMEL IAW TO 00-20-14.

8.35.4.7.7. AGE maintenance

8.35.4.7.8. AGE flightline use.

8.35.4.7.9. Housekeeping.

8.35.4.7.10. Vehicles (including AF IMTs 244 and/or 1800-series).

8.35.4.7.11. Aircraft washes and corrosion inspections

8.35.4.7.12. Equipment washes and corrosion inspections.

8.35.4.7.13. Environmental compliance.

8.35.5. Unit MSEP Evaluation and Inspection Plan. MXG QA develops an evaluation and inspection plan showing areas, types and numbers of inspections and evaluations that must be conducted. When developing the plan, QA Chief will:

8.35.5.1. Tailor the plan for each group, squadron, flight or section.

8.35.5.2. Review, formalize and distribute the inspection or evaluation plan.

8.35.5.3. Review and update the plan.

8.35.6. Unit MSEP Evaluations and Inspections.

8.35.6.1. Definitions of major and minor.

8.35.6.1.1. A major finding is defined as a condition that would endanger personnel, jeopardize equipment or system reliability, affect safety of flight, or warrant discontinuing the process or equipment operation.

8.35.6.1.2. A minor finding is defined as an unsatisfactory condition that requires repair or correction, but does not endanger personnel, affect safety of flight, jeopardize equipment reliability, or warrant discontinuing a process or equipment operation.

8.35.6.2. Reporting. Report the condition of the equipment to the owning and using work centers. QA must provide a reference for identified discrepancies. Review available documents and forms including work cards, job guides, WUC manuals, checklists, AFOSHSTDs, and 00-series TOs. The review determines accuracy, currency and compliance with applicable TOs.

8.35.6.3. Personnel Evaluations (PE). A PE is an over-the-shoulder evaluation of a maintenance action or inspection by an individual or team. Use PEs to evaluate job proficiency, degree of training, and compliance with technical data. Individuals performing, supervising or evaluating maintenance tasks are subject to a PE. Rate PEs "pass" or "fail" based on established AQLs/standards. Document the PE on AFMC IMT 343, **Quality Assurance Assessments** or in QIMSS. Ensure a PE is accomplished on all certified technicians that perform maintenance.

8.35.6.3.1. When performing a PE, the QAS briefs the individual or team on the evaluation and how it will be rated. The PE may include an evaluation of the individual's training records, tool box, TMDE and TO. The evaluation starts when the individual or team begins the task, or portion of the task to be evaluated, and is completed when the job or previously determined portion of the task is finished. Limit the PE to the same inspection card deck or technical data required for the job. When performing an evaluation, the inspector determines if the technician or supervisor performed the job IAW technical data and appropriate instructions. Provide feedback to the individual or team and supervision upon completion. The types of PEs are:

8.35.6.3.1.1. Individual Evaluations. This is a QA over-the-shoulder evaluation of a technician or supervisor performing a job. The evaluator may start or stop the task evaluation at any step. PEs may be performed on individuals working alone or as part of a team. Evaluations must accurately assess the proficiency of each individual under evaluation.

8.35.6.3.1.2. Team Evaluations. This is a QA over-the-shoulder evaluation of technicians and supervisors performing a team task. A team task is one requiring more than one person to complete the task (e.g., refueling, ECM pod up/down loading, bomb build-up, towing, weapons maintenance, pylon installation). The evaluator may start or stop the task evaluation at any step.

8.35.7. Rating Personnel Evaluations. QA rates each evaluation based on AQLs/standards (see paragraph **8.36.** for AQL definitions/standards). A failed PE rating means the specific task was not performed within the established AQL/standards. The rating applies only to the specific task evaluated and not to other tasks that a technician or supervisor is qualified to perform. Upon completion of a failed evaluation, the evaluator must provide on-the-spot feedback. If the work center supervisor determines an individual should be restricted from performing the task unsupervised, the supervisor annotates the technician's PACSS IAW AFMCI 21-108. Determine ratings as follows:

8.35.7.1. Pass: Number of discrepancies does not exceed AQL/standards.

8.35.7.2. Fail: An evaluation that results in any of the following:

8.35.7.2.1. Number of discrepancies exceeds the established AQL/standards.

8.35.7.2.2. A technician fails to detect a major discrepancy while complying with an inspection or work card requirement.

8.35.7.2.3. A technician fails to comply with a technical data step that could affect the performance of the equipment involved or cause injury to personnel.

8.35.7.2.4. A technician demonstrates a lack of technical proficiency or system knowledge.

8.35.7.2.5. Training/certification not documented.

8.35.7.2.6. A technician commits a safety violation. See definition of DSV.

8.35.7.2.7. A technician fails to document maintenance actions in appropriate equipment records.

8.35.7.2.8. For nuclear weapons maintenance, an unsatisfactory rating must be given when any of the deficiencies or applicable unsatisfactory conditions in TO 11N-25-1 *Nuclear Weapon Technical Inspections*, or AFI 21-204, exist.

8.35.8. Quality Verification Inspections (QVI). A QVI is an inspection of equipment condition or a maintenance process, an assessment following a maintenance inspection, servicing or repair action, or verification that a technician or supervisor properly completed an inspection or repair action. QVIs shall not be conducted after equipment operation when such operation could invalidate indications of proper job accomplishment. Limit QVIs to the same inspection card deck or technical data required for the job. Normally this inspection does not require disassembling parts, removing stress panels or like actions. A QVI for required Dash 6 TO inspections may be accomplished by checking a portion of the required card or area. The QVI report should reflect deficiencies by the individual who accomplished the task and identify specific discrepancies. Document discrepancies in active equipment records and forms (i.e., AFTO Form/IMT 781A, AFTO IMT 244 or AFMC IMT 343).

8.35.8.1. Rating QVIs. Rate QVIs "pass" or "fail" by comparing the number of discrepancies with the established AQLs/standards.

8.35.8.1.1. Pass: Number of discrepancies does not exceed established AQL/standard.

8.35.8.1.2. Fail: An inspection that results in any of the following:

8.35.8.1.2.1. A technician failed to detect a major discrepancy after completing an inspection, work card or task requirement.

8.35.8.1.2.2. Number of minor discrepancies exceeds the established AQL/standard.

8.35.8.1.2.3. A technician is not signed off in training records as task qualified.

8.35.8.2. Document the QVI on AFMC IMT 343 or in QIMSS. Each QVI is chargeable to the technician or supervisor who stamped the WCD, signed off/cleared the "corrected by" block or "inspected by" block of the applicable maintenance form or equipment record. When evaluating the technician who stamped the WCD or signed off the "inspected by" block, evaluate only the items normally verified by stamping the WCD or signing off the "Red-X". Only one evaluation shall be scored for each inspection.

8.35.9. Special Inspections (SI). SIs are inspections not covered by QVIs, PEs or MIs. SIs may include, but are not limited to, aircraft and equipment forms inspections, document file inspections, TKs, TO files, vehicle inspections, housekeeping, safety practices, FOD Program, etc. SIs may be condition, procedural, or compliance oriented. QIMSS will be used to document special inspections. SIs can be non-rated. If rating a SI, rate them "Pass" or "Fail" based on established AQLs/standards.

8.35.10. Management Inspection (MI). Perform these inspections to follow up on trends, conduct investigations or conduct research to get to the root cause of problems. MXW/CC, MXG/CC, Branch Chief, SQ/CC or work center supervisors may request MIs. MIs may encompass PE/QVI trends and other inspection data; NMC causes; aborts and trends; in-flight emergency trends; high component or system failure rates; suspected training deficiencies, and tasks outlined in aircraft Dash-6 TOs. Report MI results to the requester, and allow them latitude to explore options prior to implementing corrective actions. MIs can be non-rated and may be counted in QA trends. Examples of MIs could be OAP procedures, EOR procedures, management of reparable components, etc.

8.35.11. Detected Safety Violations, Technical Data Violations, and Unsatisfactory Condition Reports (DSV, TDV and UCR). This category represents observed events or conditions with safety implications or technical violations not related to an inspection or evaluation, and are considered unsafe, not IAW established procedures, or, in the case of equipment, unfit to operate. QA documents any of the following conditions:

8.35.11.1. Detected Safety Violation (DSV). An unsafe act by an individual. The inspector must stop the unsafe act immediately. Do not document a separate DSV on an individual undergoing a personnel evaluation since the unsafe act automatically results in a "Fail" rating on the PE. Use the word "Safety" when a safety violation is committed during a PE.

8.35.11.2. Technical Data Violation (TDV). An observation of any person performing maintenance without the proper technical data available and in use. The technician must have knowledge of all general directives associated with the job prior to performing the task. However, those directives need not be present at the job site. Do not document a separate TDV on an individual undergoing a PE, since failure to use technical data automatically results in a "Fail" rating.

8.35.11.3. Unsatisfactory Condition Report (UCR). An unsafe or unsatisfactory condition, other than a DSV, chargeable to the work center supervisor. Document discrepancies as a UCR when it is not possible to determine who created the condition.

8.36. Establishing Acceptable Quality Levels (AQL/Standards). An AQL denotes the maximum allowable number of minor findings that a RIL task, process, or product may be charged for the task to be rated "Pass." It must be strict enough that the task, process, or product meets an acceptable level of quality, but isn't so strict that a "pass" rating is unattainable. The AQL is derived/revised from QA performance-based data. Units must develop procedures for determining minimum AQLs delineating an

"attainable" quality level. These levels shall comprise the AQL standards for the weapon system RILs. AQLs must be reviewed at frequencies determined by the MXG/CC.

8.36.1. Failure to meet an AQL/standard results in the task being rated as "Fail".

8.36.2. AQLs/baselines for nuclear maintenance, cruise missile maintenance and nuclear weapons handling tasks are defined in AFI 21-204 as four minor errors for weapons maintenance tasks and two minor errors for weapons handling tasks, and shall not be adjusted.

8.37. MAJCOM-approved QA database. Every unit must capture and catalog the minimum data elements depicted in the following paragraphs into their database for trending, crosstell, and benchmarking purposes. Capture assessment and trend data using a database that makes information easily exportable for crosstell and benchmarking purposes. Every effort should be made to fully utilize Local Area Networks and provide all supervisors with real time access to the database. Units will develop procedures to restrict/grant levels of access to this information. Minimum data fields contained in the database must be:

8.37.1. Work center: Input the shop code whose process was inspected.

8.37.2. QAS: Enter the QAS's name.

8.37.3. Employee: Enter the employee's name.

8.37.4. Date: Enter the date the inspection was completed.

8.37.5. Time: Enter the time of day when the inspection took place (24-hour clock).

8.37.6. Type Inspection Performed: This code reflects the inspection performed. (e.g., PE, SI, QVI, etc.)

8.37.7. WUC/LCN or Type Event Code (TEC): This code reflects the event being evaluated (e.g., CTK, phase.)

8.37.8. AQL/standards: The number of discrepancies allowed for a particular item or process (task).

8.37.9. Inspection Rating: "Pass" or "Fail".

8.37.10. Equipment: Enter the type of equipment assessed.

8.37.11. Equipment ID: Enter the equipment ID. Example of this field would be A/C serial number 91-0387, SG01, etc.

8.37.12. Discrepancy Category: Identify discrepancies as: Major, Minor.

8.37.13. Remarks: The narrative of inspector findings.

8.38. Monthly Summary. The MSEP summary advises the MXW/CC and MXG/CCs of the quality of maintenance. The monthly summary shall be published and distributed (may be electronic) to the MXW/CC, MXG/CCs and appropriate activities in the maintenance complex. Compile the summary from inspection data. The MSEP summary will include visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas and descriptions of successful programs or initiatives. As a minimum, the monthly narrative report must contain an analysis of the MSEP results, a summary of significant discrepancies, technical inspections and recommendations for improvement. Care must be taken to ensure that no classified information is included in unclassified MSEP summaries. To ensure the greatest visibility possible for MSEP summaries, classified parts must be published separately from the main summary. Prior to preparing the narrative report, QA must conduct a

careful study of trends. The relationship between personnel evaluation and technical inspection results may indicate strong or weak portions of the program (e.g., excellent personnel evaluations scores and marginal equipment scores).

8.38.1. Trend Analysis. Review previous reports to determine if inspected areas have improved or declined. Consistently high scores in any category my indicate emphasis on that part of the program is not focused on the unit's actual problem areas. Low scoring areas may require a reassessment of the corrective actions taken by management. Continuous communication between MXG/CCs, Branch Chiefs, squadron CCs and QA personnel is essential. Highlight trends and root causes in the summary.

8.39. MSEP Meetings. The unit must conduct quarterly meetings to review MSEP data. The MXW/CC shall chair the meeting. Attendees must include, as a minimum, MXG/CCs, MXG QA Chiefs and squadron CCs. This meeting is a forum to refine MSEP direction, address maintenance issues and resolve problems. It provides cross-tell to all maintenance activities by reviewing QA inspections, evaluations and trends.

Chapter 9

IMPOUNDMENT PROCEDURES

9.1. Aircraft and Equipment Impoundment. Aircraft or equipment is impounded when intensified management is warranted due to system or component malfunction or failure of a serious or chronic nature. Refer to AFI 91-204 for aircraft and equipment involved in accidents, mishaps or incidents.

Section 9A—CWO ONLY

9.2. Specific Guidance. MXG/CCs (or equivalent) will appoint Impoundment Authorities and Impoundment Release Authorities. QA is the OPR for the Impoundment Program and develops local checklists. Impounding aircraft and equipment enables investigative efforts to systematically proceed with minimal risk relative to intentional/unintentional actions and subsequent loss of evidence. MXG/CCs will develop and publish an impoundment program in a local supplement to this instructionand ensure compliance with the procedures in this chapter.

9.3. Impoundment Terms:

9.3.1. Authorized Personnel. Individuals directly involved in the management, safing, troubleshooting, or repair of impounded aircraft or equipment.

9.3.2. Impoundment. Impoundment is the isolation or control of access to an aircraft or equipment item and applicable historical records so an intensified investigation can be completed.

9.3.3. Impoundment Authority. Individual authorized to impound aircraft or equipment. MXG/CC (or equivalent) will designate Impoundment Authorities and they will be tracked on the SCR. The Impoundment Authority will select the Impoundment Official.

9.3.4. Impoundment Release Authority. Individuals authorized to release aircraft or equipment from impoundment. The MXG/CC and MXG/CD (or equivalents) have authority to release aircraft and equipment. (EMXG/CC may designate in writing). In the event of a dual MXG/CC and CD absence, the MXG/CC or CD will appoint an individual in writing as the designated impoundment release authority for the period of the dual absence.

9.3.4. **(ANG)** Delegation of this authority will be extremely limited and no lower than Maintenance Superintendents to include the QA Superintendent.

9.3.5. Impoundment Official. The Impoundment Official will hold the minimum rank of MSgt (but does not need to be tracked on the SCR). Impoundment Officials are the single point of contact for the affected aircraft or equipment item and are responsible for controlling, monitoring, and investigating the impounded aircraft or equipment.

9.3.6. Isolation Area. An area designated by the Impoundment Authority to locate impounded aircraft or equipment. Aircraft may be isolated on the flightline or in hangars. The isolation area will be marked off using cones, ropes, or placards indicating the impoundment condition and isolation area.

9.4. Reasons for Impoundment of Aircraft or Equipment. Impound aircraft or equipment:

9.4.1. When the Impoundment Authority determines extraordinary measures are required to ensure the safe operating condition of a specific aircraft/equipment or to address any degradation of aircraft airworthiness or serious anomaly.

9.4.2. Following an aircraft ground or flight related mishap as defined in AFI 91-204.

9.4.3. Following an uncommanded flight control malfunction. Special attention is required to completely diagnose and correct flight control malfunctions. Following impoundment for uncommanded flight control malfunction, the MXG/CC and OG/CC will coordinate and determine the need for a FCF or OCF unless otherwise directed by Dash 6 requirements.

9.4.4. When an inadvertent release or an explosive mishap is reported.

9.4.5. When authorized procedures are not adequate or the unit is unable to identify or repair loaded nuclear weapons system malfunctions within the criteria of AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapons Systems.*

9.4.6. For engine anomalies to include but not limited to:

9.4.6.1. Unselected propeller reversal.

9.4.6.2. Flameout/stagnation (for single engine aircraft).

9.4.6.3. Unselected power reversal.

9.4.6.4. Engine case penetration, rupture, or burn-through from an internal engine component.

9.4.6.5. When an aircraft experiences a loss of thrust sufficient to prevent maintaining level flight at a safe altitude. This includes all cases of multiple engine power loss or roll back.

9.4.6.6. When an engine has confirmed internal damage due to FOD and is isolated to the engine. Engine will be removed from the aircraft and impounded. Aircraft impoundment is not required.

9.4.6.7. Engine damaged while in transport.

9.4.7. When an in-flight fire occurs.

9.4.8. When an aircraft experiences an in-flight loss of all pitot-static system instruments or all gyro stabilized attitude or direction indicators.

9.4.9. When there is evidence of intentional damage, tampering, or sabotage.

9.4.10. When there are physiological incidents involving aircraft systems or cargo (crew members become ill during flight).

9.4.11. Impoundment Authorities will determine if impoundment is warranted when:

9.4.11.1. A tool or other item has not been found after an extensive search has been conducted.

9.4.11.2. An aircraft landing gear fails to extend or retract.

9.4.11.3. When an aircraft experiences hung ordnance/jammed gun system, refer to **Chapter 12** of this instruction.

9.5. Impoundment Official Responsibilities.

9.5.1. The Impoundment Official is designated as the single POC for impounded aircraft or equipment. They are responsible for controlling and monitoring the investigation of impounded aircraft or

equipment. The Impoundment Official ensures only authorized personnel have access to the impounded aircraft or equipment.

9.6. Impoundment Process and Procedures.

9.6.1. When the Impoundment Authority directs impoundment, a Red X symbol will be placed in the applicable AFTO Form/IMT 781A or AFTO IMT 244 with a statement indicating the reason for impoundment and the name of the assigned Impoundment Official.

9.6.2. The MOC will be notified when an impoundment decision has been made.

9.6.3. The Impoundment Official will use established checklists to guide the sequence of actions.

9.6.3. **(ANG)** If developed.

9.6.4. Control access to impounded aircraft or equipment. Establish an Entry Control Point (ECP) if required.

9.6.4.1. If an ECP is established, the Impoundment Official will ensure an access control log (manual or electronic) is maintained at the ECP of the impounded aircraft, equipment or storage facility to track personnel entering and leaving the area.

9.6.4.1.1. The log will contain the following information as a minimum: individual's name, rank, and employee number, date arrived/departed, and reason for entry.

9.6.4.1.2. The log will be maintained and reviewed on a daily basis until the Impoundment Release Authority releases the aircraft and will be disposed of only after the aircraft is successfully repaired.

9.6.5. Aircraft or equipment records will be controlled at the discretion of the Impoundment Official. When required, the Impoundment Official will:

9.6.5.1. Obtain and secure the current aircraft forms and the aircraft jacket file for aircraft or the AFTO IMT 244 for equipment.

9.6.5.2. Notify the MIS DBM to isolate the aircraft or equipment serial number in order to prevent any changes and maintain the integrity of the historical data until the aircraft or equipment is released.

9.6.5.3. Request any personnel records required to complete the impoundment investigation. These records may include, but are not limited to, individual training records.

9.6.6. Maintenance will be limited on impounded aircraft or equipment until the cause is determined. The Impoundment Official will determine what maintenance can be performed in conjunction with the maintenance required to release the aircraft or equipment from impoundment. Limit maintenance actions to those required to make the aircraft safe.

9.6.6.1. Parts removed from impounded aircraft or equipment will be carefully controlled. This is to ensure that parts, once confirmed as the cause for impoundment, are available to be processed as DR exhibits.

9.6.7. The Impoundment Official selects a team of qualified technicians dedicated to determine the cause of the problem that led to the impoundment. Impoundment team members will be relieved of all other duties (not applicable to ARC) until released by the Impoundment Official.

9.6.8. The Impoundment Release Authority determines the need for a one-time flight and requests appropriate authorization IAW TO 00-20-1.

9.6.9. Once the cause of the malfunction or failure has been positively determined, the Impoundment Official briefs the Impoundment Release Authority on findings, corrective actions, and requests release of the aircraft or equipment from impoundment.

9.6.10. If the cause of the discrepancy could potentially affect other aircraft or equipment in the fleet, QA will provide cross-tell information for up-channeling to the MAJCOM weapon system functional manager and lead commands.

9.6.11. If approved, the Impoundment Release Authority will clear the forms by entering "Investigation Complete, All corrective actions have been reviewed, aircraft or equipment released" referring to original discrepancy in the "corrective action" block, signing the "inspected by" block and initialing over the Red X symbol.

9.6.12. If the cause of a reported malfunction cannot be determined or a positive corrective action cannot be confirmed, the Impoundment Release Authority will determine if further actions are required (e.g., requesting depot assistance, further troubleshooting, FCF/OCF).

9.6.13. When an aircraft is away from home station and encounters a problem warranting impoundment, the following procedures must be followed:

9.6.13.1. Established impoundment procedures must be followed. The MXG/CC or designated representative may temporarily delegate Impoundment and Release Authority to the deployed Operations Officer/MX SUPT.

9.6.13.2. Clear the impoundment discrepancy using "Red X" clearing procedures IAW TO 00-20-1.

9.7. Rules of Impoundment Specifically for Explosive-Related Mishaps. When an inadvertent release or an explosive mishap is reported, the following procedures apply:

9.7.1. In-flight:

9.7.1.1. When the involved aircraft returns to the de-arm or parking area, the aircraft is impounded. Limit maintenance actions to those required to make the aircraft safe.

9.7.1.2. Inform the MXG/CC, MOC, Munitions Control and the wing/base safety office of the impoundment action.

9.7.1.3. Park and isolate aircraft with unsafe or hung munitions in an area approved by weapons safety and airfield management.

9.7.1.4. Investigate and report the incident IAW AFI 91-204.

9.7.2. Ground:

9.7.2.1. The senior ground crew member is in charge of the aircraft or equipment until relieved and ensures involved persons remain at the scene.

9.7.2.2. Protect other aircraft or equipment located near the incident if an explosive hazard exists.

9.7.2.3. Do not change the position of any switches except as needed for safety. Limit maintenance actions to those actions required to make the aircraft or equipment safe.

Section 9B—ALC/AMARC ONLY

9.8. MXG/CC or equivelant will appoint Impoundment Authorities and Impoundment Release Authorities. Impounding aircraft and equipment allows investigative efforts to systematically proceed with minimal risk relative to intentional/unintentional actions and subsequent loss of evidence. MXW/CC will assign a center OPR who manages the impoundment program, creates an impoundment checklist and ensures compliance with the procedures in this chapter.

9.9. Impoundment Terms:

9.9.1. Authorized Personnel. Individuals directly involved in the management, safing, troubleshooting, or repair of impounded aircraft or equipment.

9.9.2. Impoundment. Impoundment is the isolation or control of access to an aircraft or equipment item and applicable historical records so an intensified investigation can be completed.

9.9.3. Impoundment Authority. Individual authorized to impound aircraft or equipment. MXG/CC (or equivalent) will designate Impoundment Authorities and they will be designated in writing. The Impoundment Authority will select the Impoundment Official.

9.9.4. Impoundment Release Authority. Individuals authorized to release aircraft or equipment from impoundment. The MXG/CC (or equivalent) has the authority to release aircraft and equipment. This authority will not be delegated.

9.9.5. Impoundment Official. The Impoundment Official will be no lower than a first line supervisor and be selected by the Impoundment Authority. Impoundment Officials are the single point of contact for the affected aircraft or equipment item and are responsible for controlling, monitoring, and investigating the impounded aircraft or equipment.

9.9.6. Isolation Area. An area designated by the Impoundment Authority to locate impounded aircraft or equipment. Aircraft may be isolated on the flightline or in hangars. The isolation area will be marked off using cones, ropes, or placards indicating the impoundment condition and isolation area.

9.10. Reasons for Impoundment of Aircraft or Equipment. Impound aircraft or equipment:

9.10.1. When the Impoundment Authority determines extraordinary measures are required to ensure the safe operating condition of a specific aircraft/equipment or to address any degradation of aircraft airworthiness or serious anomaly.

9.10.2. Following an aircraft ground or flight related mishap as defined in AFI 91-204.

9.10.3. Following an uncommanded flight control malfunction. Special attention is required to completely diagnose and correct flight control malfunctions.

9.10.4. When an uncommanded release or an explosive mishap is reported.

9.10.5. For engine anomalies to include but not limited to:

9.10.5.1. Unselected propeller reversal

9.10.5.2. Flameout/stagnation (for single engine aircraft).

9.10.5.3. Unselected power reversal.

9.10.5.4. Engine case penetration, rupture, or burn-through from an internal engine component

9.10.5.5. When an aircraft experiences a loss of thrust sufficient to prevent maintaining level flight at a safe altitude. This includes all cases of multiple engine power loss or roll back.

9.10.5.6. When an engine has confirmed internal damage due to FOD and is isolated to the engine. Engine will be removed from the aircraft and impounded. Aircraft impoundment is not required.

9.10.6. When an in-flight fire occurs.

9.10.7. When an aircraft experiences an in-flight loss of all pitot-static system instruments or all gyro stabilized attitude or direction indicators.

9.10.8. When there is evidence of intentional damage, tampering, or sabotage.

9.10.9. When there are physiological incidents involving aircraft systems or cargo (crew members become ill during flight).

9.10.10. Impoundment Authorities will determine if impoundment is warranted when:

9.10.10.1. A tool or other item has not been found after an extensive search has been conducted.

9.10.10.2. An aircraft landing gear fails to extend or retract.

9.11. Impoundment Official Responsibilities. The Impoundment Official is designated as the single POC for impounded aircraft or equipment. They are responsible for controlling and monitoring the investigation of impounded aircraft or equipment. The Impoundment Official ensures only authorized personnel have access to the impounded aircraft or equipment.

9.12. Impoundment Process and Procedures.

9.12.1. When the Impoundment Authority directs impoundment, a Red X symbol will be placed in the applicable AFTO Form/IMT 781A or AFTO IMT 244 with a statement indicating the reason for impoundment and the name of the assigned Impoundment Official.

9.12.2. The maintenance control center will be notified when an impoundment decision has been made.

9.12.3. The Impoundment Official will use established checklists to guide the sequence of actions.

9.12.4. Control access to impounded aircraft or equipment. Establish an Entry Control Point (ECP) if required.

9.12.4.1. If an ECP is established, the Impoundment Official will ensure an access control log (manual or electronic) is maintained at the ECP of the impounded aircraft, equipment or storage facility to track personnel entering and leaving the area.

9.12.4.1.1. The log will contain the following information as a minimum: individual's name, rank and employee number/stamp, date arrived/departed, and reason for entry.

9.12.4.1.2. The log will be maintained and reviewed on a daily basis until the Impoundment Release Authority releases the aircraft and will be disposed of only after the aircraft is successfully repaired.

9.12.5. Aircraft or equipment records will be controlled at the discretion of the Impoundment Official. When required, the Impoundment Official will:

9.12.5.1. Obtain and secure the current aircraft forms and the aircraft jacket file for aircraft or the AFTO IMT 244 for equipment.

9.12.5.2. Notify the MIS DBM (PDMSS, MAXIMO, etc.) to isolate the aircraft or equipment serial number in order to prevent any changes and maintain the integrity of the historical data until the aircraft or equipment is released.

9.12.5.3. Request any personnel records required to complete the impoundment investigation. These records may include, but are not limited to, individual training records.

9.12.6. Maintenance will be limited on impounded aircraft or equipment until the cause is determined. The Impoundment Official will determine what maintenance can be performed in conjunction with the maintenance required to release the aircraft or equipment from impoundment. Limit maintenance actions to those required to make the aircraft safe.

9.12.6.1. Parts removed from impounded aircraft or equipment will be carefully controlled. This is to ensure that parts, once confirmed as the cause for impoundment, are available to be processed as DR exhibits.

9.12.7. The Impoundment Official selects a team of qualified technicians dedicated to determine the cause of the problem that led to the impoundment. Impoundment team members will be relieved of all other duties until released by the Impoundment Official.

9.12.8. The Impoundment Release Authority determines the need for a one-time flight and requests appropriate authorization IAW TO 00-20-1.

9.12.9. Once the cause of the malfunction or failure has been positively determined, the Impoundment Official briefs the Impoundment Release Authority on findings, corrective actions, and requests release of the aircraft or equipment from impoundment.

9.12.10. If the cause of the discrepancy could potentially affect other aircraft or equipment in the fleet, MXG production will up-channel the information through the MXG/CC to the weapon system program office.

9.12.11. If approved, the Impoundment Release Authority will clear the forms by entering “Investigation Complete, All corrective actions have been reviewed, aircraft or equipment released” referring to original discrepancy in the “corrective action” block, signing the “inspected by” block and initialing over the Red X symbol.

9.12.12. If the cause of a reported malfunction cannot be determined or a positive corrective action cannot be confirmed, the Impoundment Release Authority will determine if further actions are required (e.g., further troubleshooting, FCF/OCF).

Chapter 10

TOOL AND EQUIPMENT MANAGEMENT

10.1. Tool and Equipment Management. The objectives of the tool and equipment management program are to prevent and eliminate FOD to aircraft, engines, missiles, training and support equipment, and to reduce costs through strict effective control and accountability of assets. To ensure standardization among maintenance units, commanders and key leaders are responsible for executing an effective tool program. Tool and equipment management applies to CWOs and AMARC/ALCs. Depot teams/factory reps/CFTs shall adhere to AF/MAJCOM/Local guidance for tool control policies and procedures when working on aerospace equipment possessed by the unit. However, because of differences in organizational levels and to minimize confusion, this section addresses responsibilities for both organizations in separate sections below. The tool management program outlined in this instruction represents AF minimum program requirements; MAJCOMs may dictate additional requirements. (***NOTE:*** Personal tools are NOT authorized on the flightline or in any maintenance area. (e.g., Mini-Mag type flashlights, Leatherman type multi-tools, buck knives)).

Section 10A—CWO ONLY

10.2. Guidelines for Program Management.

10.2.1. The MXG/CC is the OPR for the development of wing procedures for control and management of tools/equipment used on the flightline and aircraft/aerospace equipment maintenance industrial areas. As a minimum, guidance will address the following:

10.2.1.1. Standardized procedures for security, control, and accountability (e.g., chits, manual, barcode, etc.) of tools and equipment to include weapons load crew crimpers, die, lead seals, and engine blade blending blue dye. Chits are not authorized to identify missing/removed tools for dispatchable CTKs.

10.2.1.2. Inventory requirements. As a minimum, conduct and document an annual inventory of all tools and equipment.

10.2.1.3. Procedures for warranted tool management.

10.2.1.4. Procedures for control and management of replacement, expendable and consumable hand tools, HAZMATs, and other items contained in CTKs.

10.2.1.5. Procedures for transfer of tools/CTKs at the job site (on-site transfers). CTKs are not normally passed from one individual to another at the job site; however, mission needs occasionally require this action to occur. Ensure tool accountability and control is maintained when transfer occurs between the individuals. As a minimum the individuals involved in the transfer will accomplish a joint inventory and document accordingly.

10.2.1.6. Procedures for lost or missing tools.

10.2.1.7. Assignment of equipment identification designators (EID) for CTKs, non-CA/CRL equipment, and assignment of CTK numbers for tools.

10.2.1.8. Procedures for issue and control of PPE (e.g., ear protectors, reflective belts, headsets). Mark tools or equipment that a work center assigns/issues to an individual IAW MAJCOM guidance.

10.2.1.8. **(ANG)** PPE will be marked with first initial of first name, last name, and last four of SSAN (example JDoe7777).

10.2.1.9. Procedures to ensure positive control of rags.

10.2.1.9.1. A rag is defined as a remnant of cloth purchased in bulk or a standardized, commercial quality, vendor-supplied shop cloth used in general industrial, shop, and flightline operations. Cheesecloth is considered a rag, however, paper products/paper towels are not considered rags. Rags will be uniform in size and color.

10.2.1.10. Procedures to limit numbers of personnel authorized to procure tools.

10.2.1.11. Procedures for control of locally manufactured or developed tools and equipment.

10.2.1.12. Procedures for depot teams, factory representatives, and CFTs when working on equipment within the unit.

10.2.1.13. Procedures and responsibilities for situations where two or more work centers operate a single tool room/support section, or when work centers elect to distribute CTKs or peculiar support/test equipment to decentralized locations.

10.2.1.14. Procedures for control of CDDAR and hydrazine response equipment permanently stored/located in trailers or vehicles.

10.2.1.15. Local procedures must as a minimum direct a second party or on-duty supervisor inspection of the tool kit. The same individual that signs out a CTK cannot sign it back in.

10.2.1.16. Procedures for controlled access to tool rooms.

10.2.1.17. Procedures to control aircrew tools and Life Support tool kits that are dispatchable to the flight line. Coordinate procedures through the Wing Life Support Superintendent.

10.3. General Program Guidelines.

10.3.1. The FLT CC/Chief will designate CTK Custodians in writing. CTK custodians are responsible for tool, HAZMAT, and consumable asset accountability and control.

10.3.2. Flight chiefs/section NCOICs (or equivalents) determine the type, size, and number of CTKs required for their work centers. For weapons load crew CTKs, the WWM will determine the type, size, and number, and approve the master inventory list (MIL).

10.3.2.1. The flight chief/section NCOIC will maintain a complete listing of all CTKs and tools/equipment issued as a single item (e.g., testers, torque wrenches).

10.3.2.1. **(ANG)** N/A to ANG. The following only applies to the ANG. The flight chief/section NCOIC will ensure a complete listing of all CTKs and tools/equipment issued as a single item (e.g., testers, torque wrenches) is maintained by the owning element/workcenter.

10.3.3. Design CTKs to provide a quick inventory and accountability of tools. Clearly mark all CTKs and tools with the EID (follow guidance below). Develop local procedures to determine which tools

are checked out and who has them. Inspect all tools periodically for serviceability IAW TO 32-1-101, *Use and Care of Hand Tools and Measuring Tools.*

10.3.3.1. CTK contents will be standardized to the maximum extent possible within functional elements of a squadron that have similar missions (e.g., aircraft flights/sections and CASTs).

10.3.3.2. Each tool, item of equipment, or consumable contained in a CTK has an assigned location identified either by inlay cuts in the shape of the item, shadowed layout, or silhouette. No more than one item is stored in a cutout, shadow, or silhouette except for tools issued in sets such as drill bits, allen wrenches, apexes, or paired items (e.g., gloves, booties).

10.3.3.2. **(ANG)** May also be labeled if defined cutout is not possible.

10.3.4. A MIL is required for each tool kit or series of identical kits and filed by the CTK custodian in the master MIL file. (***NOTE:*** When TAS is in use, the MIL will be extracted from TAS. Flight commanders or flight chiefs must review and sign the MIL.) For weapons load crew CTKs, the WWM will approve and sign the MIL. The MIL remains valid until contents change. MILs do not require replacement solely to update signature.

10.3.4.1. A copy of the MIL will be kept in the tool and equipment storage facility at all times for inventory purposes. For dispatchable CTKs, a copy of the MIL must be kept with the dispatched CTK at all times.

10.3.4.2. For units authorized to not use TAS contents are identified on the MIL by drawer/section indicating the number and type of each item in each drawer/section of the CTK and total number of all items in each drawer/section. For tools that are sets, identify the total number of items in the set on the MIL. (e.g., allen wrench set -- 9 each allen wrenches + container). The CTK custodian has the authority to interchange “like” items.

10.3.4.2. **(ANG)** In the example above the total equals 10 for the MIL.

10.3.4.3. If chits/dog tags/identification tags or similar tags or dust caps are attached to tools/equipment, they will be secured in a manner that will preclude any possibility of FOD. Locks(s), key(s), and tie down strap(s), if not permanently attached, will be marked/etched with the appropriate CTK number. All items are listed on the MIL.

10.3.4.3. **(ANG)** Tools, equipment and cable assemblies that are assembled and are not intended to be disassembled during use, require only one mark/etch/stamp and one entry on the MIL (e.g., scribes, flashlights, dust cap and lanyards). Pins, streamers and lanyards, as an assembly are considered one item on the MIL.

10.3.4.4. Consumables may be placed in CTKs. If so, they are identified on the MIL as consumables. Examples of consumables include, safety wire, adhesive, wire bundle lacing, solder, etc. Do not include common hardware items such as bolts, nuts, and (or) screws unless they are required as tools.

10.3.4.5. Document removed or broken tools/items on all copies of the MIL and in TAS. In addition to this requirement, units may also document missing or removed tools on a locally developed missing/removed tool log (may be automated). The EID will be removed from any broken/removed tool/item.

10.3.4.5. **(ANG)** N/A to ANG. The following only applies to the ANG. Document permanently removed tools/items on all copies of the MIL and in TAS (if utilized). Document items tempo-

rarily removed in TAS, AF IMT 1297, MAJCOM Form, or locally-developed form (may be automated). Do not document on the MIL. The EID will be removed from any broken or permanently removed tool/item.

10.3.5. Equipment and accessories that do not present a FOD potential and will not leave the work center, support section, or tool room, need not be included in a CTK; however, this equipment must have designated storage locations established. Designated locations may be work areas or stations (e.g., TMDE flight, avionics flights, propulsion flight).

10.3.5.1. Establish designated locations for test equipment and common accessories (e.g., waveguides, attenuators, fittings, cables, adapters) that are not part of a CTK.

10.3.5.2. Industrial shop machinery accessories/attachments (e.g., blades, arbors, chucks, gears) need not be controlled as tools; however, these items will be maintained in designated storage locations for accountability. As a minimum, storage cabinets/drawers will be labeled to identify the contents.

10.3.6. Tools/expendable items used for titanium engine blade blending or oxygen system maintenance will be kept in special purpose kits separate from other tools. In addition to normal CTK identification, these kits will be marked "Controlled Items" "For Titanium Engine Blade Blending Only". For tools utilized in oxygen system maintenance, mark them with the following statement: "For Oxygen System Use Only".

10.3.7. Discard removable (e.g., slide on) pocket clips from tools when possible (flashlights, continuity testers, small screwdrivers, etc.) prior to placement in tool kits. Do not disassemble/damage tools for sole purpose of removing clips, rubber switch guards, etc.

10.3.8. Tools not controlled through CTK procedures are NOT authorized on the flightline, or in any maintenance area (e.g., mini-mag flashlights, leathermans, buck knives, etc.). Mark and control equipment that a work center assigns/issues to an individual IAW MAJCOM supplements. Personally-purchased tools are not authorized.

10.3.9. Flashlights, lanterns, portable lighting devices and light sources will conform to the requirements of TO 00-25-172 when used during servicing operations, TO 1-1-3 when used during fuel cell maintenance, and AFMAN 91-201 when used in explosive environments. ***NOTE:*** Aircraft and equipment TOs may dictate additional restrictions.

10.3.10. For deployment purposes, ensure equipment, tools, and HAZMAT items are properly identified, prepared, and documented IAW AFI 10-403.

10.3.11. **(Added-ANG)** Expendable hand tools such as blades, apexes, files, and file cleaners consumed during use may be placed on bench stock. However, strict accountability and control procedures will be included in unit procedures. If items are not placed on bench stock, the replacement tool procedures in Paragraph **10.8.2. (Added)** apply.

10.4. Tool Accountability. Flight commanders/chiefs and section NCOICs, through CTK custodians, are responsible for tool and equipment accountability and control (knowing where tools are and who has responsibility for them.) When a person signs for a tool or piece of equipment, they are accountable for the item until it is returned to the tool room and accountability transfers back to the CTK custodian (through a representative or tool room employee.)

10.4.1. All units must use TAS for accountability and control of tools and equipment. (ANG must be fully compliant by FY11) Contractors and MEOs are not required to use TAS until the contract is recompeted and the requirement for using TAS is added to the follow-on contract, or the contractor/MEO voluntarily elects to use TAS at no additional expense to the government. ***NOTE:*** Units that had a waiver not requiring the use of TAS, have 1 year from the date of this publication to implement TAS.

10.4.1.1. Units will use TAS to:

10.4.1.1.1. Track the issuence and receipt of all assigned tools, equipment, tool kits, HAZMAT items, TOs (does not apply to TOs, equipment and HAZMAT kept in a shop and not dispatched.)

10.4.1.1.2. Track authorizations/restrictions for special tools/equipment (by individual)

10.4.1.1.3. Track inspections required by this instruction

10.4.1.1.4. Track spare, lost, and damaged (removed) tools

10.4.1.1.5. Develop and manage tool/equipment inventories

10.4.1.1.6. Develop and manage deployment kits (import/export)

10.4.1.2. If TAS is not available (such as at a deployed location), units may use a chit system, AF IMT 1297 or, a MAJCOM or locally approved form for accountability and control of CTKs, equipment, and tools. When using a chit system, chits are controlled as tools to include a beginning and end of shift inventory. Do not issue chits directly to individuals or remove them from tool rooms. Chit control boards are located in secure locations. ***NOTE:*** Aircrew life support CTKs will be manually tracked IAW AFI 21-101 and AFI 11-301 v1. Additionally, ALS shops will develop local tracking procedures to track quantity of serviceable/unserviceable oxygen connectors dispatched to and from the flightline.

10.4.2. Account for all CTKs, tools, and dispatchable equipment at the beginning and end of each shift. Separate shift inventories must be documented by both outgoing and incoming personnel. CTKs present during tool room shift inventories do not need to be opened for inventory.

10.4.2.1. Perform a visual inventory of all CTKs when issued for use, at the completion of job or tasks, and when returned to the tool storage facility. Accomplish a CTK inventory prior to operation of any aircraft or equipment when maintenance actions were performed (e.g., engine run, landing gear retraction, flight control operational checks.)

10.4.2.2. At least annually or when the CTK custodian changes, conduct a comprehensive inventory of all tools, non-CA/CRL equipment, and CTKs. The purpose of this inventory is to perform an extensive inspection of all tools and non-CA/CRL equipment, to include condition, identification markings, and accuracy of the MIL. Inspect all tools for serviceability IAW TO 32-1-101. CTK custodians document these inventories and maintain the most current inventory documentation on file.

10.4.3. Electronic Tools (E-Tools). The following section contains guidance for maintenance personnel and support sections for the accountability, control and use of E-Tools. Group TODO offices must be used to effectively control the electronic technical data configuration. Workgroup managers shall monitor E-Tool configuration (operating system, virus checkers, etc.) IAW 33-series AFIs.

10.4.3.1. The wing and squadron support sections must establish procedures for local accountability, control and use of E-Tools to include laptops computers, electronic "tablets", hand-held devices, etc. As a minimum, representatives from unit Communications, the TODO, Small Computers, and Maintenance should coordinate on the contents of these procedures.

10.4.3.2. E-Tools purchased and used for the purpose of viewing digital technical data and maintenance documentation must be accounted for as Automated Data Processing Equipment (ADPE) IAW 33-Series AFIs.

10.4.3.2.1. Licenses, certification, maintenance and security of E-Tools (hardware and software) must also be IAW 33-series AFIs and AFI 21-116. Units must make maximum use of E-Tool warranties and ensure only serviceable E-Tools with charged batteries, up to date system software, and current technical data are available for checkout.

10.4.3.2.2. E-Tools purchased by the MAJCOM for viewing digitized data and maintenance documentation must only be used for their intended purpose. Only MAJCOM-authorized software required to directly support maintenance activities shall be loaded/installed on E-Tools. E-Tools will not be treated/used as a personal computer.

10.4.3.2.3. An ADPE account specifically designated for E-Tools shall be set up within each support section if applicable. This is to account for E-Tools separately from other small computers within the squadron or support section. A copy of this E-Tool ADPE account must be kept on file by the TODO to facilitate technical data inventory and configuration.

10.4.3.3. The Lead or Group TODO custodian shall be the Wing POC for coordinating E-Tool requirements to support digitized TOs.

10.4.3.3.1. The TODO shall be the focal point between users, support sections, base Small Computers and system administrators for matters concerning digitized technical data and E-Tools.

10.4.3.3.2. The Lead TODO must maintain a copy of all E-Tool ADPE accounts. The Lead TODO(s) shall work with other TODOs and TODAs to ensure E-Tools are configured with current software to support TO and maintenance documentation.

10.4.3.4. E-Tools maintained in a support section will be issued using the same procedures used for other support equipment.

10.4.3.4.1. Ensure E-Tools are managed properly IAW their security classification.

10.5. Marking and Tool Identification.

10.5.1. All units must mark their tools with the standard EID and utilize the AF-approved TAS. Contractors and MEOs are not required to use the EID until the contract requires the use of TAS. (ANG must be fully compliant by FY11).

10.5.1. **(ANG)** TAS is the only authorized software program for tracking tools. ANG units may use manual tracking instead of TAS when the unit's tools are not commingled with the active forces during AEF, contingencies, deployments, etc. Units shall use a chit system, AF IMT 1297, a MAJCOM, or locally approved form must be used for accountability and control of CTKs, equipment, and tools. To identify items manually (not tracked in TAS): Tools, equipment, and CTKs must be etched, stamped, or marked to aid in inventory. Multiple cabinets may be identified as one CTK. The tools or

equipment contained in a CTK must be assigned the number of the parent CTK. Small tools or items belonging to a CTK, which cannot be marked (drill bits, allen wrenches, apexes, containers, lids, etc.) are maintained in a container marked with the assigned number and the quantity of tools contained therein. The container is counted as one of the items. If shadowed, a positive "show and know" concept must be employed with no more than one tool per cutout. The cutout must be labeled to identify the type/size tool, e.g. #2 apex.

10.5.1.1. The EID will consist of nine characters (numbers/letters) of which the first four characters will be a unique World Wide Identification (WWID) code. ***NOTE:*** The intent is for the four characters of the WWID to identify the base (first and second character), unit (third character), and shop (fourth character) in order to leave the remaining five characters available for tool/CTK/equipment numbering.

10.5.1.1.1. The first two letters of the WWID in the EID are based on the wing's/unit's personnel assignment system (PAS) base code. Multiple wings (or equivalent) at the same base (i.e., ANG, AFRC, and active duty) must have different WWID codes. When needed, request additional "base" codes from HQ SSG/ILM, Gunter Annex, Maxwell AFB, AL.

10.5.1.1.2. The third and fourth characters designate the unit or shop by using unique/distinguishable characters. To ensure tool rooms have unique identifiers, wings (or equivalent) must ensure other units within the same wing or PAS code do not duplicate the first 4 characters of the EID.

10.5.1.2. The unit establishes the remaining five characters (any combination of numbers/letters) for CTKs, tools, and dispatchable equipment identification.

10.5.1.3. Units must place the 9-digit EID on all CTKs, tools not assigned to a box, and dispatchable equipment that is of sufficient size. The 9-digit EID must be placed on the outside of dispatchable CTKs. **Tools located inside the tool box may be marked with less than 9-digits but must contain the 4-digit WWID and identifying character(s) that ties the tool back to the CTK.** For example, tools inside an assigned dispatchable CTK "U6JG00001" may be marked "U6JG1." ***NOTE:*** Dispatchable equipment is defined as items that can be checked out from a support section/tool room/work center to perform on-/off-equipment maintenance within or outside the work center. Units may affix non-metallic bar code labels on tools to prevent re-etching as long as the use of the tool and its work environment does not normally result in excessive damage to the label making it unreadable. Tools will be marked with the most current EID. All previous CTK identifiers will either be removed or marked out (this does not include PMEL markings.

10.5.1.3.1. Small tools or items that cannot be marked as described above (such as drill bits, allen wrench sets, apexes, etc.) are to be maintained in a container marked with the WWID and an identifying character(s) that ties the tool back to the CTK along with the number of tools contained. The container is counted as one of the items.

10.5.1.4. MXG/CCs may require use of the EID and AFTO Form 65 (metallic)/AFTO Form 66 (non-metallic) for TMDE routinely (i.e., once per week) dispatched from a workcenter or use of the AFTO Form 65/67 alone. For items that physically or mechanically check tolerances that require calibration, do not etch, or stamp in any manner that will affect calibration or the ability to calibrate. If marking is in question, the owning workcenter shall consult PMEL.

10.5.1.4. **(ANG)** For equipment dispatched to the flightline or anywhere a dislodged label could be ingested into an aircraft engine utilize the AFTO Form 66 (non-metallic) IAW TO 00-20-14.

10.5.2. Permanently mark (by etching or other means) grease guns, dispensing cans, spray bottles, pump oilers, and similar containers with the type of grease, fluid, or other liquids and military specification (MILSPEC) of the contents. If no MILSPEC exists, mark the item with the manufacturer's name, part number/NSN from the applicable MSDS. Keep hoses and fittings separate for each type of grease. ***NOTE:*** If containers are used to hold or apply substances classified as hazardous materials, ensure labeling requirements of AFI 90-821 and local directives are accomplished.

10.5.3. Fiberglass handled hammers are etched on the metal head only (not on handle) in a non-impact area.

10.5.4. CTKs, tools, and dispatchable equipment that may possess a unique serial/tracking number must be marked with an EID number. If the item cannot be marked, etched, or stamped, annotate the additional designator on the CTK contents list. TMDE will be marked with an EID and/or AFTO Form 65 bar code number for tracking purposes in TAS.

10.5.4. **(ANG)** Use AFTO Form 66 (non-metallic) in lieu of AFTO Form 65.

10.5.5. Items that are assembled and are not intended to be disassembled during use, require only one mark/etch/stamp and one entry in the MIL (e.g., scribes, flashlights, grease guns).

10.5.6. Remove the EID from unserviceable tools and tools removed from the CTK, and update the MIL accordingly with the exception of warranty tools where removal of EID would void the tool warranty. Procedures to tag/segregate unserviceable warranty tools will be addressed IAW **para 10.2.1.3.**.

10.6. Locally Manufactured, Developed, or Modified Tools and Equipment. All locally manufactured, developed, or modified tools and equipment must be approved by the MXG/CC or their designated representative. This procedure does not apply to local manufacture, modification or design of tools authorized in specific technical data. QA coordinates on all requests for approval and use of locally designed tools or equipment. Users will review items and requirements biennially (every two years) for applicability and current configuration. See **Chapter 8** of this instruction for additional guidance. ***NOTE:*** Weapons loading, maintenance and armament systems flight locally designed equipment must be coordinated through the WWM.

10.7. Tool Room Operations and Security. Limit tool issue sections to no more than one per work center. Establish procedures to ensure custodial control. Set up tool rooms to ensure accountability. Process reports for tools that are lost, damaged, or destroyed, due to neglect IAW AFMAN 23-220, *Reports of Survey For Air Force Property*.

10.7. (ANG) Tool rooms are normally not established in the ANG, however pararaghs **10.7.1.1.** through **10.7.1.4.** still apply.

10.7.1. The tool room must be capable of being locked and afford protective measures such as monitoring, 24-hour coverage, or controlled key access. When all CTKs are not capable of being secured in the tool room, the section NCOIC will design a process to prevent the unauthorized use or access to tools and equipment. Due to space and facility limitations, it may not be possible to store oversized tool kits in the tool room.

10.7.1.1. Tool kit locks will be used to provide a physical barrier to opening the container lid, drawer or door and prevent the unauthorized removal of tools. Locks are not required on tools and equipment that are stored within secured tool rooms or work centers.

10.7.1.1. **(ANG)** Combination locks are not authorized.

10.7.1.2. Dispatchable tools, equipment, and CTKs are locked and/or secured when left unattended. Tools and equipment are never secured to the exterior of an aircraft. Unattended tool kits located within the controlled area are required to be locked, but do not need to be secured to another object.

10.7.1.2.1. ANG only: CTKs in a "Protection Level-2 Area" directly supporting alert aircraft and located in the aircraft bays/shelters do not have to be locked when unattended as long as they are inventoried at the beginning of each shift, after each maintenance task, and at the end of each shift. If the CTKs are moved outside of the bay in support of the alert aircraft recovery, but remain in the PL-2/PL-3 Area, they do not have to be locked when unattended. Other CTKs in the PL-2/PL-3 Area and not in direct support of the aircraft must be locked when unattended.

10.7.1.3. Modifications to tool containers are authorized unless modification voids the manufacturer's warranty.

10.7.1.4. Tools will not be issued individually from dispatchable CTKs.

10.8. Lost Item/Tool Procedures.

10.8.1. Supervisors ensure all assigned personnel are familiar with lost tool procedures. If an item/tool or a portion of a broken tool is discovered missing, the following procedures apply:

10.8.1.1. The person identifying the missing item/tool will search the immediate work area for the item/tool. If not found, after completing an initial search the individual will notify the expediter/production supervisor or equivalent.

10.8.1.1. **(ANG)** When a tool/item is discovered missing after an aircraft has taxied, maintenance supervision shall notify the MOC who in turn notifies the Supervisor of Flying (SOF) who recalls the aircraft, if necessary.

10.8.1.2. Place a Red X in the aircraft or equipment forms of all affected aircraft or equipment with a description of the tool and a specific, last known, location of the tool.

10.8.1.3. Expediter/production supervisor or equivalent will immediately notify the FLT CC/Chief, support section, MOC, and QA.

10.8.1.4. Initiate a thorough search for the tool.

10.8.1.5. After a thorough search is completed and the tool is not found, the person issued the item/tool will initiate a lost tool report.

10.8.1.6. If at any time during the investigation the item/tool is found and retrieved, notify the FLT CC/Chief, support section, MOC, QA, expediter, production supervisor or equivalent, and the owning work center.

10.8.1.7. If not found, the MOC will notify the MXG/CC of the missing item/tool.

10.8.1.8. If the item is not located, Operations Officer/MX SUPT shall determine when the search may be discontinued.

10.8.1.8. **(ANG)** In coordination with QA.

10.8.1.8.1. Limit authorization to clear Red X's when a tool/item cannot be located to no lower than Operations Officer/MX SUPT.

10.8.1.9. When it is suspected that the item/tool has fallen into an inaccessible or unobservable aircraft area, perform a NDI or use borescope equipment to locate the lost tool.

10.8.1.9.1. If the item/tool is in an inaccessible area that poses no FOD threat and the action is to leave the item/tool in place, the x-ray (or equivalent) with the identification of the exact tool location and copies of all information concerning the lost tool are maintained in the aircraft historical file until the item/tool is recovered.

10.8.1.10. If at any time during the investigation the item/tool is found, but is inaccessible, notify the FLT CC/Chief, support section, MOC, QA, expediter, production supervisor or equivalent, and the owning work center.

10.8.1.10.1. Operations Officer/MX SUPT may explore other possible actions to include having the unit or a DFT disassemble the aircraft to remove the item/tool.

10.8.1.10.2. If the aircraft MDS is one that has a PDM or is scheduled for depot modification, the lost item/tool and location is listed in the AFTO IMT 345, **Aerospace Vehicle Transfer Inspection Checklist and Certification**, for removal by the depot.

10.8.2. **(Added-ANG)** Tool Replacement Procedures**.** A stock of spare tools is authorized. These tools are used to replace broken, worn, or missing tools to prevent unnecessary work delays. Spare and consumable tools are high pilferage items, and pose a significant potential for fraud, waste, and abuse. CTK custodians authorize the tools and quantities maintained. Inventory replacement tool stocks quarterly. Use a general-purpose form/or computer program (such as AF IMT 3131, *General Purpose*) to annotate log entries when a tool/ item is added or removed from the inventory stock. During the quarterly inventory, the CTK custodian shall validate the quantity of tools/items within each bin. To aid in accountability, control, and inventory, each tool/item shall be separated by use of individual bins or dividers, and sequentially numbered accordingly. Access to spare tools must be limited to the shift supervisor (or equivalent) and CTK custodian.

10.8.2.1. **(Added-ANG)** Do not issue replacement tools without a turn-in of the unserviceable tool or documentation indicating the tool is lost and reported accordingly through lost tool procedures. Mark replacement tools with the CTK number prior to issue. If previously issued serviceable tools are to be used as replacement tools, completely de-etch any prior CTK assigned markings.

Section 10B—ALC/AMARC ONLY

10.9. Guidelines for Program Management.

10.9.1. The Maintenance Wing CC or equivalent functional authority for maintenance will develop a wing operating instruction to implement the program. As a minimum, wing operating instructions will address the following:

10.9.1.1. Standardize procedures for security, control, and accountability (e.g., chits, manual, barcode) of tools and equipment.

10.9.1.2. Procedures for inventory. As a minimum, conduct and document an annual inventory of all tools and equipment.

10.9.1.3. Procedures for warranted tool management.

10.9.1.4. Procedures for control and management of replacement, expendable and consumable hand tools, HAZMATs, and other items contained in Tool Kits (TKs).

10.9.1.5. Procedures for lost or missing tools.

10.9.1.6. Assignment of EID for TKs, non-CA/CRL equipment, and assignment of TK numbers for tools.

10.9.1.7. Procedures for issue and control of PPE (e.g., ear protectors, reflective belts, headsets)

10.9.1.8. Procedures to ensure positive control of rags.

10.9.1.8.1. A rag is defined as a remnant of cloth purchased in bulk or a standardized, commerical quality, vendor-supplied shop cloth (uniform size and color) used in general industrial, shop, and flightline operations. Cheesecloth is considered a rag.

10.9.1.9. Procedures to limit numbers of personnel authorized to procure tools.

10.9.1.10. Procedures for control of locally manufactured or developed tools and equipment.

10.9.1.11. Procedures for depot teams, factory representatives, and contract field teams (CFT) when working on equipment within the unit.

10.10. General Program Guidelines.

10.10.1. The first line supervisor will designate and document in writing TK Custodians to manage and control TKs. TK custodians are responsible for tool, HAZMAT, and consumable asset (e.g., assets with ERRC XB3, XD2 and XF3) accountability and control within their respective areas.

10.10.2. First line supervisors and section NCOICs (or their equivalents) determine the type, size, and number of TKs required for their work centers and approve the tool kit custodial receipt listing (TKCRL)/supplemental listing.

10.10.3. Design TKs to provide a quick inventory and accountability of tools. Develop a simple inventory method, a "show" (e.g., a shadow of the tool) and "know" (knowledge of tool or kit location) concept. Clearly mark all TKs and tools with the owning organization. Develop local procedures to determine which tools are checked out and who has them. Inspect all tools periodically for serviceability according to TO 32-1-101*, Maintenance & Care of Hand Tools*.

10.10.4. A TKCRL/supplemental listing is developed for each type of TKs or equipment kit. A copy of the TKCRL/supplemental listing will be kept in the tool and equipment storage facility at all times for inventory purposes. The TK custodian has the authority to interchange "like" items.

10.10.5. Contents are identified by drawer/section indicating the total number and type of items in each drawer/section of the TK.

10.10.6. A TKCRL is required for each tool kit or series of identical kits and filed by the TK custodian in the TKCRL file (may be automated.) The TKCRL remains valid until contents change (MILs do not require replacement solely to update signature.)

10.10.7. Document removed/broken TK items.

10.10.8. Arrange TK contents for ease of inventory. TK contents will be standardized to the maximum extent possible within functional elements of a group or squadron that have similar missions.

10.10.9. Each tool, item of equipment, or consumable contained in a TK has an assigned location identified either by inlay cuts in the shape of the item, shadowed layout, label, or silhouette. No more than one item is stored in a cutout, shadow, or silhouette except for tools issued in sets such as drill bits, allen wrenches, apexes, or paired items (e.g., gloves, booties.)

10.10.10. Consumables may be placed in TKs. If so, they are identified on the TKCRL/supplemental listing as consumables. Examples of consumables include, safety wire, adhesive, wire bundle lacing, solder, etc. Do not include common hardware items such as bolts, nuts, and (or) screws unless they are required as tools.

10.10.11. Equipment and accessories that do not present a FOD potential and are not dispatched from a PSC, work center, support section, or tool room, need not be included in a TK; however, this equipment must have designated storage locations established.

10.10.12. Establish designated locations for test equipment and common accessories (e.g., waveguides, attenuators, fittings, cables, adapters,) that are not part of a TK. Designated locations may be work areas or stations. (e.g., TMDE, avionics flights, propulsion flight)

10.10.13. Industrial shop machinery accessories/attachments (e.g., blades, arbors, chucks, gears) need not be controlled as tools, however, these items will be maintained in designated storage locations for accountability. As a minimum, storage cabinets/drawers will be labeled to identify the contents.

10.10.14. Tools/expendable items used for titanium engine blade blending will be kept in a special purpose kit separate from other tools. In addition to normal TK identification these kits will be marked "Controlled Items" "For Titanium Engine Blade Blending Only."

10.10.15. Personal tools not controlled through TK procedures are NOT authorized on the flightline, or in any maintenance area. (e.g., mini-mag flashlights, leathermans, buck knives) Mark and control tools or equipment that a work center assigns to an individual IAW this instruction.

10.10.16. Flashlights, lanterns, portable lighting devices and light sources will conform to the requirements of TO 1-1-3 and AFMAN 91-201. ***NOTE:*** Aircraft and equipment TOs may dictate additional restrictions.

10.10.17. For deployment purposes ensure equipment, tools, and HAZMAT items are properly identified, prepared, and documented IAW AFI 10-403.

10.11. Marking and Tool Identification.

10.11.1. Tools, common accessories, support equipment and CA/CRL equipment issued individually or part of a tool kit will be marked prior to issue with the center code (see **Table 10.1.**) and a number identifying it to the proper tool issue center, PSC or back shop. Small tools or items that cannot be marked as described above (such as drill bits, allen wrench sets, apexes, etc.) are to be maintained in a container marked with the TK ID number and an identifying character(s) that ties the tool back to the TK along with the number of tools contained. The container is counted as one of the items.

Table 10.1. ALC/AMARC ID number marking Codes

CODE	ALC/AMARC
AM	AMARC
HL	OO-ALC, Hill AFB (previous "HB", "HD", "HK" & "HN" marked items will be authorized for one year from publication date)
OC	OC-ALC, Tinker AFB
WR	WR-ALC, Robins AFB (previous "X" marked item will be authorized for one year from publication date)

10.11.1.1. Do not create a new EID for TMDE assets. Utilize the existing bar code number on the AFTO Form 65 (metallic) or AFTO Form 66 (non-metallic) attached by PMEL.

10.11.2. Mark hand grease guns, dispensing cans, spray bottles, pump oilers, and similar containers with the type of grease, fluid, or other liquids and military specification (MILSPEC) of the contents. If no MILSPEC exists, the manufacturer's name, part number/NSN will be used. Keep hoses and fittings separate for each type of grease. ***NOTE:*** If containers are used to hold or apply substances classified as hazardous materials, ensure labeling requirements of AFI 90-821 and local directives are accomplished.

10.11.3. Fiberglass handled hammers are etched on the metal head only (not on handle) in a non-impact area.

10.11.4. TKs, tools, and dispatchable equipment (excluding TMDE) that may possess a unique serial/tracking number must be marked with an EID number. If the item cannot be marked, etched, or stamped, annotate the additional designator on the TK contents list.

10.11.5. Items that are assembled and are not intended to be disassembled during use, require only one mark/etch/stamp and one entry in the TKCRL/supplemental listing (e.g., scribes, flashlights, grease guns).

10.11.6. Remove the EID from unserviceable tools and tools removed from the TK, and update the TKCRL/supplemental listing accordingly.

10.12. Tool Accountability, Control, and Inventory. First level supervisors and section chiefs, through TK custodians, are responsible for tool and equipment accountability and control (knowing where tools are and who has responsibility for them.) When a person signs for a tool or piece of equipment, they are accountable for the item until it is returned to the tool room and accountability transfers back to the TK custodian (through a representative or tool room employee.)

10.12.1. Air Logistics Centers must continue to implement the Facilities and Equipment Maintenance System (FEMS) tool module as the depot standard.

10.12.1.1. Units will use FEMS to:

10.12.1.1.1. Track, issue, and receipt for all assigned tools, equipment, tool kits, HAZMAT items, TOs.

10.12.1.1.2. Track authorizations/restrictions for special tools/equipment (by individual.)

10.12.1.1.3. Track inspections required by this instruction.

10.12.1.1.4. Track spare, lost, and damaged (removed) tools.

10.12.1.1.5. Develop and manage tool/equipment inventories.

10.12.1.1.6. Develop and manage deployment kits (import/export).

10.12.1.2. If an automated system is not available (such as at a deployed location), units may use a chit system, AF IMT 1297 or, a MAJCOM or locally approved form for accountability and control of TKs, equipment, and tools. When using a chit system, chits are controlled as tools to include a beginning and end of shift inventory. Do not issue chits directly to individuals or remove them from tool rooms. Chit control boards are located in secure locations.

10.12.2. Account for all TKs, tools, and dispatchable equipment at the beginning and end of each shift. Document shift inventories. TKs present during PSC/tool room shift inventories do not need to be opened for inventory.

10.12.2.1. Perform a visual inventory of all TKs when issued for use, at the completion of job or tasks, and when returned to the tool storage facility. Accomplish a TK inventory prior to operation of any aircraft or equipment when maintenance actions were performed (engine run, landing gear retraction, flight control operational checks, etc.)

10.12.2.2. At least annually or when the TK custodian changes, conduct a comprehensive inventory of all tools, non-CA/CRL equipment, and TK. The purpose of this inventory is to perform an extensive inspection of all tools and non-CA/CRL equipment, to include condition, identification markings, and accuracy of the TKCRL/supplemental listing. Inspect all tools for serviceability according to TO 32-1-101. CTK custodians document these inventories and maintain the most current inventory documentation on file.

10.13. Locally Manufactured or Developed Tools and Equipment. The local supplement must address procedures for approval and control of locally designed tools or equipment that carry loads, change torque or presents potential to damage government resources. The Planning/Engineering Office will have approval authority for locally manufactured, modified, developed or special end item unique tools and equipment not published in technical data. Requests for approval of locally manufactured or developed/modified tools must include a description of the item and its intended use, a list of materials required, cost, and procedures for manufacturing the tool. If possible, include an example, photo or drawing. The Engineering office will keep copies of drawings, photos and documentation of all approved local manufactured or developed/modified tools and equipment. The approvals will be reviewed every 2 years and the review will be annotated. ***NOTE:*** This procedure does not apply to local manufacture, modification or design of tools authorized in specific technical data.

10.14. Tool Room Operations and Security

10.14.1. Limit tool issue sections to no more than one per work center. Establish procedures to ensure custodial control. Set up tool rooms to ensure positive accountability. Process tools that are lost, damaged, or destroyed, due to neglect according to AFMAN 23-220, *Reports of Survey For Air Force Property*.

10.14.2. The tool issue center/PSC must be capable of being locked and afford protective measures such as monitoring, 24-hour coverage, or controlled key access. The tool issue center/PSC supervisor authorizes access to tool rooms. When all TKs are not capable of being secured in the tool issue center/PSC, the tool issue center/PSC supervisor will design a process to prevent the unauthorized use or

access to tools and equipment. Due to space and facility limitations, it may not be possible to store oversized tool kits in the tool issue center/PSC.

10.14.2.1. Tool kit locks will be used to provide a physical barrier to opening the container lid or door and prevent the unauthorized removal of tools. Locks are not required on tools and equipment that are stored within secured tool rooms or work centers.

10.14.2.2. Dispatchable tools, equipment, and TKs are locked and/or secured when left unattended. Tools and equipment are never secured to the exterior of an aircraft. Unattended tool kits located within the controlled area are required to be locked but do not need to be secured to another object.

10.14.2.3. Tool issue centers/PSCs will not issue tools individually from dispatchable TKs. When a recurring need exists for common tools to be issued individually, e.g., hammers, screwdrivers, pliers, drills, wrenches to perform routine, housekeeping or facility tasks within the work center, add the tools to a TK.

10.15. Lost Item/Tool Procedures

10.15.1. Supervisors ensure all assigned personnel are familiar with lost tool procedures. If an item/tool or a portion of a broken tool is discovered missing, the following procedures apply:

10.15.1.1. The person identifying the missing item/tool will search the immediate work area for the item/tool. If not found, after completing an initial search the individual will notify the first line supervisor or equivalent.

10.15.1.2. Place a Red X in the aircraft or equipment forms of all affected aircraft with a description of the tool and a specific, last known, location of the tool.

10.15.1.2.1. Aircraft/Equipment thought to contain a lost tool/item during the program depot maintenance process will be documented by initiating a Work Control Document and transferred to the aircraft forms as a Red X discrepancy at the point when the AFTO Form/IMT 781 or equipment forms are re-initiated.

10.15.1.3. First line supervisor or equivalent will immediately notify the squadron commander, PSC supervisor (if applicable), center tool manager, Maintenance Control and QA.

10.15.1.4. Initiate a thorough search for the tool.

10.15.1.5. After a thorough search is completed and the tool is not found, the person issued the item/tool will initiate a lost tool report.

10.15.1.6. If at any time during the investigation the item/tool is found and retrieved, notify the maintenance squadron commander, PSC supervisor (if applicable), center tool manager, Maintenance Control QA, first line supervisor, or equivalent, and the owning work center.

10.15.1.7. If not found, the Maintenance Control will notify the Maintenance Wing CC of the missing item/tool.

10.15.1.8. If the item is not located, the maintenance squadron commander shall determine when the search may be discontinued.

10.15.1.8.1. Limit authorization to clear red-X's when a tool cannot be located to no lower than maintenance squadron commander or deputy.

10.15.1.9. When it is suspected that the item/tool has fallen into an inaccessible or unobservable aircraft area, perform a non-destructive inspection (NDI) or use borescope equipment to locate the lost tool.

10.15.1.9.1. If the item/tool is in an inaccessible area that poses no FOD threat and the action is to leave the item/tool in place, the x-ray (or equivalent) with the identification of the exact tool location and copies of all information concerning the lost tool are maintained in the aircraft historical file until the item/tool is recovered.

10.15.1.10. If at any time during the investigation the item/tool is found but is inaccessible, notify the maintenance squadron commander, Maintenance Control, center tool manager, QA, first line supervisors or equivalent, and the owning work center. Maintenance squadron commander may explore other possible actions to include having the unit disassemble the aircraft to remove the item/tool.

Chapter 11

MAINTENANCE SUPPLY SUPPORT

11.1. General. This chapter describes the general responsibilities and requirements of decentralized supply support personnel, Maintenance Suppply Liasion (MSL) and work center supply management personnel. MAJCOMs will identify specific responsibilities and outline unique decentralized supply support operations in MAJCOM instructions when necessary. AF Program Action Directive (PAD) 02-05 makes the establishment of MSLs a MAJCOM option. AFMAN 23-110, provides supply policy and procedures. Decentralized supply support personnel and MSL will follow the guidance outlined in AFMAN 23-110. ***NOTE***: A major Air Force program is underway to migrate current Regional Supply Squadron (RSS) capabilities that have a MAJCOM perspective, into consolidated CAF and MAF Logistics Support Centers (LSCs) with a fleetwide perspective. It is sufficient for the purpose of this AFI to consider references to either RSS or LSC to be the same.

11.1. (ANG) Customer ServiceSection The 162 FW, LM Aero and UAE shall determine in local procedures UAE F-16 block 60 supply support. The 178 FW in conjunction with the RNAF maintenance liaison office shall develop local procedures RNAF aircraft supply support.

11.2. Maintenance Supply Liasion (MSL) Section. The MSL monitors the overall maintenance and supply interface, resolves supply support problems, review reports and coordinates supply related training needs for decentralized supply support personnel. MSL personnel are authorized on the LRS UMD and report to the LRS/CC. MXG CC with the LRS/CC may decentralize the MSL capability to physically reside with MXG. The LRS/CC through the MSL, is the liaison between maintenance units and the LSC. If MAJCOMs do not establish the MSL function, the LRS, Management Systems Flight, Customer Service Section, will accomplish MSL duties.

11.2.1. MSL advises decentralized supply support personnel and maintenance leaders of supply support problems regarding the maintenance efforts and recommends corrective actions. In addition the MSL will:

11.2.1.1. Periodically visit all maintenance work centers. Identify and recommend corrective actions on procedural or compliance problems associated with supply support and provide assistance in their resolution. Document periodic visits including any findings. Monitor open findings to ensure timely resolution. Retain closed findings for at least 1 year (based on closure date) for historical/continunity purposes.

11.2.1.2. Identify supply related training needs to maintenance work center supervisors.

11.2.1.3. Provide guidance to work center supervisors on utilization of supply management products, shelf-life management, warranty parts management IAW AFMAN 64-110, repair cycle management, and DIFM management.

11.2.1.4. Provide guidance for maintaining bench, operating, and shop stocks and assist users in resolving any related problems.

11.2.1.5. Provide guidance to maintenance work centers on identifying direct NRTS items for inclusion in the master direct NRTS list. Review the list at least semiannually.

11.2.1.6. Coordinate with maintenance work centers to identify components for which there is no base level repair or diagnostic capability.

11.2.1.6.1. Compile a listing of these items and ensure organization section code "009DN" is loaded as the repair section on the repair cycle record.

11.2.1.6.1.1. Repair section code "009DN" alerts maintenance technicians the component is direct NRTS and is not routed through a repair section.

11.2.1.6.1.2. The last two positions "DN" are base optional, identifying the wing or organization providing the authority for direct NRTS.

11.2.1.7. Assists in preparing and submitting change requests for RSP authorizations. Maintains suspense file of AF Form 1032, **WRM Spare List**. ***NOTE:*** This responsibility is normally performed by MSL when a Logistics Supply Manager is not assigned.

11.2.1.8. Conduct annual supply procedural surveillance visits to all work centers. Brief work center supervisors on results, follow-upon corrective actions and provide a copy of the report to the LRS/Procedures Element.

11.2.1.9. Solicit and consolidate inputs from all squadrons to initiate a QRL as needed. MSL distributes the QRL to appropriate work centers including the aircraft parts store.

11.2.1.10. Monitor status of back-ordered requisitions and maintain liaison with LRS personnel. Initiate supply assistance requests for supply difficulties. Submit follow-up to LRS for requisitions with unacceptable status or unacceptable estimated delivery dates.

11.2.1.11. Coordinate with customers to obtain mission impact statements to substantiate supply assistance requests. Establish a suspense system and follow-up to ensure correspondence is received and acted on.

11.2.1.12. Assist AF GPC holders in administering and coordinating weapons system purchases. The SPD must approve the local purchase of all aircraft parts. Refer to AFI 64-117, *Air Force Government-Wide Purchase Card Program* for additional guidance.

11.2.1.13. Coordinate with maintenance work centers to identify components which have repair capability.

11.2.1.13.1. Ensure the work center is loaded on the SBSS repair cycle record.

11.2.1.13.2. Review and update the Repair Cycle Data List (Q04) at least annually.

11.3. Decentralized supply support. The LRS/CC is responsible for providing supply support to maintenance activities and will decentralize supply personnel and parts to the maximum extent possible. Decentralized supply support personnel are authorized on the MXG UMD and report to maintenance activities. These personnel coordinate maintenance and supply actions, manage supply transactions for their assigned maintenance activity, manage the production of assets in the repair cycle, resolve supply support problems and report aircraft parts status to maintenance supervision. They assist maintenance in processing requisitions, researching sources of supply, completing DD Form 1348-6, **DoD Single Line Item Requisition System Document**, entering manual requisitions (part number only), updating exception code lists, and other peculiar maintenance supply problems.

11.3.1. Supply Discipline. Supply discipline is the responsibility of all military and civilian employees regardless of grade or position. Supervisors at all levels ensure the practice of good supply discipline. Train all maintenance personnel to perform supply duties related to their job.

11.4. Ordering Parts. Order aircraft parts from supply through MIS/SBSS interface. Monitor supply status on all backordered parts. Request supply assistance if status is unacceptable. Technicians ordering parts:

11.4.1. Provide required data to facilitate the issue request. See AFMAN 23-110.

11.4.2. Complete AF Form 2413 or AF IMT 2005 or locally developed electronic log, and include the supply document number and time ordered, or use printouts of requests made via the supply interface in lieu of AF Form 2413 or AF IMT 2005 or locally developed electronic log.

11.4.3. Order parts for transient aircraft IAW AFMAN 23-110 and TO 00-20-1,. Use demand code "N" (non-recurring) for transient aircraft requests. Use demand code "R" (recurring) if the item is for a base assigned aircraft or for regularly scheduled transient flights.

11.4.3.1. Promptly process repairable items since the repairable item may be the only part available.

11.4.3.2. Assign a valid supply delivery priority to each demand IAW AFMAN 23-110 .

11.4.3.3. Cancel erroneous requests.

11.4.3.3. **(ANG)** Notifies the LRS to cancel those requests that are no longer required. Also notifies the LRS to downgrade UJC as necessary (NMC to delay discrepancy, etc.) to save transportation costs.

11.4.3.4. Use the force activity designators (FAD) code with the UND to set the requisition priority. When supporting a unit with a higher FAD, use the FAD of the supported unit.

11.4.3.5. Ensure proper use of UJCs.

11.4.3.5. **(ANG)** The proper use of the UJC on parts requests, to designate the impact and type of need. The UND is the first position of the UJC and indicates the impact of the request. The use of the following UNDs: “1”, “J”, and “A” are restricted and must be verified by the Pro Super, expediter or as designated by the MXG/CC.

11.4.3.6. Verify and monitor backordered requests to prevent unwarranted mission limiting conditions, CANNs, priority abuses and wasted money.

11.4.3.7. Recycle reusable containers and metals.

11.4.3.8. Turn in excess supply parts and materiel.

11.4.3.9. Process TRN to record usage of an item and ensure proper stockage.

11.4.3.10. Track DIFMs. DIFM inputs are critical to recording and getting credit for proper repair cycle times. DIFM status codes are currently broken down into three categories; delayed maintenance time, repair time, and AWP time. Repair time is the only time recorded and used to determine the number of assets LRS can stock. Not using the proper codes when they change, reduces the number of assets on base. DIFMs should be reduced to as near zero as possible since credit is not given for delayed maintenance or AWP time.

11.4.3.11. Ensure the SPD approves the local purchase of all aircraft parts. Purchase aircraft parts IAW AFI 64-117.

11.5. Processing MICAPs. Process the MICAP start in MASS and ensure all pertinent data is included. Upgrade, downgrade and cancel MICAP requirements as required. (Applies to commands with a RSS).

11.6. Readiness Spares Package (RSP) Review. Maintainers have a critical role in the annual RSP review process. This role includes active maintenance participation in the base level validation process conducted by the LRS and their MAJCOM during the annual RSP pre-review process in preparation for the ALC/SPD final review. Close maintenance-supply collaboration is essential to ensure RSPs are properly sized to support contingency maintenance requirements.

11.7. Bench Stock. Work center supervisors determine the contents of their bench stock. Examples of bench stock items include: nuts, bolts, cotter keys, washers, resistors, capacitors, light bulbs, sealants and batteries. Establish levels to provide up to 30 days usage. Retain excess material but not over 200 percent of the authorized quantity. If quantities exceed 200 percent, workcenter supervisors will evaluate the need for turn-in IAW AFMAN 23-110.

11.7.1. Mark bins containing 50 percent or less of the authorized quantity to facilitate monthly inventories. Do not include items coded TCTO, unacceptable for AF use, critical, classified or sensitive in bench stocks. Refer to AFMAN 23-110 for exception data.

11.7.2. Maintain environmentally sensitive items in their original container. If removed from original container, place items in a sealed package and clearly mark them to prevent misidentification and misuse (e.g., seals, dessicant, filters, circuit cards, sealants).

11.7.3. Remove unidentifiable items, or items whose serviceability is unknown, from bench stock bins and process them as shop scrap through DRMO.

11.7.4. Control and secure any precious metals displayed. Dispose of property containing precious metals IAW AFMAN 23-110.

11.7.5. Set up fixed or mobile bench stocks to provide quick and easy access to bits and pieces needed to support maintenance efforts. Ensure mobile bench stocks do not present a FOD hazard.

11.7.6. Identify and control the issue and turn-in of hazardous materiel/items on bench stock listings. See AFMAN 23-110 for additional guidance on establishing, maintaining, and reviewing bench stocks.

11.8. Consumable Readiness Spares Package (CRSP). The CRSP concept allows MAJCOMs to use RSP details to manage consumable item support for contingency deployments. The CRSP process is designed to consider, as specified by MAJCOMs, existing mobility bench stocks and other available POS safety level assets in determining RSP quantities. The CRSP process provides requirement and asset visibility, has automated transfer and deployment procedures, has the capability to provide the correct priority and project-coded replenishment requisitions, and eliminates redundant requirements. Refer to AFMAN 23-110 for detailed CRSP procedures and options. The CRSP procedures provide MAJCOMs with a standard process to support consumable item wartime requirement.

11.9. Shop Stock. Includes gas cylinders, random length bar stock, sheet metal, plastic, fabric, electrical wire, and similar items not normally included in bench stocks. Maintain shop stock for day-to-day operations. Monitor shop stock to prevent materials from becoming excessive or outdated. Shop stock should not normally exceed 90 days usage, or the unit of issue or unit pack, whichever is greater. Store shop stock

near/adjacent to bench stock items, if practical, but do not mix them together. Clearly identify materials as "Shop Stock" and label them with noun, national stock number or part number, unit of issue, and shelf-life, if applicable.

11.10. Operating Stock. Includes connector dust covers, hydraulic line caps/plugs, and similar items that are normally recovered after use and re-used. Store operating stock near/adjacent to bench stock items, if practical, but do not mix them together. Monitor operating stock to prevent it from becoming excessive or outdated. Retain partially used bench stock items in bench stock and not in operating stock. Identify, tag, and turn in items with no forecasted use IAW AFMAN 23-110. Clearly identify items as "Operating Stock" and label them with noun, national stock number or part number (if applicable), unit of issue, and shelf-life, if applicable.

11.11. Work Order Residue. Includes expendable bit/piece items left over from maintenance work orders or bench stock deletions. Store work order residue near/adjacent to bench stock items, if practical, but do not mix them together. Ensure excesses are consolidated for turn-in to LRS at least annually. Clearly identify items as "Work Order Residue" and label them with noun, national stock number or part number, unit of issue, and shelf-life, if applicable. Control all work order residues used on or around aircraft, uninstalled engines, and AGE.

11.12. Adjusted Stock Levels. Adjusted levels are used when the demand level or consumption is inadequate to support the requirement. A single occurrence of a mission limiting status is not sufficient reason to establish an adjusted stock level. It may indicate a need to review demand data for accuracy. Use AF IMT 1996, **Adjusted Stock Level**, to request adjusted supply levels for support of special projects, special operating requirements, or if existing demand data is insufficient to support mission requirements. Work centers, with assistance from supply personnel, must prepare the AF IMT 1996 and route it through Operations Officer/MX SUPT for review prior to sending to LRS customer service/stock control. See AFMAN 23-110 for criteria and procedures to submit these requests. Prior to submitting to LRS, ensure the AF IMT 1996 contains adequate justification and is approved by the MXG/CC. Examples of adequate justification include: seasonal materiel requirements, long lead-time items, unserviceable components forcing a "no fly" or NMC condition for extended periods of time and fleet-wide versus single aircraft impacts. Work centers must maintain a master file of adjusted stock levels and must follow-up on requests. Supply personnel and the appropriate work center must accomplish a validation of adjusted stock levels according to AFMAN 23-110.

11.13. Shelf life Items. Work centers control shelf life items in bench stock and operating/shop stock IAW AFMAN 23-110. LRS identifies shelf life items by use of shelf life codes; units will identify shelf life in bench, shop, and operating stocks by using colored/highlighted bin labels. This label contains the item's shelf life code. Mark operating/shop stock labels with the shelf-life codes and source (e.g., TO number). Contact the LRS supply inspector to determine if shelf life conflicts exist between the various sources. Check expiration dates on issued items and do not accept outdated items from supply. Do not open shelf life containers until needed and use the oldest items first. Shelf life materials stored in other than original containers must be marked with original shelf-life expiration codes. Recycle, reclaim, or turn-in for disposal, shelf life items which are loose in the bin and expiration dates cannot be determined IAW Type I shelf life criteria IAW AFMAN 23-110. Inspect Type II shelf life items IAW AFMAN 23-110.

11.14. Equipment Items. Continually review equipment items needed for mission accomplishment. LRS personnel assist equipment custodians in researching and preparing documents for gaining authorizations and ordering equipment items. Equipment custodians request equipment, tools and bench mock-ups, using AF IMT 601, **Equipment Action Request**, or AF IMT 2005, **Issue Turn-In Request**. LRS provides equipment custodians a CA/CRL listing all authorized and in-use equipment for each account. Check the appropriate AS for authorizations, and verify that the correct SRDs are loaded. See AFMAN 23-110 for procedures on appointing equipment custodians, setting up the proper accounts, ordering, and maintaining equipment items. Organizational equipment custodians must work through LRS to obtain a loan agreement from the Command Equipment Management Office prior to loaning organizational equipment to another installation IAW AFMAN 23-110. Accountable equipment custodians must notify LRS Equipment Liaison Office of deploying or scheduled to deploy equipment IAW AFMAN 23-110. Ensure compliance with capitalized equipment procedures IAW AFMAN 23-110.

11.15. Special Purpose Recoverable Authorized Maintenance (SPRAM). SPRAM assets are fault isolation spares, shop standard spares, training spares, Dash 21 TO spares (AME), test station spares, and stand alone spares. These assets are Expendability, Recoverability, Repairability Code (ERRC) XD/XF items, which are controlled and managed as in-use supplies. Review R25 SPRAM listing annualy. A SPRAM monitor and custodian are appointed to manage these assets. The program was developed to provide AF maintenance leaders an automated system to maintain visibility and accountability for recoverable spares being used for other than their primary mission and that are not being reported through any other system. (Ref: AFMAN 23-110 and AFI 21-103).

11.16. Supply Assets Requiring Functional Check, Calibration, or Operational Flight Programming. Maintenance sections must identify items requiring functional checks, calibration, or operational flight programming prior to use by preparing a list of items, (including the repair section's organization and section code) and sending the list through the Flight/CC or flight/section NCOIC or AMU OIC/SUPT (if applicable) and Operations Officer/MX SUPT to the LRS chief inspector. This list shall be updated/validated IAW AFMAN 23-110. Supply issues the items using procedures in AFMAN 23-110 to repair sections when functional checks, calibration, or programming is due or when serviceability is doubtful. If a part issues requiring a functional check, ensure it is not restricted in the weapon system Dash 6 TO. Do not use an aircraft as a test bed for parts. Refer to TO 00-20-3 for functional check and frequency requirements.

11.16. (ANG) Identify any additions, deletions, or changes of SPRAM assets to the equipment management section of LRS.

11.17. Time Compliance Technical Order (TCTO) Kit Procedures. TCTO kit management is a joint maintenance and supply responsibility IAW TO 00-5-15 and AFMAN 23-110. TCTO managing agencies initiate requests for kits, parts and tool requirements (See **Chapter 7** of this instruction for additional information). Transfer TCTO kits with aircraft or equipment. Retain TCTO kits for aircraft returning to the unit for TCTO compliance. AFMAN 23-110, TO 00-5-15, and TO 00-5-1 contain detailed guidance for the transfer of TCTO kits.

11.18. Supply Points. Establish supply points within individual work centers when time or resources required to move items dictate a need. Storage space for the supply points is provided by the supported work center. Determine management of the supply point by agreement between the group commanders. Supply points must be reconciled semi-annualy by the work center supply point monitor and the results of

the reconciliation are provided to the LRS Supply Point Manager. Supply points are inventoried annually IAW AFMAN 23-110, Vol 2 Part 2, Chatper 24. Establishment of an aircraft parts store and/or FSC within the maintenance complex reduces the dependence on supply points and or bench stocks. LRS maintains warehouses in both these facilities, stocking assets closer to the point of use. Expenditure of funds and manpower may be reduced by use of these facilities.

11.19. Local Manufacture. Units publish directives outlining procedures covering the manufacture of items source coded local manufacture. Include procedures that prevent abuses, specify coordination requirements (e.g., QA) and approval authority. Local manufacturing is an essential part of unit maintenance support. The applicable end-item TO identifies items subject to local manufacture. Specific procedures are in AFMAN 23-110. When developing directives:

11.19.1. Identify the approval authority for local manufacture requests.

11.19.2. Requesters use an AF IMT 2005 for supply item local requests. Use an AF IMT 601 for equipment requests. Provide a drawing, sample, technical data and DD Form 1348-6, as required. Obtain drawings from the base EDSC or Joint Engineering Data Management Information and Control System (JEDMICS). Use the AF engineering data program governed by AFI 21-401.

11.19.3. Requesters coordinate with the appropriate fabricating section to determine the bits and pieces required to manufacture the item. The supply local manufacturer manager assists in verifying parts availability.

11.19.4. Requesters identify all sections that have action on the AFTO Form 350 for items requiring multiple section processing.

11.20. Production Scheduling. The repair section NCOICs establish a production schedule based on priorities. LRS provides the repair cycle asset management listing (D23) to assist each repair section in this effort. The D23 is provided in both maintenance location and stock number sequence. Repair sections use the D23 to manage the flow of unserviceable DIFM assets in the repair cycle and to ensure the DIFM status and location is updated.

11.21. Control of AWP Assets and Cross-CANN. Closely control reparable assets in AWP status. Do not consolidate storage areas for AWM and AWP assets. Group commanders negotiate storage of out-sized units. Provide the supply AWP manager the DIFM document number of the AWP end item and the due-out document numbers of bits and pieces to adjust supply data base records for cross-CANN actions. Supply requisitions, initiates lateral support, and monitors the status of repair bits and pieces. Repair section asset managers identify unacceptable supply status impacts to the RSS AWP manager. Supply requests disposition for assets with unavailable repair parts. Only dispose of parts on receipt of disposition authority.

11.22. Repair Cycle Assets. DSS personnel will monitor and control progress and status of repair cycle assets. Process repair cycle assets IAW TO 00-20-3. Units establish local procedures for the control of repair cycle assets throughout the maintenance cycle. Include methods of accounting for all components and accessories, procedures for control of assets in AWP or AWM status, and procedures and responsibilities for cross CANN, removal of bits and pieces, and scheduling and control of repair cycle assets. Promptly process, repair, and return repairable components to the repair cycle support element. Repair assets to the fullest extent authorized within unit capabilities.

11.22.1. Economic Order Quantity (EOQ)/XB3 Turn-In. Place EOQ/XB3 pick-up point containers in or near each maintenance work center to encourage turn-in of unneeded items. Make the containers easily accessible and visible. Work center supervisors periodically inspect containers for unauthorized items. AFMAN 23-110 contains detailed procedures.

11.22.2. The requisitioning and control of TCTO kits is a supply process managed within the LRS Repair Cycle Support Element.

11.23. DIFM. Repair sections use the D23 to manage the flow of unserviceable DIFM assets in the repair cycle and to update DIFM status and location of unserviceable assets. If a parts request is backordered and the unserviceable DIFM item does not limit or restrict the operational capability of the end item, remove it and send it to the applicable support section for either repair, NRTS approval, or condemnation with a subsequent turn-in to LRS (as a credit DIFM) IAW TO 00-20-3. The D23 will not be used to manage serviceable assets.

11.24. Tail Number Bins (TNB). Establishment and management of TNBs is a maintenance responsibility. TNBs are storage locations established and controlled to store issued parts awaiting installation and parts removed to FOM. TNBs are set up by tail number, serial number, or identification number. Once the part is issued, the aircraft parts store informs the MOC and expediter (for MICAPs) or the AMU PS&D (for backordered items) that the part is in. Do not release parts from the TNB without proper documentation. Return items removed from the TNB that are not installed that duty day. Inform the production supervisor or expediter of TNB assets, which may prevent or satisfy a mission-limiting condition. TNB items used to satisfy MICAP conditions are not CANNs. Reorder these items and notify the expediter of the new document number. Update the aircraft forms and the MIS. If supply creates a due-out prior to transfer of these items, notify decentralized supply support (AMU support section) to change the "mark-for" field on the due-out detail. Seal and store partially completed TCTO kits and parts in the TNB and mark the container or package with the tail number, serial number, or equipment identification number and TCTO number. Maintain security and control of TNB assets. Track property placed in the TNB by tail number, serial number, or equipment identification number. For each entry indicate:

11.24.1. Date received

11.24.2. Noun

11.24.3. Document number

11.24.4. Status (FOM, issue/due-out release (ISU/DOR), TCTO, etc.)

11.24.5. Removal information (date, time, signature, and employee number of the person who picked up the property)

11.24.6. Remarks

11.25. CANN actions. See section 14.8. for CANN procedures and responsibilities.

11.26. Bench Check and Repair Policy. Maintenance sections bench check items as part of the on-equipment troubleshooting process. When workload requires, the section NCOIC determines the priority for bench check actions. Specific procedures for bench check and repair policy are provided in TO 00-20-3. The following general guidelines apply:

11.26.1. Order required parts “fill or kill.” If the part is not in stock and a MICAP condition exists, backorder the new request. Determine local repair capability before requisitioning off-base support or going lateral support.

11.26.2. Remove the suspected item, fill out the AFTO Form 350, and annotate it as repair and return. Attach AFTO Form 350 to the item; place the item in the repair cycle; and annotate the name of the repair section on the form.

11.26.3. Bench-check, repair, take NRTS action, or condemn the item. If the item is repaired or otherwise determined to be serviceable, the repair section informs the support section the item is available for pick-up so on-equipment maintenance action may resume. If the item cannot be repaired, the repair section informs the support section to initiate a backordered request and takes appropriate NRTS and condemnation action on the unserviceable asset.

11.27. Maintenance Turn-Around (TRN) Record Update Processing. Work centers processing TRNs will ensure the AFTO Form 350, Part II, is processed using the supply interface to the MIS. Verify each TRN with the D04. Use TRN procedures for all items repaired and replaced.

11.28. Maintenance Turn-In to Supply. Work centers must properly tag and secure repair cycle assets in their reusable container. The repair shop must comply with environmental control requirements as specified in TOs, and place documentation with the container. Include AFTO Form 350, Parts I and II, and a condition tag or label with all items turned into supply. Enter the correct action taken code on AFTO Form 350, Part II. Accomplish proper reclamation and demilitarization actions on condemned repair cycle assets.

11.29. Buildup Items. Maintain items requiring build-up prior to use (e.g., wheels and tires) in supply points in a built-up configuration. Send items to appropriate work centers for build-up and return them to the supply point for later issue. Use AF IMT 1297, **Temporary Issue Receipt**, or control log to control assets sent for build-up when the supply point is operated by supply. Validate AF IMTs 1297 daily if over 10 days old. Establish local procedures to control assets when maintenance operates the supply point and assets are sent to another organization for build-up.

11.30. Supply Reports and Listings. Use supply reports and listings to manage maintenance requirements. Most are provided automatically or generated after supply transactions. Request others when needed. **Attachment 2** of this instruction lists the most common/important reports and listings.

11.31. Deficiency Report (DR) Exhibits. DR exhibit procedures for issue, turn-in, and storage are contained in TO 00-35D-54 and AFMAN 23-110. They shall be input into the DREAMS system.

11.32. Work Center Supply Management.

11.32.1. Maintain AF Form 2413 or AF IMT 2005, or a locally developed electronic log recording all parts ordered from LRS and verify status with the daily document register (D04), Priority Monitor, Report (D18) and the monthly due-out validation listing (M30) or use printouts of requests made via the supply interface in lieu of an electronic log, AF IMT 2005, or AF Form 2413.

11.32.2. Maintain source document audit trail accountability for all demands on supply. Ensure validity and completeness of supply requisition forms. Verify "UJC" and "SRD" codes.

11.32.3. Maintain MICAP records and initiate follow-up actions on MICAP requisitions.

11.32.4. Follow-up with supply personnel to resolve AWP problems.

11.32.5. Establish procedures for controlling cross-CANN of reparable assets to reduce AWP units.

11.32.6. Process supply items requiring a buildup before issue in a timely manner.

11.32.7. Compile a list of items requiring functional check or calibration prior to installation. Review and update the list IAW AFMAN 23-110.

11.32.8. Manage aircraft systems and equipment under 3LM. Compile a list of direct NRTS items in coordination with maintenance squadron back shops and AFREP representative and provide it to LRS for inclusion in the master direct NRTS listing. Review and update at least semiannually.

11.32.9. Establish a storage area for reusable containers. Consolidation with other work centers is authorized.

11.32.10. Schedule and control all repair cycle assets through the repair flights based on priority assigned.

11.32.11. Move repairable assets from work center to work center in an expedient manner. Ensure the proper documentation and container accompany the asset through the repair cycle

11.33. Maintenance Repair/Supply Delivery Priorities. Use the following to establish maintenance repair priorities. Raising or lowering priorities will not necessarily require a corresponding change in the supply delivery priority. The maintenance repair priority and the supply delivery priority are normally identical. Use a less responsive supply delivery priority when the need time or date for a part does not justify the delivery priority specified. Refer to AFI 24-301.

11.33.1. Priority 1. Supply delivery: Within 30 minutes. Use for primary mission aircraft within 12 hours of a scheduled launch on the following missions:

11.33.1.1. Presidential directed missions supporting US forces in combat and national emergency plans and special weapons movement missions.

11.33.1.2. Aircraft on alert status.

11.33.1.3. Related AGE, munitions, and munitions equipment assigned to these missions.

11.33.2. Priority 2. Supply delivery: Within 30 minutes. Use for:

11.33.2.1. Primary mission aircraft and related AGE, munitions, and munitions equipment for first 8 hours after landing or start of recovery or within 6 hours of a scheduled launch or alert.

11.33.2.2. Simulated generation during ORIs.

11.33.2.3. Primary special weapons movement mission aircraft 48 hours prior to a scheduled launch.

11.33.2.4. Aeromedical evacuation, rescue, and weather mission aircraft and related AGE, munitions and munitions equipment.

11.33.2.5. All transient FAA aircraft.

11.33.2.6. Aircraft and equipment or related AGE requiring repair which is preventing or delaying student or maintenance training.

11.33.3. Priority 3. Used for:

11.33.3.1. Primary mission air vehicles, engines and related AGE, munitions and munitions equipment, undergoing scheduled or unscheduled maintenance.

11.33.3.2. Transient air vehicles not otherwise listed.

11.33.3.3. Administrative aircraft within 8 hours of scheduled flight or on alert status with standby crews.

11.33.3.4. Time change requirements for special weapons.

11.33.3.5. Scheduled and unscheduled maintenance of munitions which if not performed will prevent or delay mission accomplishment.

11.33.3.6. TMDE requiring emergency repair or calibration, the lack of which will prevent or delay mission accomplishment.

11.33.3.7. Spares not available in LRS.

11.33.3.8. Critical end items and spares not available in LRS.

11.33.3.8. **(ANG)** Or supply designated "priority repair" spares.

11.33.3.9. Routine maintenance of aircrew or missile training simulator, or other training devices or related AGE or sites and aircraft or equipment used for maintenance training.

11.33.3.10. Avionics shop electronic SE and automated test stations.

11.33.3.11. Repair cycle assets to satisfy a MICAP condition.

11.33.4. Priority 4. Used for:

11.33.4.1. Routine or extensive repair of primary mission air vehicles, related AGE, and repair cycle assets.

11.33.4.2. Administrative aircraft undergoing scheduled or unscheduled maintenance.

11.33.4.3. Routine maintenance of AGE not otherwise listed above.

11.33.4.4. WRM items due maintenance or inspection.

11.33.4.5. Inspection, maintenance, and TCTO compliance of RSP or MSKs.

11.33.4.6. Scheduled calibration and unscheduled repairs on TMDE not listed above.

11.33.4.7. Extensive repair of aircrew or missile training simulator, or other training devices or related AGE.

11.33.5. Priority 5. Used for:

11.33.5.1. Bench stock requirements.

11.33.5.2. Fabrication and repair of aeronautical items not carrying a higher priority.

11.33.5.3. Non-tactical or non-primary mission aircraft undergoing extensive repair.

11.33.5.4. Time change requirements on non-nuclear items.

11.33.6. Priority 6. Used for fabrication and repair of non-aeronautical items, equipment, and other aeronautical requirements.

11.33.7. Priority 7. Used for spares excess to base requirements.

11.34. Intermediate Repair Enhancement Program (IREP). MXG/CC is the OPR for the IREP program. IREP provides wing senior leadership a forum to evaluate current aircraft weapons systems resource and support status, highlight specific problem areas, focus on local repair initiatives to include the AFREP processes, and discuss ways to improve the overall repair cycle process.

11.34.1. IREP Meeting. The meeting will be held at least quarterly and chaired by the WG/CC, WG/CV or MXG/CC. Participants may include the following: LRS, FSC, representatives from maintenance units, O&M resource advisors, maintenance analysis, AFREP (if applicable), QA, and others as determined by the MXG/CC. The responsible asset manager should be the focal point to lead the discussion of the key data about a specific part.

11.34.1. **(ANG)** IAW AFI 21-123, AFREP is optional to the ANG.

11.34.1.1. Subject Matter Review. One of the objectives of the IREP meeting is to increase overall base self-sufficiency for repair and reduce the overall cost of operations. Topics discussed vary based on local requirements, but should include key elements of asset management and costs associated with each of the maintenance stock fund divisions. The number of items reviewed in each topic is determined locally. Units determine the specific format and visual aids used for presentation of the following information:

11.34.1.1.1. Asset Profile/Top Projected MICAP Situations. An asset profile is an in-depth review of an asset identified as critical to mission accomplishment or that causes frequent MICAP situations. Data in an asset profile may include number authorized and on-hand, number repaired and not repaired, number of MICAPs, average repair cycle days, average AWP days, monthly demand, item cost, and financial value of assets in the repair cycle. The overall health of the assets should include reasons for MICAP situations and solutions to resolve them.

11.34.1.1.2. Test Station Equipment Profile. Test station in-commission time is critical to efficient repair cycle output. TMDE and other shop deficiencies may have a negative effect on the base repair cycle process. The wing should focus on actions which maximize test station capability.

11.34.1.1.3. Wing Self-Sufficiency Initiatives. Initiatives include discussion of new wing, group and squadron AFREP initiatives and other local self-sufficiency repairs. Discussions must include how initiative is crossfed to appropriate depot, MAJCOM and all other like-MDS bases.

11.34.1.1.4. High Cost Maintenance. Unit funded TCTOs/modifications, high cost work centers, SPRAM back orders, financial value of parts in the repair cycle, etc.

11.34.1.1.5. Top CANN Items. Items with significant CANN histories. Review information which includes the number of times items were CANNed in the last 30 days, average CANN occurrences over the last 6 months, projected get well date, and the time required to CANN the item.

11.34.1.1.6. Unit Aircraft Engine Status Review. A status review summary should include number in work, projected production date, and supply drivers for work stoppage.

11.34.1.1.7. Repair Cycle Bottlenecks. Review any area, which impedes the repair cycle process such as frozen supply records, supply, rejects, test station backlogs, personnel deficiencies, manpower shortages etc.

11.34.1.1.8. AWP Summary. Analyze due-outs causes and back order priorities to determine if supply action is required to correct any deficiencies/problems.

11.34.1.1.9. Repair Cycle Throughput. Throughput is the average time it takes to move individual items through the repair cycle. Review/compare the 12-month average versus the current month repair cycle time (RCT) to determine if progress is being made.

11.34.1.1.10. Part Store Issue Effectiveness. Percentage of aircraft parts issued from the flightline part store vs. the main warehouse. Disregard this element when LRS does not segregate aircraft components into a separate warehouse.

11.34.1.1.11. Discuss product improvement initiatives and maintenance related to Innovation Development through Employee Awareness (IDEA) submissions, etc..

11.35. Destruction of TOP SECRET Material. Destruction of TOP SECRET material requires a receipt according to AFI 31-401. Include a copy of the destruction certificate with the turn-in documentation.

11.35.1. Provide sensitive instruments interior container protection.

11.35.2. Ensure a copy of the LRU/SRU historical record accompanies turn-in of all items.

11.36. Certifying Items Associated With Explosives: Ensure items such as Multiple Ejector Racks (MERS), Triple Ejector Racks (TERS), pylons, launchers, rafts, bomb racks, ejection seats, fire suppression bottles, survival equipment and gun systems and components are certified explosive free prior to turn in to LRS and/or DRMO. Refer to TO 11A-1-60, *General Instructions - Inspection of Reusable Munitions Containers and Scrap Material Generated from Items Exposed to or Containing XPL*, for specific certification requirements.

Chapter 12

WING WEAPONS MANAGER AND WEAPONS STANDARDIZATION

12.1. Wing Weapons Manager (WWM). The WWM will be a 2W100 CMSgt (within AFRC the Senior Weapons Loading Supervisor is the WWM) who is assigned directly to the MXG/CC. The WWM is the wing's focal point for all weapons loading and armament systems related matters. The WWM's primary efforts focus on compliance, continuity, and standardization. Weapons activities required to support the generation of peacetime training sorties generally do not reinforce primary combat skills. Therefore, the WWM plays a key role in ensuring that the unit is able to produce combat loaded aircraft. The WWM is charged with providing technical and managerial advice to senior leaders in matters of weapons loading and armament systems. The WWM coordinates with the weapons sections, armament systems flight, wing weapons and tactics, the munitions flight, and other unit agencies on weapons related matters. The WWM has the authority to cross group and squadron functional lines. The WWM (will):

NOTE: (ANG only) In cases where the function is not represented by full time personnel, the MXG/CC shall appoint a full time representative. In cases where a 2W100 Chief Master Sergeant is not assigned to the Maintenance Group, the MXG/CC may request a waiver for the most qualified (2W1) SMSgt to serve as the WWM for up to 24 months. Submit waivers to ANG/A4MW for approval.

12.1.1. Is the functional manager for all 2W1X1 personnel. The WWM is the wing POC for all 2W1X1 manpower issues within the wing to include coordination on all manning, workcenter and organizational changes, AFSC changes, cross/retraining requests and waivers. The WWM informs the MAJCOM Armament functional manager of any proposed actions that may drive changes in unit manpower requirements (non applicable to ARC).

12.1.1.1. In Wings where the Armament Systems Flight is organizationally aligned under a Munitions Squadron (MUNS), the Armament Systems Flight will organize, operate and perform duties and responsibilities per **Chapter 5** of this instruction.

12.1.2. Assign and balance 2W1X1 grades, experience and skill-levels between all 2W1X1 work centers across the wing. Monitors PRP status of 2W1X1 personnel, if applicable. Rotate 2W1XX personnel between wing work centers (armament flight, weapons sections, WS, QA, etc.) as required to provide breadth of experience, promotion and job opportunities within the unit and 2W1 career field. Recommend all personnel be screened and considered for rotation at a maximum of every three years (non applicable to ARC). Ensure only individuals with the 2W1 AFSC (or equivalent contractor personnel) are certified/qualified to load/unload munitions items on aircraft (except for those qualification tasks specifically outlined in this AFI).

12.1.3. Designate the LSC, academic instructor, and lead crews in writing. LSC Team Chief will be a 2W171 with a minimum grade of TSgt. SLC Team Chiefs will be a 2W171, with a minimum grade of TSgt if unit manning/personnel experience permits. Provide load crew training and certification program guidance and monitor implementation.

12.1.4. Inform the MXG/CC and affected SQ/CC and/or Operations Officer of any issues or problems affecting load crew status, DLO, projected manning, equipment, and other items of concern.

12.1.5. Review the wing/squadron SORTs report prior to submission to the MAJCOM. Any equipment or load crew shortfalls which affect the wings C-rating in SORTS will be included and com-

ments provided. Comments will provide reason, action taken and proposed get well dates for all 2W1 issues reported in SORTs. SORTS will be reported IAW AFI 10-201.

12.1.5.1. In units where the AEF Reporting Tool (ART) is used, the WWM will review the ART for correct UTC status reporting.

12.1.6. Monitor overall load crew status and advise the MXG/CC when the number of fully certified load crews falls below the UCML/TTML minimum. If this occurs and cannot be corrected within 30 days, the following information is sent by secure message, through the MXG/CC, to the appropriate MAJCOM 2W1XX functional manager

NOTE: All 2W1X1s working outside their respective workcenter or DAFSC will be qualified/certified if possible to fill load crew shortfalls before sending a message to the MAJCOM:

12.1.6. **(ANG)** If this occurs and cannot be corrected within 60 days, the following information is sent by secure message, through the MXG/CC, to the NGB/A4MW.

12.1.6.1. Number of 2W1X1 personnel authorized and assigned by work center, skill level (primary AFSC) and grade for the entire wing. Include all work centers to which 2W1X1 personnel are assigned.

12.1.6.2. Number of 2W1X1 personnel working outside the AFSC/workcenter.

12.1.6.3. Number of 2W1X1s not able to perform primary duties and the reason.

12.1.6.4. Number of fully certified crews. Include corrective action, get well date, and 30/60-day load crew status projection. If the standard cannot be reached in 60 days, provide the reason.

12.1.6.5. Number of load crews formed but not fully certified. List crews and specific items for which they are not certified and qualified.

12.1.6.6. Remarks: List limiting factors, equipment shortages, availability of training aircraft, etc.

12.1.7. Annually review DOC Statements, OPLANs, UCML/TTMLs, unit tasked UTCs (for equipment and personnel) and UMD to identify any disconnects or problems. Coordinate changes and appendices with the wing weapons and tactics function and the munitions flight. Report any findings to MAJCOM.

12.1.7. **(ANG)** Also coordinates with the AMXS Weapons Element supervisor. They as a collective group shall develop the unit's SCL, utilizing the UCML as the basis of information.

12.1.7.1. Quarterly (annually for ARC) validate and document wing 2W1X1 UTC AEF taskings against existing/squadron DOCs. Specifically, WWM will ensure no shortfalls exist by aligning required skill level, grade, line remarks and CFETP qualifications against tasked UTCs to include AEF taskings for all assigned 2W1X1 personnel. If a shortfall exists, WWM will immediately start an aggressive training program to eliminate shortfalls.

12.1.8. Resolve scheduling conflicts affecting weapons loading and DLO training programs.

12.1.9. Provide input during development of local exercises involving weapons loading/armament functions, and serve as an advisor/evaluator to the wing exercise evaluation team.

12.1.10. Ensure a recognition program for load crew and armament personnel is established.

12.1.11. Ensure standardization of load crew CTKs by aircraft MDS to the maximum extent possible to provide interoperability of load crews. CTKs should contain all tools to accommodate common

loading and maintenance functions. Weapons load crew CTK MILs will be signed by the WWM. In coordination with the weapons section NCOIC and WS superintendent, determine the number of loading tool kits required in bomber units, and those that support only test, evaluation or training missions.

12.1.12. Ensure sufficient quantities of serviceable load crew training munitions are available to support both load crew and DLO training programs. Review and validate all Munitions Forecasts submitted by WS and the Armament Flight prior to submission to MAJCOM.

12.1.12.1. Training munitions: Authorized quantities of training munitions are posted on the HAF Knowledge Now, A4MW website. These numbers reflect the maximum munitions required exclusively for weapons load crew certification and recurring training (WLT). These munitions are forecasted by and assigned to weapons load training (W1) accounts. Sortie generation and aircrew classroom training munitions must be forecasted for and maintained on separate supply accounts. Munitions required for DLO training must be forecasted on the unit sortie surge account.

12.1.12.2. Units may request additional quantities of munitions than specified on these tables but will not be allocated munitions unless sufficient quantities are available to do so. The UCML/TTML will be the source document for WLT munitions requirements and authorizations.

12.1.12.3. Units with multiple MDS will only be authorized the minimum allocation/authorization of WLT munitions to facilitate load training on all MDS. **EXAMPLE:** If a base has both F-15E and F-16 aircraft assigned and both MDS are tasked on the UCML/TTML for GBU-12 then only two, not four, GBU-12's will be allocated to support both MDS. If a situation exists where the WLT facilities are physically separated and the WWM determines it negatively impacts load crew training to move munitions from one to the other, then each facility will be authorized the minimum number of tasked training munitions.

12.1.13. Ensure introductory training is provided to newly assigned personnel on aircraft familiarization, safe for maintenance, explosive safety, weapons release and gun systems maintenance prior to performing duties. Training, certification and qualification required to load munitions on aircraft are only provided by Weapons Standardization. All wing 2W1X1 personnel regardless of duty position will receive initial and recurring weapons academics.

12.1.14. Based on unit taskings, designate the number of load crews, other than the LSC and lead crews, which are certified on support or limited use munitions. In nuclear tasked units the WWM determines the number of load crews required to be certified on applicable nuclear weapons in support of Oplans, when the Oplans DOC does not dictate load crew requirements.

NOTE: (ARC) The WWM Coordinates with the MXG/CC in determining the number of load crews to be certified on support or limited use munitions.

12.1.15. Develop, in coordination with the explosive safety officer and airfield management, a wing OI or supplement to this AFI for parking, launch and recovery of explosives-loaded aircraft, end of runway procedures, and impoundment of aircraft with hung ordnance or jammed gun systems. The OI or supplement must include requirements to:

12.1.15.1. Arm and de-arm munitions-loaded aircraft in approved areas. Immediately-prior-to-launch and "safing" procedures may be performed in the aircraft parking area for contingencies, unit exercises, and daily training missions as quantity distance clearance allows with the approval of wing safety, airfield management and the MXG/CC.

12.1.15.2. Establish procedures for inspecting and "safing" hung munitions or external stores before aircraft return to parking areas. Control access to aircraft until munitions are made safe and cause of hung stores is identified. As a rule, ensure aircraft guns and rockets are "safed" in the de-arm area before aircraft return to open ramp parking areas.

12.1.16. Monitor weapons release/gun fire-out rates, malfunctions and corrective actions to assess weapons and armament systems reliability. Take appropriate action to resolve any problems and contact MAJCOM for assistance if required.

12.1.16.1. Weapons release reliability rates are calculated by dividing the number of successful releases by the number of attempts (Goal: 99%).

12.1.16.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Weapons release reliability rates shall be considered 100 percent unless there is a documented weapons malfunction reported by the aircrew. Rates are calculated by dividing the number of successful releases by the number of pilot reported attempts (Goal: 99 %).

12.1.16.2. The gun fire-out rate is calculated by dividing the number of successful bursts by the number attempted (Goal: 98%). Once a malfunction occurs, any further attempts for the purpose of clearing the malfunction should not be counted as attempts.

12.1.16.2. **(ANG)** N/A to the ANG. The following only applies to the ANG: The gun fire-out rate shall be considered 100 percent unless there is a documented gun system malfunction reported by the aircrew. Rates are calculated by dividing the number of successful gun sorties by the total number of gun missions flown (Goal: 98 %).

12.1.17. Ensure compliance with local accountability procedures for AFI 36-2217, , and AFI 21-201. In conjunction with the weapons sections and munitions flight, develop a standard local format for the AF IMT 2434. A computer generated product may be used if it contains all required information.

12.1.18. Coordinate with the Operations Officer, munitions flight, weapons safety and operations plans in developing nuclear weapons operations procedures (e.g., convoy, custody transfer, no-lone-zone) if applicable.

12.1.19. Ensure sufficient computer systems are assigned to support network and modem interface with the WS, weapons sections, armament systems flight, automated training systems and other agencies.

12.1.20. Ensure approval of LME if not included in tech data or listed on the MMHE Focal Point web site (**https://peonet.eglin.af.mil/mmhe**) managed by the MMHE Focal Point, 615 Apalachicola Road Suite 101, Eglin AFB, FL 32542-6845.

12.1.20.1. Munitions/armament LME is specialized equipment designed to interface with or support munitions or armament suspension equipment such as tools, handling dollies, storage racks, maintenance stands, transport adapters, etc. All munitions/armament LME contained on the MMHE Focal Point web site meets applicable AFOSH, explosive safety, and USAF standards and is approved for local manufacture and use at unit level AF-wide. Drawing packages for these items are available to the unit via the MMHE Focal Point web site. Units must use MMHE Focal Point-designed munitions/armament LME for new procurements if a design exists and fills the requirement.

12.1.20.2. Munitions/armament LME specifically designed to interface with or support munitions not contained in technical data or on the MMHE Focal Point web site (i.e., hardened/protective aircraft shelter missile racks, “y”-stands, munitions chocks, specialized tools, etc.) must be coordinated at unit level and forwarded to the MAJCOM Functional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has AF utility, the drawings shall be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site. Munitions/armament LME not designed to interface with or support munitions not contained in technical data or on the MMHE Focal Point web site must be approved at the unit level. Units are encouraged to forward any such approved LME for possible inclusion on the MMHE Focal Point web site by sending an approved drawing package to the MAJCOM Functional Manager for coordination/evaluation. If the MAJCOM Functional Manager determines the item has additional AF utility, the drawing package shall be forwarded to the MMHE Focal Point for evaluation/approval prior to formal development and placement onto the MMHE Focal Point web site.

12.1.20.3. All LME must meet applicable AFOSH, explosive safety, and USAF standards. All equipment designated for use with nuclear weapons test and handling must meet requirements in AFI 91-103.

12.1.20.4. All LME must be maintained and inspected for serviceability on a regular basis IAW appropriate 00-20 series TOs AFTO IMT 244, or equivalent, must be maintained for all LME items (racks, stands, adapters, etc). Equipment without TOs must, as a minimum, be inspected every 180 days for corrosion, physical defect, and lubrication as required.

12.1.21. Conduct a wing weapons meeting monthly (quarterly for ARC) with representatives from WS, wing safety, quality assurance, munitions flight, armament flight, and the weapons sections to discuss and resolve any wing weapons issues, concerns or problems. Weapons AFETS are encouraged to attend.

12.1.22. Short tour locations will ensure en route training requirements for inbound 2W1X1 personnel are identified and requested through the MAJCOM Munitions Division

12.1.23. Ensure WRM Rack, Adapter, Pylons (RAP) and guns/components are serviceable to support OPLAN tasking.

12.1.24. Ensure inspections on all aircraft AME, NIE and gun systems are performed on schedule to prevent overdue inspections or overfly of equipment.

12.1.25. Provide monthly (quarterly for ANG) manning, weapons release and gun reliability rates, equipment, and tester status to MAJCOM via e-mail or web site NLT the 5th of each month. Monitor the status of critical armament and weapons systems support equipment and testers for serviceability, accountability and status of TCTO modifications.

12.1.25. **(ANG)** Provides only quarterly manning, equipment and tester status to MAJCOM via e-mail or web site.

12.1.25.1. Provide a valid document number for all items listed in AWP status in the remarks column of the report if the item is procured through USAF supply channels. If parts are obtained from commercial sources, and purchased using IMPAC card, provide source, date ordered, and status in the remarks column.

12.1.26. Utilize and involve assigned Weapons AFETS in wing aircraft weapons and armament related issues and meetings IAW AFI 21-110.

12.1.27. Inform the MAJCOM, within 24 hours, of any significant weapons or armament related issues such as dropped/hung munitions, equipment and aircraft release reliability or deficiency problems, and weapons safety or mishap issues.

12.1.27.1. If a unit has an incident, it is important to preserve the evidence to the maximum extent allowable by operational requirements and safety. An example would be segregating an aircraft gun versus destroying it if it poses no immediate danger. This allows for evaluation of all the evidence and the ability to recreate the mishap conditions.

12.1.27.2. If a malfunctioning munitions item (live or inert) causes a mishap, also notify OO-ALC/WM's Munitions Rapid Response Team at DSN 777-4865/5155, 775-5507/3208 and 777-AMMO or 775-AMMO, or the Hill AFB Command Post at 777-3007. This team is comprised of experts (engineers, equipment specialists, program managers and safety personnel) from the conventional weapons and munitions programs and can respond within 24 to 48 hours to assist in determining the cause of a failure. Initial contact, as soon as practical, shall allow the team to make travel arrangements and aids response time. For units with 20 or 30MM gun systems use of the team is encouraged (not mandatory unless a safety issue exists) if the cause of a gun system jam cannot be easily determined or for recurring jams. Using the team provides highly valuable information regarding ammunition/gun system problems and allows ALC personnel to see issues first hand.

12.1.28. See **Chapter 7** of this instruction for information on Aircraft Generation Planning.

12.1.29. On TDY's or Deployments with durations of 30 days or more determine if WS personnel will be deployed to allow the means to provide MPRL and recertification capability to deployed load crews. On TDY's where live munitions are to be fired/expended, regardless of length, determine whether or not WS participation is required.

12.1.30. Perform semi-annual (annual for ARC) self inspection on WS, weapons sections and armament flights, interval not to exceed 180 days (366 days for ARC). Maintain copies of the inspection results for two years.

12.1.31. WWM, with concurrence of MXG/CC, determines when armament systems personnel are required to perform load crew duties or related certifiable tasks.

12.1.32. Review **Chapter 14** of this instruction for requirements dealing with a PAS Environment.

12.1.33. See **Chapter 14** of this instruction for KEEP program information.

12.1.34. Ensure requirements for submitting AFTO IMT 375 on all weapons support equipment identified in TO 35-1-24 are accomplished. This process provides vital information and source documentation for ALCs to adequately reflect equipment sustainment costs, attrition rates, and to enable timely forecasting for replacement funding.

12.1.34. **(ANG)** N/A to UAE owned F-16 block 60 equipment and RNAF owned F-16 aircraft.

12.2. Weapons Standardization. WS is organized under the WWM and is comprised of the superintendent, the LSC, and lead crews. An LSC may be formed for each MDS in multiple MDS units. One lead crew is normally formed for each AMU, but additional crews can be formed as needed. Lead crews return

to an AMU for contingencies, deployments, generations and exercises. WS does not need to be formed in organizations that do not load munitions requiring certification providing the requirements of the weapons task qualification program are met, to include academic, practical, and recurring training. In organizations such as this, the weapons function will be responsible for applicable weapons manager responsibilities and the weapons task qualification program. In a wing, WS is administratively assigned to the MOS but works directly for the WWM.

12.2.1. The key to successful combat/test/training operations is trained load crews proficient at generating aircraft configured to support combat and contingency plans. Units will maintain at least the minimum number of required certified load crews (as specified on the UCML/TTML). Achieving this standard may require units to certify/qualify weapons personnel who may be assigned duties outside the weapons sections. Although assigned to support sections, resource advisor duties, etc., 2W1X1 personnel remain accountable for their primary load crew duties, will be managed accordingly, and are counted in wing 2W1X1 manpower totals.

12.2.2. WS Superintendent Responsibilities. The superintendent is responsible to the WWM, and performs section NCOIC duties outlined in **Chapter 3** of this instruction. The superintendent develops and oversees the weapons standardization program, sets standards, develops local policies and procedures, and interprets all technical data and directives governing the weapons standardization program. The WS superintendent will:

NOTE: (ARC) WS superintendent responsibilities may be performed by the LSC crew chief.

12.2.2.1. Coordinate with the weapons section NCOICs to schedule crews for initial training, certification, minimum proficiency requirement loading (MPRL), and semi-annual evaluations (SAE) training. The WS superintendent will document monthly scheduling effectiveness (quarterly for ARC) and submit a summary letter for inclusion in the MSEP, including as a minimum:

12.2.2.1.1. Load Crew Scheduling and Training Effectiveness (MRPL/SAE) (non applicable to ARC):

12.2.2.1.1.1. Crews scheduled versus completed training events (non applicable to ARC).

12.2.2.1.1.2. Passed versus failed evaluations.

12.2.2.1.1.3. Problems/trends which detracted from scheduling and training.

12.2.2.2. Coordinate with the AMU (MOF in MAF units) PS&D to ensure availability of training aircraft.

12.2.2.3. Manage WLT training munitions, components, and accessories by establishing a supply point with munitions (Munitions Operations) for conventional training munitions. WS will establish an equipment account for nuclear training weapons and accessories, if required. Document and schedule discrepancies requiring repair on training munitions through munitions control.

12.2.2.4. Ensure load crew training munitions are maintained to the same standard as the parent munitions to the maximum extent possible. Training munitions must represent the parent munitions item in configuration, body color and mechanical function. Those having discrepancies, which affect safety, reliability, or detract from load crew training, are not used.

12.2.2.4.1. Load crew training munitions and components are inspected on a 180-day interval by the WS or more frequently if mandated by commodity TOs. Develop a formal agreement

with the munitions flight concerning periodic inspection, maintenance, and refurbishment. An AFTO IMT 244 (or automated form) is maintained for each AUR training munition.

12.2.2.4.2. AFTO IMT 244 (and/or automated forms for training munitions only) are maintained by the WS and accompany the munition item when turned in for repair or scheduled inspection.

12.2.2.4.3. An AFTO Form 350 accompanies munitions and munitions components when they are turned in to the munitions flight for repair.

12.2.2.5. Use the guidelines established in AFI 21-201 when submitting the annual forecast to the MAJCOM.

12.2.2.6. Order training munitions and munitions items to meet unit needs.

12.2.2.7. If sufficient training munitions are not available to support DLO training, coordinate use of assigned items from WS supply point for management flexibility.

12.2.2.8. Use the WLCMP, or equivalent program, to track load crew certification and qualification status. Unless computer systems are networked or modem-interfaced, printed products are produced and distributed at least twice each month to the weapons section NCOICs. Printed products are formatted so that manual updates can be made between issues. Monthly, generate a printed product for WS records.

12.2.2.8. **(ANG)** Provide printed products to weapons section chiefs semi-annually.

12.2.2.9. Upon notification of a deployment or an increased state of alert, takes appropriate action to certify load crews on support munitions if required.

12.2.2.10. Maintain a copy of all applicable AF loading TOs for assigned MDS aircraft. An example of a TO that normally wouldn't be required to be maintained could be the Dash 4, which covers integrated combat turnarounds. Training and test units need only maintain checklists for munitions to support weapons load crew training required to sustain daily flying operations and for munitions undergoing test and evaluation.

12.2.2.11. Coordinate with the AMU Production Super to ensure WLT aircraft are properly configured and safe for use.

12.2.2.12. Develop time standards for integrated loads.

12.2.2.13. Ensure all load crews are qualified to load and unload internal gun system ammunition (including partial loads, at WWM's discretion), and preloaded chaff/flare modules on assigned aircraft.

12.2.2.14. Ensure load crews demonstrate proficiency on all capable aircraft racks and stations prior to certification on that munition. For conventional munitions capable of multiple carriage, both aircraft parent station and multiple carriage loading are required. For nuclear weapons, only the aircraft stations that are maintained in nuclear certified status are loaded.

12.2.2.15. Inspect 25 percent of WS CTKs, armament test and support equipment for serviceability, at least quarterly, and initiates corrective action as required. Schedule and track inspections to ensure 100 percent of CTKs, test, and support equipment will be checked over a one-year timeframe. Document inspection results and use for follow-up action and reference as necessary.

Ensure inspection is documented on appropriate equipment form such as AFTO IMT 244 or AF IMT 2411.

12.2.2.16. See **Chapter 14** of this instruction regarding the SCR, End of Runway, self inspection program and Sortie Generation Operations guidance.

12.2.2.17. See **Chapter 10** of this instruction regarding lost tools.

12.2.2.18. Ensure MAJCOM Mandatory Course List (MMCL) requirements are met.

12.2.2.19. See **Chapter 14** of this instruction for KEEP program information.

12.2.2.19. **(ANG)** N/A to the ANG.

12.2.2.20. Ensure individual tool kits are set up for each lead crew assigned. These CTKs may be stored in WS or the respective squadron, but are required to be maintained by the Lead Crews. In coordination with the WWM and weapons section NCOICs, determine the number of loading tool kits required in bomber units, and those that support only test, evaluation or training missions.

12.2.2.20. **(ANG)** CTKs shall be maintained as directed by the WWM.

12.2.2.21. Assist the WWM in managing load crew incentive program to recognize deserving load crews.

12.2.2.22. See **Chapter 1** of this instruction for duty shift, UCML, and command missile policy guidance.

12.2.2.23. See **Chapter 7** of this instruction for documenting maintenance.

12.2.2.24. See **Chapter 2** of this instruction for Safety.

12.2.2.25. See **Chapter 9** of this instruction for impound procedures.

12.2.2.26. WS will provide CTK's (SLC CTK's may be used at unit discretion) and required support equipment necessary to accomplish initial and recurring weapons load training.

12.3. Loading Standardization Crew (LSC). The LSC works for the WS Superintendent and conducts the weapons standardization and evaluation program. The WWM and/or WS Superintendent evaluate and certify the LSC according to criteria in this section. The LSC team chief must be at least a TSgt 2W171. The LSC trains, evaluates, and certifies the lead crews and load crews in safe and reliable munitions loading procedures.

NOTE: (ARC) If the LSC crew chief is performing WS superintendent duties then the WWM will evaluate and certify the LSC. The LSC will:

12.3.1. Conduct and monitor training to ensure personnel maintain a high degree of proficiency in loading unit-committed munitions.

12.3.2. Monitor certification and recurring training documents for accuracy and to ensure all load crew members complete required proficiency and academic training. The LSC takes decertification action if recurring requirements are not met.

12.3.3. Ensure all load crew training is documented.

12.3.4. Review and coordinate on all loading related AFTO IMT 22's and TODCR (F-22A) IAW TO 00-5-1.

12.3.5. Develop and coordinate weekly and monthly load training aircraft requirements with the MOF PS&D. This paragraph does not apply when the unit is using a permanently assigned load crew trainer.

12.3.6. Monitor and evaluate lead crews in the performance of their duties.

12.3.7. Provide non-load crew personnel initial and recurring weapons task qualification training, including practical training on:

12.3.7.1. Weapons system safety devices to include proper use, identification, installation and removal.

12.3.7.2. Munitions item safety requirements.

12.3.7.3. Location of weapons system explosive items used to jettison and release external stores.

12.3.7.4. Stray voltage checks, as required.

12.3.7.5. Location and position of cockpit armament system switches.

12.3.8. Perform spot inspections and evaluate flightline munitions/explosive handling, loading and postloading operations, and provide MPRL/qualification credit to the maximum extent. Augment wing inspection/evaluation teams during local exercises to assess munitions loading capabilities and activities.

12.3.8. **(ANG)** May augment wing inspection/evaluation teams during local exercises to assess munitions loading capabilities and activities.

12.3.9. Perform semi-annual evaluations on all certified load crews. Lead crewmembers may assist; however, at least one member of the LSC must be present during all semi-annual evaluations.

12.4. Academic Instructor. An LSC member is designated to administer the weapons academic training program, and is not considered a maintenance instructor. A qualified weapons instructor conducts initial and recurring weapons academic training for all wing 2W1X1s (or equivalent contractor personnel) .

12.5. Lead Crews. The lead crews are assigned to the WS and assist the LSC in training, evaluating and certifying unit load crews in safe and reliable munitions loading procedures. They document, initiate and maintain the database to reflect qualification, certification status and history of assigned load crew members. Ensure all load crew members complete required proficiency/academic training and take decertification action when recurring requirements are not met. Perform spot inspections and evaluations of flightline munitions/explosive handling and loading operations when not directly involved in WS training functions, and provide MPRL/qualification credit to the maximum extent. Perform flightline loading evaluations when deployed, as required, in addition to their normal load crew duties. These evaluations may be used to satisfy load crew MPRL requirements IAW this chapter.

12.5. (ANG) Lead Crews are optional for the ANG.

12.5.1. Initiate and maintain AF IMT 2435, **Load Training and Certification Document,** or locally devised form that covers everything on the AF IMT 2435, for certified crew members.

12.6. Training Facilities/Aircraft.

12.6.1. Practical training is conducted in a facility dedicated to load crew training. The facility is of sufficient size to accommodate required aircraft, training munitions and associated support equipment. It is recommended that bomber aircraft have dedicated load-training facilities, however, where not practical, inside facilities should be provided to the maximum extent possible during periods of extreme inclement weather. Adequate office space and classroom with appropriate heating and cooling are required in the academic and practical training area.

12.6.2. Aircraft will have a fully configured and operational (electrical and mechanical) weapons system for load training purposes. If a permanent Armament Systems Trainer (AST) is assigned, it also will have a fully configured and operational weapons system. In addition, the WS will develop a schedule for periodic maintenance to weapons system components.

12.7. Academic Training. All 2W1X1's assigned to a wing regardless of duty position, and non 2W1 personnel who maintain specific weapons task qualification, are required to complete initial and recurring academic training. 2W1X1 and non-2W1X1 QAEs assigned contract surveillance oversight duties of civilian contractors that perform MQ-1/MQ-9 munitions loading/unloading operations will complete MQ-1/MQ-9 specific weapons academic training. Complete initial academic training before the start of any practical training. Administered every 15 months, recurring academic training may also be part of training and recertification for failed loads. Initial and recurring course outlines may be combined. Coordinate training requirements and course control documents annually through the wing weapons safety office or the safety officer and the MTF. The weapons safety office approves all nuclear surety training lesson plans. The WWM is the final approval authority for course documents.

12.7.1. Course control documents are tailored to unit and contingency needs and, as a minimum, cover the following items:

12.7.1.1. Publications, applicable weapons related local operating procedures or directives.

12.7.1.2. Safety (ground and explosive) and security.

12.7.1.3. Aircraft, munitions, AGE, SE, TMDE, and munitions trailer familiarization.

12.7.1.4. Testers, handling equipment and special tools.

12.7.1.5. Operations in revetments/protective aircraft shelters.

12.7.1.6. Weapons storage and security system vaults (tasked units).

12.7.1.7. Nuclear weapons systems fault isolation and troubleshooting procedures, if applicable.

12.7.1.8. Applicable command unique training requirements, in MAJCOM 36-22XX supplements.

12.7.1.9. Hazards inherent during CSO.

12.7.1.10. Task Assignment List (TAL) and applicable –16/-33 T.O.s (initial academics / load crew personnel only).

12.7.2. Load crew academic training may fulfill the requirements for explosive safety and nuclear surety training if requirements of AFI 91-101 and AFMAN 91-201.

12.8. Practical Training. Practical training starts when academic training is complete. The LSC or lead crews administer practical training to each load crew member on required munitions and aircraft. They

ensure practical training duplicates operational conditions to the maximum extent possible and stress requirements such as DLOs, two-person concept, safety wiring and sealing, controlled access and weapon custody receipt and transfer procedures, as required. Load crew members are trained on loading and unloading procedures prior to qualification or certification on munitions.

12.8.1. If a specific type or model of munition has been requisitioned but not received or not available, any type or model of the basic item may be used for load crew training until receipt of the munition. LSC/lead crew personnel will teach the major differences between training and WRM munitions.

12.8.2. Load crews must be familiar with munitions serviceability criteria and munitions tie-down procedures in TO 11-1-38, *Non-nuclear Munitions, Positioning and Tie-Down Procedures* and, as applicable, TO 11N-B1004-1, *Nuclear Weapons Tie-Down Procedures.* Blanket rejection of training munitions during load training is not authorized, and munitions may not be rejected solely because they are inert.

12.8.3. Initial support munitions (SM) / limited use munitions (LM) training may be accomplished concurrently with initial primary munitions (PM) training and certification, but will be accomplished within 30 days (90 days for ARC) of completion of initial training/certification. When a new PM, SM or LM is designated on the UCML/TTML, LSC and lead crews are certified within 30 days (90 days for ARC) after receipt of training items.

12.8.4. Load crew members will be familiar with the operation of AGE and SE which may be used during loading operations, even if the items are not used on a routine basis. Training on this type of equipment is conducted during initial training and certification.

12.8.5. Units with a nuclear tasking that operate from, or deploy to, locations equipped with weapons storage and security system (WS3) vaults in the protective aircraft shelters, will train load crews to unload and load weapons from and into the vault. An approved locally manufactured stand may be used to simulate the storage vaults for load and unload training (drawings are available through the MMHE Focal Point).

12.8.6. All nuclear certified load crews at units with or without WS3 will be trained on trailer handling/tie-down procedures quarterly.

12.8.7. Establish a program for supervisory post-load inspections of explosive loaded aircraft (nuclear and conventional). Supervisors (expediters, shift supervisors, section NCOICs, etc.) performing such inspections require initial and annual qualification training by WS. Training is documented in either the WLCMP (or equivalent), MIS, or an automated product.

12.8.7. **(ANG)** IAW Weapons Expediter duties in **Chapter 4** of this instruction.

12.9. Load Crew Composition. Load crews consist of two, three or four persons within the 2W1 AFSC as follows (except for those qualification tasks specifically outlined in this AFI):

12.9.1. Two-member crews: MH-53, AC-130H, MC-130E/H/P, HH-60 and MQ-1.

12.9.2. Three-member crews: AC-130U, A/OA–10, F–15, F–16, F-22A, F–117, and MQ-9.

12.9.3. Four member crews: B–1, B–2, and B–52.

12.10. Task Assignment List (TAL). A TAL is a functional grouping of procedural steps from applicable -16/-33 series TOs, by crew position, to be accomplished in sequence by each crew member during a

loading operation. TALs are used during training for all loading operations except those for which job oriented procedures have been published (B-2 rotary launcher conventional munitions, and B-52H CALCM pylon and CSRL loading/unloading is accomplished procedurally parallel to the -16 procedures). TALs will include single, DLO and integrated munitions loading procedures (including gun and chaff/flare loading). Units may develop TALs for aircraft armament electrical functional checks (at units discretion). Their purpose is to standardize procedures and facilitate the training of unit load crews. TALs are not a replacement for TO procedures. Separate TALs will be developed for weapons qualification tasks performed by non-2W1X1 personnel. MPRLs and semi-annual evaluations are not considered training operations. The following guidelines establish minimum responsibilities of individual crew members:

12.10.1. Two member load crews:

12.10.1.1. Crew member number one is the load crew chief and is in charge of the loading operation, performs functional checks and attaches stores to the pylon/rack.

12.10.1.2. Crew member number two assists the number one person in performing the pylon/rack preparation and installation of stores to vehicle.

12.10.2. Three member load crews:

12.10.2.1. Crew member number one is the load crew chief and is in charge of the loading operation, positions cockpit switches during functional checks and attaches stores to the pylon/rack.

EXCEPTION: F-22A Crew member number one ensures cockpit switches are properly positioned and applies APU power utilizing the portable maintenance aid (PMA) and attaches stores to the pylon/rack.

12.10.2.2. Crew member number two performs the pylon/rack preparation and operates test equipment during functional checks.

EXCEPTION: F-22A Crew member number two assists crew member number one with APU power application and performs the pylon/rack preparation.

12.10.2.3. Crew member number three performs munitions preparation and operates the bomblift truck during loading operations.

12.10.3. Four member load crews:

12.10.3.1. Crew member number one is the load crew chief and is in charge of the loading operation, positions the cockpit switches and attaches stores to the pylon/rack.

12.10.3.2. Crew member number two performs the pylon/rack preparation, operates test equipment during functional checks and assists in loading of stores.

12.10.3.3. Crew member number three performs munitions preparation.

12.10.3.4. Crew member number four performs rack/pylon preparation, operates test equipment during functional checks, and operates the bomb lift truck.

12.11. Weapons Load Training Basic Terms.

12.11.1. All-Up-Round (AUR). A munitions item which is shipped and stored in a complete, ready to use configuration. An AUR munition requires no pre-assembly.

12.11.2. All-Up-Round Container (AURC). A container used to ship, store, and handle AUR munitions. Some AURCs are designed to load munitions directly from them onto an aircraft.

12.11.3. Dual loading operations (DLO). A conventional munitions loading operation on bomber aircraft accomplished simultaneously by two load crews. (MAJCOM approval required for fighter aircraft).

12.11.4. Integrated Load. The loading of two or more different types of munitions in an authorized configuration during a single operation.

12.11.5. Limited Use Munition (LM). May include, but is not limited to, munitions used by a unit for firepower demonstrations, test, aircrew training or like operations. LMs may include munitions which may be used in a war or a contingency. LMs are designated on the UCML/TTML. WWM determines the number of crews (other than LSC/SLC) to be certified.

12.11.6. Munitions Family Group (MFG). A designated grouping of munitions based on similarity of either physical characteristics or procedural commonality. Certification on a MFG is accomplished during initial training on each tasked munition within the MFG (subject to availability of training munitions) then maintained through the MPRL process.

12.11.7. Postload Checks. Power-on checks and/or tasks required by technical data prior to declaring munitions-loaded on aircraft mission ready.

12.11.8. Primary Munition (PM). Munitions which will be the primary weapons used by the unit to execute test/training or their DOC war plan and are designated on the UCML/TTML.

12.11.9. Standard Conventional Load (SCL). The designation, which includes the number, type and configuration of authorized munitions, required for a specific mission and aircraft load.

12.11.10. Support Munition (SM). A munition which may be used in support of contingency plans or directives and is designated on the UCML/TTML. WWM determines the number of crews (other than LSC/SLC) to be certified.

12.11.11. Monthly, Bi-Monthly, Quarterly, Semiannual, or Annual Intervals. Requirements will be accomplished by the last day of the scheduled month.

12.12. Load Crew Certification/Decertification

12.12.1. Certification. These guidelines are used to establish the loading standardization and evaluation program. The LSC will establish and manage a program to train, certify and maintain proficiency for each crew on the munitions designated by the UCML/TTML or WWM for SMs/LMs. Certification and training requirements for load crews are based on the following:

12.12.1.1. Except the LSC and lead crews, load crew members are not certified on more than 10 MFGs. Dual position (LSC and SLC) or dual MDS (LSC only) certification is authorized; however, personnel may not be certified on more than 10 MFGs (exception; dual MDS certified LSC's on F-15C/D/E may exceed the 10 MFG rule). Personnel certified on two separate MDS aircraft alternate quarterly requirements between the two tasked aircraft. Proficiency requirements are accomplished on both aircraft IAW this chapter. Personnel who are dual position certified will ensure they comply with MPRL and SAE requirements in both positions for which they are certified, they will not alternate between the two. Test wing personnel may be certified on more than 10 MFGs and multiple MDS provided all other requirements for load certification, qualification

and evaluations are complied with and authorized by the WWM. ***NOTE:*** AFRC Dual position certification of full time (ARTs) or dual MDS (LSC only) certification of load crew members is authorized; however, they may not be certified on more than 10 MFGs. In the dual or secondary position, personnel will only load munitions for which they are certified, and will comply with requirements stated above. Dual certify only in the MFGs required to meet mission requirements.

12.12.1.2. LSC, lead crews, and load crews are certified on all PMs. The LSC and lead crews are certified on all SMs to provide the cadre for future certification of unit load crews. The LSC is certified (or qualified for items so identified by unit tasking) on unit LMs. The WWM determines the number of additional load crews trained and certified on support and limited use munitions.

12.12.1.3. A minimum of two certifying officials are required to evaluate three and four-member load crews. A minimum of one certifying official is required for two-person load crews.

12.12.1.3. **(ANG)** N/A to the ANG. The following only applies to the ANG: For initial certification a minimum of two certifying officials are required to evaluate three member load crews (if only one crew member is not certified, then, only one certifying official is required). For MPRLs a minimum of one certifying official is required to evaluate three member load crews. SAEs require a minimum of two certifying officials (one must be a member of the LSC).

12.12.1.4. Load crew member certification is valid worldwide with gaining WWMs concurrence. Reassignment does not necessarily require recertification by the gaining unit if the individual is certified on the same munitions, aircraft, and load crew position; and if MPRL or SAE requirements are current. Units develop procedures to ensure that WLCMP or equivalent data is provided to the individual prior to permanent change of station (PCS) departure. Losing units, therefore, provide gaining units with the AF IMT 2435 or equivalent.

12.12.1.5. Personnel are certified before loading war reserve nuclear weapons. Certified load crews may be evaluated by using war reserve weapons if the weapons are scheduled for loading or movement.

12.12.1.6. Personnel are certified before performing loading of conventional munitions, unless loading under the direct supervision of a minimum of two certifying officials.

12.12.2. Decertify and disqualify individual load crew members if they:

12.12.2.1. Fail an evaluation established by evaluation criteria in this chapter.

12.12.2.2. Fail to complete a required evaluation (SAE, MPRL, Qualification). If a load crew member is on TDY, on emergency leave, incapacitated, or involved in an unannounced local or higher headquarters exercise/contingency operation, do not decertify or disqualify the member providing the current SAE/MPRL/Qualification requirements (plus all past-due evaluations) are completed within 30 days of returning to duty (60 days for ARC). ***NOTE:*** (ARC only) Provisions in this paragraph also apply when individuals are excused/rescheduled from a UTA and when loading operations are cancelled due to inclement weather.

12.12.2.3. Fail to accomplish required recurring academic training. Individuals are administratively decertified and disqualified on all UCML/TTML and qualification items until academic training is completed. Once accomplished, individuals may be administratively recertified and/or requalified. ***NOTE:*** In the event of the member's absence due to emergency leave, convalescence leave, or unannounced deployments do not decertify or disqualify. Member must receive academic training within 30 days (60 for ARC) of returning to duty.

12.12.2.4. 2W1X1 and non-2W1X1 personnel performing as QAE Inspectors providing oversight of civilian contractor MQ-1/MQ-9 munitions loading/unloading operations are authorized to decertify contract munitions loading personnel if safety, reliability or lack of technical proficiency is demonstrated. The Lead Contractor Maintenance authority may also recommend decertification of MQ-1/MQ-9 munitions loading/unloading contract personnel to the on-sight QAE authority.

12.12.3. AGM-65 tasked units shall load train using both the LAU-88 (if applicable) and LAU-117 launchers and accomplish quarterly loading requirements by alternating launchers (i.e., load the LAU-117 one quarter and the LAU-88 the next). LAU-117 loading need only be accomplished using the pre-load method. LAU-88 loading is accomplished by the single load and pre-load methods. Single AGM-65 loading on LAU-88 launchers is accomplished using both MJ-1 and MHU-83 bomb lift trucks on an alternating basis and consists of a minimum of two missiles (one shoulder and one bottom station). Preloaded LAU-88 launchers are in an unbalanced configuration (one loaded and one empty shoulder station). ***NOTE:*** Some units may only possess one or two LAU-88s for WLT. These WLT assets are provided to units for training in support of deployed locations/taskings.

12.12.3.1. In test wings, the WWM will determine in writing the necessity to alternate loading the AGM-65 between the LAU-117 and LAU-88 based on Test Directives and unit planning documents.

12.12.4. Units which have the AGM-88 as a PM/SM will demonstrate the ability to load the LAU-118 using both the single store and preload methods.

12.12.5. F-15 AIM-120 loading will be alternated between the LAU-128 and LAU-106 launcher.

12.12.6. Personnel certified to load nuclear weapons on aircraft, may perform weapons transfer and tie-down procedures to and from trailers, WS3 vaults, and support stands for which load standardization training has been established and conducted IAW this instruction. They will not require these actions as separate certification items.

12.12.7. Annually perform a SCL while wearing the ground crew chemical-defense ensemble using applicable 33-1-2/33-2-1 procedures (if applicable). (Credit may be given during exercises provided a full SCL is completely evaluated).

12.12.7. **(ANG)** If AEF tasked.

12.12.8. Internal and external conventional munitions loads on B-52 aircraft will be documented separately. For munitions loading on B-1 aircraft, loading the 28 carriage conventional bomb module (CBM) does not satisfy requirements for 10 carriage CBMs.

12.12.9. For contingency operations or deployed locations an SLC should be and is normally deployed to perform WS functions. If an SLC is not deployed, the senior 2W1X1 weapons loading person (with WWM coordination) on location will have WS authority. **EXAMPLE:** A new munition or load configuration is required to support operations and crews need to be trained on location (provided Seek Eagle approval has been granted and verified technical data/procedures are available).

12.13. Load Configurations. All munitions loads will be authorized load configurations IAW the applicable MDS flight manual or valid SEEK EAGLE flight clearance.

12.13.1. For initial training a full complement of munitions (if available) will be loaded a minimum of once on a rotary launcher, TER, BRA, CBM, etc. to provide the crew experience loading a full load.

12.13.2. Sufficient weapons will be loaded during each evaluation to ensure the load crew demonstrates proficiency on loading/unloading each tasked configuration (adjacent stations, upper/lower stations, shoulder/centerline stations, etc.).

12.14. MPRL. Each munition for which an individual is certified to load, regardless if it is a primary, support or limited use munition will be loaded at least once within a 180 day period (90 day period for short tour locations). One third of the required munitions will be loaded bi-monthly (monthly for short tour locations) to provide an evaluation of load crew proficiency. For those munitions where no training assets exist (CBU-97, CBU-105, M129, etc.) difference training will be provided prior to initial certification and during recurring academics training. Load crews in air defense/air superiority units perform proficiency loads bi-monthly using all committed munitions. For B-52 units, alternate loads between internal and external stations to the maximum extent possible.

NOTE: (ARC only) One-half of the MFGs for which an individual is certified must be loaded quarterly (100 percent semi-annually) to maintain certification and provide evaluation of load crew proficiency. Units will rotate munitions within a MFG for MPRLs, e.g., load MK82 Low Drag (LD) the first quarter, MK82 AIR / High Drag (HD) the second quarter, MK84 (LD) the third quarter and MK84 AIR / (HD) the fourth quarter. However, all UCML/TTML tasked munitions will be loaded/evaluated within a time-frame not to exceed 12 months. For those munitions where no training assets exist (CBU-97, CBU-105, M129, etc.) difference training will be provided prior to initial certification and during recurring academics training. Load crews in air defense/air superiority units perform proficiency loads quarterly using all committed munitions. For B-52 units, alternate loads between internal and external stations to the maximum extent possible.

12.14. (ANG) see **Table 12.4. (Added)** Example of a MPRL Schedule.

12.14.1. Proficiency Review Period. Immediately following initial certification, crews will load one third of all munitions monthly for a minimum of 3 months, after which SLC (with LSC approval) may recommend placing them in the normal bi-monthly evaluation cycle (not applicable for short tour locations).

12.14.1. **(ANG)** N/A to the ANG.

12.14.2. Load nuclear PMs monthly. Only one type of munition within a MFG requires loading each month. Nuclear SMs (certified crews), to include single missile, single bomb and, payload exchange (for bombers), are loaded/accomplished at least quarterly. For B-52 OPLAN 8044, internal, external, and integrated loads will be rotated monthly within each quarter. Launcher will include post-load checks (MIT/BIT).

12.14.3. MHU-196/204 mate/de-mate operations with live or inert munitions require initial certification and will be evaluated semi-annually.

12.14.4. Load crew integrity should be used to the maximum extent possible. Schedule crew members into load training for MPRLs. In the event a crew member is coded out and unavailable to load, every effort should be made to schedule the remaining crew members with another person. Load training gives our personnel practical training required to maintain a high state of readiness.

12.14.4.1. (ARC Only) Certified Load Crew Chiefs may perform MPRLs in any position provided they load under the supervision of LSC/Lead Crew using inert training munitions only. This stipulation applies at home station only. No MPRL credit will be given to those individuals during evaluations unless loading in the position for which they are certified. This deviation from policy

enables units the flexibility to evaluate remaining crew members when a member may not be available to form a full crew and will only be used as a necessity.

12.14.5. (B-52) Except for integrated loads the CSRL or pylon configured with AGM-86C may be used in lieu of nuclear PM for one month of each quarter. Those crews certified for single missile loading/unloading will alternate between internal, external, AGM-129, AGM-86B and AGM-86C.

12.15. Load Crew Semi-Annual Evaluations. The LSC evaluates each load crew once semi-annually on at least one of the unit PMs (all unit PMs will be used on a rotating basis). In units with no PM listed on their UCML/TTML, the LSC will rotate SM/LM to satisfy semi-annual evaluations. Load crew integrity will be maintained to the maximum extent possible. Decertify load crews failing to accomplish semi-annual evaluations on all munitions unless exempted IAW provisions in this chapter. SAE's are not required for lead crews. If an integrated load is accomplished as the SAE (e.g., AIM-9, 120, 7), document the SAE accordingly. There is no need to document both SAE and MPRL.

NOTE: (ARC Only) CSO (A-10, F-15, F-16) and DLO (bombers only) procedures may be used to fulfill these requirements provided the entire load is evaluated. Certified Load Crew Chiefs may perform SAEs in any position provided they load under the supervision of LSC/Lead Crew using inert training munitions only. This stipulation applies at home station only. No SAE credit will be given to those individuals during evaluations unless loading in the position for which they are certified. This deviation from policy enables units the flexibility to evaluate remaining crew members when a member may not be available to form a full crew and will only be used as a necessity.

12.15.1. Evaluation Criteria. All certified load crews perform proficiency loads monitored by a lead crew or the LSC. The LSC monitors lead crew proficiency loads. The WWM or WS superintendent will monitor LSC proficiency loads. Post-load inspections do not meet these proficiency requirements. The following criteria apply to initial certification, MPRLs and SAEs:

12.15.1. **(ANG)** The WWM, designated individual, or WS superintendent may monitor LSC proficiency loads.

12.15.1.1. Exceeded time standard results in a failed rating for the load crew chief.

12.15.1.2. A safety or reliability error results in a failed rating for the individual. A failure in this category due to a single sub-task error need not result in complete retraining/recertification for the loading task. At the discretion of the evaluator, sub-task retraining or thorough critique may be used to satisfy retraining/recertification requirements.

12.15.1.2.1. Safety Error: A violation of safety publications, TO warnings, etc., or an unsafe act that could reasonably lead to personal injury or death.

12.15.1.2.2. Reliability Error: A violation of TO requirements that could reasonably lead to damage/premature failure of equipment or prevent safe reliable operation of a weapons system or release of a weapon.

12.15.1.3. A demonstrated lack of technical proficiency by an individual load crew member can result in a failed rating. If the time standard is exceeded for this reason, the load crew chief does not need to be decertified.

12.15.1.4. For integrated loads, the evaluator may elect decertification on any one or all munitions loaded. When the same rating is not applied to all munitions loaded during an integrated load, the load crew records will be annotated accordingly.

12.15.1.5. Intervention by an evaluator during loading to prevent injury to personnel or damage to equipment may result in a failed rating.

12.15.1.6. MPRL credit may be given to load crews or personnel performing DLOs or other loading operations on the flightline during exercises, extended deployments or daily operations provided complete loads that satisfy MPRL requirements are performed and evaluated from start to finish. The required number of evaluators, equipment and all other requirements must be met to receive credit for these type evaluations. MPRL credit during flightline evaluations is only authorized when loading lives, dummy air training missiles (DATM), or D-2 type inert munitions.

12.15.1.7. More than three errors per crew member results in a failed rating for the individual.

12.16. Documenting Load Crew Training. Manage load crew certification and qualification, semi-annual evaluations and MPRLs by means of the WLCMP or equivalent. All decertification and subsequent recertification actions will be documented.

12.16.1. The LSC keeps load crew records. Include the following documents as a minimum: AF IMT 2435 (or equivalent) (front and back) for each crew member and AF IMT 2419 recording the most current semi-annual evaluation. AF IMT 2419's must be maintained for all loads. Maintain either electronic or paper copies of AF IMT 2419s for a minimum of 1 year.

12.16.2. If the UCML/TTML contains more than one item from MFG table, the MFG is entered. MFGs are listed as a single entry using the primary tasked item of the group in the title. For example, MK-82 MFG is entered when the MK-82 is the primary tasked item from its group. Separate entries are made for postload checks (if applicable). After initial training on applicable items within the MFG, treat the MFG as a single item and document certification using one line entry in block 7 of the AF IMT 2435 or locally devised form.

12.16.3. Dates are entered upon certification and DLO qualification. Entries in date and certification fields on AF IMT 2435, (or equivalent), are deleted for other qualification items.

12.16.4. Enter one of the following codes in the month column as applicable. If required loads are not completed and provisions of this chapter apply, use one of the following: temporary duty (TD), emergency leave (LV), incapacitated (ED), exercises/contingency (EX), or weather (WX). Code outs are not to be abused or used as a substitute for ineffective scheduling (WWM has final decision authority on coding disputes). The letter "E" is placed after the date for the semi-annual evaluation regardless of rating.

12.16.5. Route AF IMT 2419 after semi-annual evaluations to the weapons section NCOIC, MX SUPT/Operations Officer, WWM, and LSC.

12.16.6. Send printouts from the Load Crew Management database with the crew to TDY locations if loading tasks are to be performed. The following statement is added after the last entry on each product: "AF IMT 2435 reviewed; the member is certified/qualified on the items listed on this product." This statement is followed by the signature and date of a WS certifying official.

12.16.7. Academic and qualification training conducted by the WS is normally documented in a MIS, however the WLCMP (or equivalent) may be used for this purpose.

12.17. Transient Aircraft Responsibilities. Arming, de-arming, and munitions loading/unloading will only be accomplished on transient aircraft to facilitate required maintenance actions. In such cases, these

operations on transient aircraft may be performed by any weapons load crew certified/qualified on the munition and aircraft. The MXG/CC may direct the LSC or a lead crew to arm, de-arm, and unload an aircraft on which they are not certified/qualified, if appropriate technical data and support equipment is available. In such cases, the aircrew will be available for consultations on aircraft to verify flight worthiness of load configuration, and to perform cockpit portions of required functional/stray voltage checks. If these cannot be met, request help from owning unit(s)/higher headquarters. Local procedures must be developed to control impulse cartridges removed from transient aircraft.

12.18. Dual Loading Operations (DLO). DLO is only applicable to bomber units (MAJCOM approval required for fighter units). DLOs are the primary method for rapid munitions loading/unloading on bomber aircraft and are authorized provided the following conditions are met:

12.18. (ANG) DLO are not authorized in the ANG. All subparagraphs of **12.18.** are also N/A to the ANG.

12.18.1. Both internal and external (B-52) or dual bay (B-1, B-2) loading is required.

12.18.2. Load crew chiefs: Designate one crew chief to be in charge of the entire operation.

12.18.2.1. One will check the aircraft AFTO Form/IMT 781 and verify aircraft and armament system status prior to start of the load and brief status during the pre-task briefing.

12.18.2.2. Both are present during the pre-task briefing.

12.18.2.3. Verify all previously loaded munitions are in pre-maintenance status.

12.18.2.4. One will verify cockpit switches are properly positioned during aircraft preparation.

12.18.2.5. Both will check off each step as they are accomplished in their applicable loading checklist.

12.18.3. Load crews conduct independent loading operations from single or separate trailers. ***NOTE:*** Loading and fueling operations must not be performed simultaneously due to the hazard of the aircraft settling.

12.18.4. Post-load power-on checks are not accomplished until all munitions are loaded and bay connections accomplished.

12.18.5. Load crew chiefs ensure that the conventional system switches/controls are properly positioned and verify the conventional munitions status and inventory during post-loading inspection.

12.18.6. Initial DLO qualification consists of academic and practical training. Recurring training only consists of academic training.

12.19. Weapons Task Qualification. A weapons task qualification is a munitions related task that does not require certification. Personnel receive initial and recurring academic and annual practical training for these tasks. Recurring practical training and task qualification should be conducted during normal flightline operations to the maximum extent. Training is provided, documented and tracked by the WS.

12.19.1. Checklist Qualification: Indicates that the person with the checklist is trained, knowledgeable and in-charge of the overall operation or task.

12.19.2. Full scale inert/training munitions (e.g., BDU-50/TGM-65/CATM-120). If load crew personnel are certified on a munition, they are considered qualified (by position certified, except #1 position) on its inert version. In the event the load crew member is not certified on an SM or LM, then load

crew personnel require annual training on the inert/training version and it will also be tracked as a qualification. If crew personnel are not certified on the live version and the inert/training munition is a stand alone SM or LM, then load crew personnel require annual training on the inert/training version and it will also be tracked as a qualification.

12.19.3. Two or more qualified personnel in AFSC 2W1X1 may perform the following tasks:

12.19.3.1. Practice Bombs: load and unload BDU-33, BDU-48 and MK-106.

12.19.3.2. Load and unload ammunition in internal and external gun systems (the GAU-8 requires three people). Exception, personnel are authorized to unload (only) ammunition in the GAU-2, GAU-18 or M240 caliber machine guns during Hot Gun emergency or gun jams that require safing prior to maintenance actions.

12.19.3.3. Load and unload single 2.75 rockets.

12.19.4. Two or more qualified personnel (who must have also attended weapons academics) in any aircraft maintenance AFSC may perform the following tasks:

12.19.4. **(ANG)** For rescue units, these can also be a helicopter engineer or an aerial gunner.

12.19.4.1. Install and remove impulse cartridges if the task is not accomplished as a part of a loading operation.

12.19.4.2. (Bomber aircraft) Install and remove practice bomb adapter rack and cluster rack adapters.

12.19.4.3. Pyrotechnics: Load/unload.

12.19.4.4. Install and remove chaff and flare magazines and other defensive countermeasures as required.

12.19.4.5. Perform portions of the conventional loading checklist which pertain to delayed-flight or alert, and IPL/safing procedures.

12.19.4.6. Munitions/Missile Isolation: perform procedures to FOM on non-nuclear loaded aircraft only.

12.19.4.7. Install and remove captive AIM-9 missiles, Acceleration Monitor Assemblies (AMA) and Airborne Instrumentation System (AIS) pods. Academics is not required for AMA and AIS pods. (Minimum crew size per TO directives) (personnel shall be trained/qualified on the task). AMA and AIS qualification training are a one time trained item that will be entered on a AF IMT 797.

12.19.4.7. **(ANG)** Training shall be tracked in MIS or AF IMT 797.

12.19.4.8. (ANG alert facilities only) Install and remove Argon (TMU-72 coolant tank) in AIM/CATM-9.

12.19.4.9. **(Added-ANG)** Install, remove and checkout all helicopter gun systems.

12.19.5. A weapons load crew chief does not require qualification to perform tasks on which they are certified to load in respect to parent munitions. Other load crew members must be qualified to perform any portion of these tasks for which they have not been certified. To clarify, the load crew chief may perform in any crew member position. The two and three members can only perform those positions for which they are certified or qualified in. (Use of #1 to load in the #2 or #3 position must be kept to

a minimum.) Utilization of this practice will only be used when assigned manning dictates. Use of by position-qualified personnel will be the standard practice, until no other means are available within the unit.

12.19.6. **(Added-ANG)** Any three qualified crew members are permitted to load inert training versions of live munitions for which they are certified or qualified. During UTAs, overseas deployments, exercises or inspections all load crew members (2/3) must be qualified in a specific position.

12.20. Munitions Load Time Standards. All munitions listed in a single block comprise a MFG for the respective aircraft mission type. The load time standards apply to all operational users of the munitions or aircraft listed and are the minimum proficiency requirements for weapons load crews. Units may establish more restrictive standards for local use. Unless otherwise noted in **Table 12.1.** through **Table 12.3.**, the WS Superintendent shall determine and set load time standards for qualification items, for integrated loads (including nuclear, if tasked), and for loads performed wearing CWDE. All items require certification in accordance with this chapter, except as noted.

12.20.1. The standard load times, from the MFG **Table 12.1.**-**Table 12.3.**, are standard load times for initial and recurring "WLT" training and evaluations for the respective single store (including full munitions preparation) and installation of impulse cartridges, if required. Except for BRU-57, an additional 10 minutes is allowed for each added aircraft station check on fighter aircraft, if performed as part of an evaluated load. An additional 7 minutes is allowed for each like store added to fighter aircraft loads. Load times are additive when more than one type of munition is loaded on fighter aircraft. For example, if an F-16 is to be loaded with two AIM-9s and a MK-82, the load crew shall be allowed 20 minutes for the first AIM-9, 7 minutes for the second AIM-9 , and 25 minutes for the MK-82, for a total of 52 minutes. Loads may be accomplished without full munitions preparations, however, more restrictive time standards must be developed. Units should develop optimum time standards for integrated loads (including nuclear, if tasked).

Table 12.1. Fighter Aircraft Munitions Family Group and Load Training Time Standards (in minutes).

FAMILY GROUP	A/OA-10	F-15	F-16	F-117	F-22A	REMARKS
AIM-7		35				NOTE 15
AIM-9	20	20	20		30	NOTE 15
AIM-120		25	25		40	NOTE 15
AGM-65	25	25	25			NOTE 1,2,15
AGM-88			25			NOTE 15
AGM-130		35				NOTE 1,6,15
B-61		60	60			NOTE 3
CBU-87/89/97/ 103/104/105/107	25	25	25	35		NOTE 14,15
GBU-10/12	25	25	25	35		NOTE 1,15
GBU/EGBU-15		35				NOTE 1,6,15

FAMILY GROUP	A/OA-10	F-15	F-16	F-117	F-22A	REMARKS
GBU/EGBU-24/27		25	25	35		NOTE 1,15
GBU/EGBU-28		35				NOTE 1,15
MK-82/ MK-84/M129/ MK-82 AIR/ MK-84 AIR	25	25	25	35		NOTE 4,15
GBU-31/32/38		25	25	35	35	NOTE 15
GBU-39		25				NOTE 16
AGM-154/AGM-158		25	25			NOTE 1,14,15
QUALIFICATIONS	A/OA-10	F-15	F-16	F-117	F-22A	REMARKS
ALE-50			10			NOTE 5,15
SUU-25	30		20			NOTE 15
CHAFF/FLARES	20	10	10		15	NOTE 5
2.75” ROCKETS	35		25			NOTE 15
20MM/30MM	35	30	35		30	

Table 12.2. Bomber Aircraft Munitions Family Group and Load Training Time Standards (in minutes).

FAMILY GROUP	B-52 INT	B-52 EXT	B-1 INT	B-2 INT	REMARKS
AGM-86 / AGM-129	60	70			NOTE 7, 8, 11
B-61/B-83	60			45	NOTE 7, 8, 12
MK-82/M117/MK-62/ MK-63/M-129/GBU-38	25	40	40	40	NOTE 7,9, 10, 13
MK-84/BLU-109/ GBU-37/GBU-31/ AGM-154/AGM-158		40	40	40	NOTE 7,9, 10, 13
CBU-87/89/97/ 103/104/105/107	40	40	40	40	NOTE 7, 9, 10, 13
MK-56/MK -60/MK-65		40	40		NOTE 7, 9, 13
GBU/EGBU-10/12/28	35	40		50	NOTE 9, 13

Table 12.3. Unmanned Aerial Vehicle Munitions Family Group and Load Training Time Standards (in minutes).

FAMILY GROUP	MQ-1	MQ-9	REMARKS
AGM-114	20		
GBU-12		25	NOTE 1, 15
GBU-38		25	NOTE 1, 15

NOTES:

1. Add 15 minutes for each additional store or LAU-117.
2. Time is for one LAU-117. The time for loading one pre-loaded LAU-88 is 45 minutes; two LAU-88s, 60 minutes; single missile out of container, 35 minutes; for a single missile that must be transferred out of the container, 50 minutes; for three missiles out of the container, 60 minutes; for three missiles in their containers, 90 minutes.
3. Includes a short flight circuit test (FCT), such as F-16, 75060/W-11; or F-15E, A/E24T-199 check. When a long FCT is to be included in a loading operation, add the time standard listed in the applicable Dash-6 tech order to the time standard.
4. Add 5 minutes for each fuze extender used.
5. Time is for one module, magazine or ejector channel. Add 3 minutes per each additional module, magazine or ejector channel.
6. Add 15 minutes when accomplishing IR check.
7. Pre-load; time standard for preloaded B-1 CBM or CRL, and B-2 RLA is 45 minutes.
8. (B-52 postload for one missile): Add 50 minutes for AGM-86B or AGM-129, 60 minutes for AGM-86D, and 70 minutes for AGM-86C. Add 5 minutes for each additional missile. (B-2 postload): Add 20 minutes if accomplished as part of the load.
9. Add 3 minutes for each Non MIL STD 1760 capable store. ***EXCEPTION:*** Add 10 minutes per store for GBU/EGBU 10/12/28.
10. MIL STD 1760; Add 5 minutes per store. Exceptions: (B-52) Add an additional 5 minutes per store if MIL STD 1760 cable installation is required. (B-1, B-2, B-52) For AGM-158, first store is 50 minutes; add 20 minutes for each additional weapon. (B-2) LSC will develop a local time standard for the 8th weapon which requires rack removal during aircraft preparation, and rack installation on the weapon prior to load.
11. Time for single missile loading 70 minutes.
12. Time for single bomb is 40 minutes plus 40 minutes (B-52) or 20 minutes (B-2) if post-load check is performed as part of the load.
13. Add 20 minutes (B-2) or 45 minutes (B-1) if post-load checks are performed as part of the load.
14. (F-16) Add 35 minutes if BRU-57 functional check is performed as part of the load.
15. Add 10 minutes if functional check is to be accomplished as part of the load evaluation.

16. (EXCEPTION) Time standard for a preloaded carriage system is 20 minutes.

Table 12.4. (Added-ANG) Example of a MPRL Schedule.

1st Quarter. (Jan/Feb/Mar)	**2nd Quarter.** (Apr/May/Jun)	**3rd Quarter.** (Jul/Aug/Sep)	**4th Quarter.** (Oct/Nov/Dec)	**Certified MFGs:**
SAE = AIM 9		SAE = AGM65		AIM 9/7/120. MK 82/84/LD/HD. CBU 87/89/97/103. AGM 65. GBU 10/12/24
Load 1 = SAE. Load 2 = MRPL. (82HD/AGM 65). Load 3 = MPRL. CBU 87	Load 1 = MPRL. (AIM120/GBU 10)	Load 1 = SAE. Load 2 = MPRL. Load 3 = MPRL. CBU87	Load 1 = MPRL. (AIM9/GBU12)	

12.21. (Added-ANG) Air Defense Guidance: (Includes North American Aerospace Defense (NORAD) and Homeland Defense), as applicable.

12.21.1. **(Added-ANG)** Air Defense Units shall develop Force Generation (FG) plans, and munition employment plans to cover local and deployed operations. A munition employment plan may be included as an annex to the FG plans.

12.21.2. **(Added-ANG)** Air Defense Units MXG/CC or designated representative shall decide what partial loads may be accomplished on aircraft that are not fully loaded during FGs.

12.21.3. **(Added-ANG)** Air Defense Units during FG exercises, missile safety devices may be removed. Prior to an aircraft being placed on alert, units located on civilian airports may leave missile safety devices installed.

12.21.4. **(Added-ANG)** Air Defense Units generated aircraft, without aircrews assigned do not require missile safety devices to be removed. During FGs, qualified aircrews and ground crews may remove and install aircraft safety pins and missile safety devices.

12.21.5. **(Added-ANG)** Detached Alert Detachment (DAD) Training Responsibilities and Load Crew Requirements:

12.21.5.1. **(Added-ANG)** Certification and training of 2W1X1 load crew members shall be the same as home station standards except as noted.

12.21.5.2. **(Added-ANG)** Non-2W1X1 weapons load crew members may be assigned. Certification and training of non-2W1X1 augmentees must be accomplished as follows:

12.21.5.2.1. **(Added-ANG)** Augmentees must possess an AFSC 2A35X or 2A65X.

12.21.5.2.2. **(Added-ANG)** Augmentees must be a SSgt or higher and have a minimum five years MDS experience.

12.21.5.2.3. **(Added-ANG)** Augmentees must successfully complete CDC 2W151.

12.21.5.2.4. **(Added-ANG)** WWM must submit and receive an approved waiver prior to any formal certification. Waiver shall be coordinated through NGB/A4MW and approved from Headquarters Air Force Munitions, Missiles and Space Plans and Policies Division (HAF/A4MW) for non-2W loading augmentees upon completion of the CDC 2W151. Approved waivers shall be valid for a period not to exceed 12 months.

12.21.5.2.5. **(Added-ANG)** All of the above requirements must be satisfied prior to any academic or practical load crew training.

12.21.5.3. **(Added-ANG)** The most qualified 2W171 at the DAD shall be appointed as a member of the parent LSC, and initially certified/evaluated as a load crew chief by the WWM or designated official. The WWM shall determine the appropriate evaluation interval.

12.21.5.4. **(Added-ANG)** Initial certification of other crew members may be accomplished by the parent unit LSC/lead team member. 2W1X1 load crew members may be used to load in other positions at the discretion of the load crew chief. Dual certification is authorized.

12.21.5.5. **(Added-ANG)** Load crew training and certification must be documented and routed to the parent unit LSC and returned to the DAD for filing.

12.21.5.6. **(Added-ANG)** Alert aircraft launches and recoveries, to include arm/dearm of loaded munitions, may be performed by any task qualified aircraft maintenance personnel provided the following conditions are met:

12.21.5.6.1. **(Added-ANG)** Initial and recurring academics.

12.21.5.6.2. **(Added-ANG)** Initial and annual qualification training using the applicable Dash 100 checklist.

Chapter 13

MOBILITY AIRCRAFT DEFENSIVE SYSTEMS LOADING POLICY

13.1. Units required to install/remove chaff/flare on mobility aircraft (i.e., C-5, C-17, C-130, C-141), will establish a program to train and qualify personnel to perform these tasks IAW procedures outlined in this chapter. Units will also work with the local explosives safety officer and airfield management to develop an OI for handling chaff/flare-loaded aircraft IAW AFMAN 91-201 and AFI 91-202. As a minimum, the OI will include procedures for launch/recovery/parking of chaff/flare-loaded aircraft; chaff/flare storage and transportation; and partially ejected flares. The MXG/CC will appoint a 7/9-level individual with maintenance AFSC as the Weapons Task Qualification Manager (WTQM).

13.1. (ANG) At ANG wings assigned with both C-130 and HH-60 aircraft, the procedures located in this chapter shall apply to the C-130 mission. WWMs at combined A-10 and C-130 units shall determine applicability.

13.2. The WTQM and the Weapons Task Qualification Crew (WTQC) ensure chaff/flare loading operations are conducted safely, provide initial and recurring load training, serve as the focal point for all chaff/flare loading issues, and observe load operations during training. The WTQM and WTQC will not participate in load operations during training.

13.2.1. Weapons Task Qualification Manager. The WTQM develops and oversees the chaff/flare loading standardization program, sets standards, and develops local policies and procedures. The WTQM is typically a 2A573C, however, other flightline 2AX7X personnel may perform this function. Individuals appointed as the WTQM will be tracked on the SCR. The WTQM will:

13.2.1. **(ANG)** Any 2AX7X personnel may perform the WTQM function.

13.2.1.1. Receive initial and recurring load qualification training from a WTQC and maintain currency on chaff/flare loading tasks. Once trained, they will develop and administer the unit's chaff/flare load training program. ***NOTE:*** In the event a unit is initially tasked and has no qualified instructors, it will be necessary for the WTQM to become certified at a unit with qualified trainers. Once the WTQM is trained and qualified, they can train and qualify home station WTQC personnel.

13.2.1.1. **(ANG)** N/A to the ANG. The following only applies to the ANG. Receives initial and annual recurring load Qualification training, documented on AF IMT 2419, from qualified personnel from the 139 AW/AATTC, St. Joseph, Missouri for C-130's only, and maintains currency on chaff/flare loading task. For C-5's and C-17's coordinate training with AMC. Once trained, the WTQM develops and administers the unit's chaff/flare load training program.

13.2.1.2. Select, train, evaluate, and qualify a minimum of two personnel as the WTQC on safe and reliable munitions loading procedures. Evaluate and re-certify WTQC members semi-annually. WTQC members will be tracked on the SCR.

13.2.1.3. Ensure sufficient numbers of personnel are chaff/flare loading qualified to support the unit's mission. As a minimum, identify the number of qualified personnel, names and employee numbers, MDS qualification, Defensive Systems (DS) equipment type, qualification date, and date(s) recurring training is due.

13.2.1.3.1. Ensure a course code is loaded in the MIS to identify trained personnel and qualification status.

13.2.1.4. Establish time standards for initial and recurring loading tasks. The senior evaluator has the discretion to add to the time standard if inclement weather or equipment failure is the cause for exceeding the time standard. AMC lead wings will develop time standards for each MDS for qualification purposes.

13.2.1.5. Review and approve/disapprove AFTO IMTs 22 that pertain to chaff/flare loading technical data.

13.2.1.6. Develop a Task Assignment List (TAL) for use during training for all chaff/flare loading operations. AMC lead wings will develop MDS-specific TALs. A TAL is derived from applicable MDS munitions load checklist (33-1-2 series TO) and identifies the load crewmember's responsibilities by step.

13.2.1.7. Ensure chaff/flare loading CTKs are standardized to the maximum extent possible. Chaff/flare loading CTKs must include all tools and equipment necessary to support applicable MDSs and AME configurations.

13.2.1.8. Coordinate the scheduling of personnel for chaff/flare load training. The WTQM may delegate this duty to the WTQC.

13.2.1.9. Coordinate with MOF PS&D, or the RTC, if applicable, to obtain chaff/flare dispensing system-equipped aircraft for training purposes.

13.2.1.10. Ensure training magazines match the characteristics and "feel" of live magazines (e.g., weight, dimensions).

13.2.2. Weapons Task Qualification Crew . The WTQC assists the WTQM in managing the chaff/flare loading standardization program. The WTQC's primary purpose is to train and qualify personnel to load chaff/flares, but may also perform chaff/flare load duties. The lead WTQC member is typically a 7-level 2A5X3C technician. All training will be conducted using training munitions. The number of trained WTQC members should be based on current/anticipated workloads and their ability to maintain proficiency on all applicable MDSs. WTQC members are qualified by the WTQM. The WTQC members will:

13.2.2.1. Provide personnel with initial and recurring load qualification training. At least two WTQC members are required to conduct practical training. ***NOTE:*** The MXG/CC (or AMS/CC at en route locations) may grant approval for one person to serve as WTQC for the purpose of providing practical training and qualification on a case-by-case basis.

13.2.2.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Provide personnel with initial and recurring load qualification training.

13.2.2.2. Monitor personnel qualifications to ensure required academic and practical training is complete. Disqualify individuals if recurring requirements are not met.

13.2.2.3. Spot-check personnel to evaluate proficiency. Disqualify personnel who violate safety, technical data, and reliability procedures, or fail to demonstrate proficiency.

13.2.2.4. Develop/coordinate training schedules and provide to MOF PS&D for inclusion in the appropriate schedule (e.g., monthly, weekly). ***NOTE***: Enroute WTQMs forward training requirements to the unit training manager, who coordinates for ground training aircraft with the RTC.

13.2.2.4. **(ANG)** N/A to the ANG. The following only applies to the ANG: Develop and coordinate training schedules and provide them to PS&D for inclusion in the appropriate schedule (monthly, weekly, etc.). Provide personnel with initial and recurring load qualification training.

13.3. Training Requirements. Personnel are considered qualified upon successful completion of training provided by a qualified WTQC. Document initial load qualification training in the qualification status system and the individual's CFETP. Document recurring load qualification training in the qualification status system. Initial qualification will be conducted using training munitions. Live munitions may be used during annual qualification to maintain currency. Load qualification training consists of academic and practical training.

13.3. (ANG) Personnel are also considered qualified when training is provided by a qualified WTQM. Document initial load qualification training in the MIS and on an AF IMT 2419 or AF Form/IMT 797 placed in the individual's CFETP.

13.3.1. Academic and practical training must be provided during initial and recurring load qualification training.

13.3.1.1. Academic training is required before practical training is accomplished. Practical training must be completed within 14 days of satisfactorily completing academic training.

13.3.1.2. Practical training should duplicate operational conditions as closely as possible.

13.3.1.2.1. Recurring practical task qualification is administered at least annually.

13.3.1.2.2. As a minimum, practical training will include chaff/flare module serviceability criteria, actual chaff/flare loading, and operation of support equipment/AGE used during loading operations. ***NOTE:*** Weapons task qualification academic training may fulfill the requirements for explosive safety training if the requirements of AFI 91-202 are included.

13.3.1.2.2. **(ANG)** Work with Wing Safety or the local explosives safety officer and airfield management to develop an OI for handling chaff/flare-loaded aircraft IAW AFMAN 91-201, and AFI 91-202.

13.3.1.3. Academic training is administered every 15 months. As a minimum, academic training will include:

13.3.1.3.1. Familiarization with chaff/flare loading publications,, including AFI 36-2201, TO 11A-1-33, *Handling and Maintenance on Explosives Loaded Aircraft*, MAJCOM and local procedures.

13.3.1.3.2. Aircraft and munitions familiarization.

13.3.1.3.3. Safety, security, and emergency procedures.

13.3.1.3.4. Support, test, handling equipment , and special tools familiarization.

13.3.1.3.5. TALs and aircraft specific 33-1-2 series TOs must be available at the load-training site.

NOTE: Training course control documents will be coordinated annually through the wing weapons safety office and the MTF.

13.3.1.4. Personnel qualified on a specific task on a specific MDS are considered qualified to perform that task on all series of that MDS; however, the member must be familiar with differences within the MDS (e.g. cockpit switch locations). The WTQM or WTQC provide practical, on-aircraft training on these differences and document these qualifications for each dispensing system in the qualification status system.

13.3.1.4.1. (For ANG only) Non-2W1XX personnel will receive initial and recurring chaff/flare load qualification training from qualified personnel at the 139 AW/AATTC, St. Joseph, MO, and maintain currency. Document the training on AF IMT 2419. Once trained, the WTQM will develop and administer the unit's chaff/flare load training program.

13.4. Disqualifying Chaff/Flare Load Personnel. Document disqualification in the member's CFETP and the qualification status system.

13.4. (ANG) N/A to ANG. The following only applies to the ANG. Disqualifying Chaff/Flare Load Personnel. Document disqualification on an AF IMT 2419 or AF Form/IMT 797 placed with the member's CFETP and the MIS.

13.4.1. Although not all-inclusive, the following criteria constitute grounds for disqualifying personnel from chaff/flare loading duties:

13.4.1.1. Failing to complete recurring training.

13.4.1.2. Committing a safety or reliability error.

13.4.1.3. Lack of proficiency.

13.5. Transient Aircraft.

13.5.1. Apply the following when working transient aircraft:

13.5.1.1. Under NO circumstances will personnel attempt chaff/flare load operations without technical data.

13.5.1.2. If technical data is available, then qualified personnel may perform chaff/flare load operations.

13.5.1.3. If technical data is available but no one is qualified on the transient aircraft type, then the MXG/CC (or AMS/CC at en route locations) may authorize the WTQC or WTQM to de-arm and/or unload the aircraft. The WTQM will submit a written request to the MXG/CC (or AMS/CC at en route locations) identifying personnel selected to perform the task, aircraft type and (if applicable) number of aircraft to be dearmed and unloaded. Maintain approved requests for 90 days. ***NOTE:*** This is a temporary, one-time authorization to facilitate required maintenance when qualified personnel are not available.

13.6. Identification of Chaff/Flare-Loaded Aircraft. Verify chaff/flare load status of aircraft by checking AFTO IMTs 781A/C/H before performing any maintenance. Armament placards are not required on AMC aircraft. If an aircraft is loaded with chaff/flare, it will be safed IAW applicable technical data prior to performing any maintenance.

13.6.1. Before loading chaff/flares, review the AFTO Form/IMT 781C, **Avionics Configuration and Load Status Document**, for Defensive Systems (DS) inspection status. If chaff/flare is loaded on AMC aircraft, annotate G081 using program 9018. ***NOTE:*** Do not load chaff/flares if the aircraft is overdue a scheduled DS inspection.

13.7. AF IMT 2434 Requirements. Annotate the AF IMT 2434, on all aircraft configured and loaded to release or fire chaff/flares. Record the number and type of chaff/flares in the appropriate munitions column. A locally developed form may be used as long as it includes all AF IMT 2434 data elements.

13.7.1. The following procedures pertain to reconciliation of AF IMT 2434 (or equivalent) and reconciliation responsibilities:

13.7.1.1. Reconcile and verify expenditures during aircraft debrief. Maintenance and operations personnel shall develop procedures to capture expenditure data after each sortie where applicable.

13.7.1.2. Flightline expediter will ensure visual reconciliation is complete.

13.7.1.3. Homestation reconciliation data is provided to the unit MASO.

13.7.1.3. **(ANG)** Or munitions personnel.

13.7.1.4. For en route aircraft loaded at homestation, forward the AF IMT 2434 (or equivalent) reconciliation data through the Air Mobility Operations Group (AMOG) munitions POC to the applicable homestation MASO.

13.7.1.5. For aircraft loaded at en route units, forward the AF IMT 2434 (or equivalent) reconciliation data through the AMOG munitions POC to the applicable host unit.

13.8. AMC requires documenting DS software version data and aircraft inspections (e.g., 90-, 120-, or 180-day checks) on AFTO Form/IMT 781C. For software version data, enter the following information in the "Remarks" section for each reprogrammable system: type system; installed Operational Flight Program (OFP) version; and/or Mission Data File (MDF) version (e.g., ALE-47, OFP XXXX, MDF XXXX). If a system contains multiple OFPs, list all applicable versions (e.g., ALE-47, Programmer OFP XXXX, Sequencer OFP XXXX, MDF XXXX).

13.9. Chaff/Flare Build-up. Chaff/flare magazine build-up will only be accomplished by 2W0 personnel. ARC individuals may be task-qualified for chaff/flare build-up but must be supervised by a fully qualified 2W0. Units will only perform chaff/flare build-up in approved facilities/locations. Units must have an approved explosive site plan on file with the MAJCOM Weapons Safety prior to initiating chaff/flare buildup or storage operations.

13.9. (ANG) N/A to ANG. The following only applies to the ANG. Chaff/flare magazine build-up will only be accomplished by 2W0 personnel. Personnel in any maintenance AFSC may be tasked as safety observers to support the minimum requirement of two personnel during chaff/flare build-up. Units will only perform chaff/flare build-up in approved facilities/locations. Units must have an approved explosive site plan on file with the NGB Weapons Safety prior to initiating chaff/flare build-up or storage operations.

Chapter 14

ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS

Section 14A—CWO ONLY

14.1. Aircraft Battle Damage Repair (ABDR).

The ABDR program enhances wartime repair capability of AMUs. ABDR is an effective force multiplier contributing to wartime sortie production by assessing and repairing damaged aircraft rapidly to support flying operations. ABDR repairs will be accomplished during contingency or wartime only. However, system program managers may approve ABDR repairs during peacetime on a case-by-case basis.

14.1.1. Responsibilities:

14.1.1.1. HQ USAF/A4M provides overall policy and guidance for the USAF ABDR program.

14.1.1.2. HQ AFMC/A4 shall:

14.1.1.2.1. Assign a Combat Logistics Support Squadron (CLSS) Functional Manager (A4RE).

14.1.1.2.2. Assume management responsibility for the CLSS functional area, including the USAF ABDR and Expedition Distribution Sustainment Support (EDSS) Programs.

14.1.1.2.3. Publish an AFMC instruction to implement policy and guidance contained in this instruction.

14.1.1.2.4. Establish policy, guidance, procedures, and standards and provide oversight to CLSS operations.

14.1.1.2.5. Develop and manage ABDR policy for pre-positioning of tools, materiel kits and related SE.

14.1.1.2.6. Support development and publication of ABDR TOs for new weapon systems.

14.1.1.2.7. Maintain UTCs for AFMC CLSS organizations.

14.1.1.2.8. Plan for and develop capability to repair battle/crash damaged aircraft. Ensure plans include procedures to add additional repair capabilities into operating locations and provide aircraft evacuation alternatives.

14.1.1.2.9. Plan, program, and submit ABDR funding requests.

14.1.1.2.10. Establish an ABDR Technical Support Office to advocate and provide day-to-day management of tasks associated with development, implementation, maintenance, and support needed to enhance the USAF ABDR capability.

14.1.1.2.11. Support AFMC laboratories and SPO in determining technical requirements, repair techniques, repair materials, assessment aids and Research & Development (R&D) efforts.

14.1.1.2.12. Manage TO 1-1H-39, and the engineering handbook for ABDR engineers. Support initiatives to develop, publish, and maintain weapon system specific –39 TOs.

14.1.1.2.13. Manage ABDR training aircraft program.

14.1.1.3. AF Research Laboratory (AFRL) shall:

14.1.1.3.1. Assign an advanced technology development program manager to conduct ABDR R&D.

14.1.1.3.2. Support the ABDR program through R&D in new technology, repair techniques, and design guidance for new weapon systems.

14.1.1.3.3. Fund ABDR R&D efforts related to ABDR technology.

14.1.1.3.4. Provide technical support to AFMC/A4 and the ABDR Technical Support Office in the development and publication of ABDR TOs for new weapon systems.

14.1.1.3.5. Coordinate with other military services and allied countries on ABDR technology exchange programs.

14.1.1.4. MAJCOMs shall:

14.1.1.4.1. Establish a command focal point to work ABDR issues with AFMC.

14.1.1.4.2. In conjunction with AFMC, develop a command ABDR concept of operations (CONOPS) and ensure CONOPS covers unit plans for repair of battle/crash damaged aircraft during combat operations.

14.1.1.4.3. Address ABDR in mission need statements for new weapon systems that support or engage in combat operations.

14.1.1.4.4. Incorporate ABDR in command war planning documents.

14.1.1.4.5. Task AFMC CLSS UTCs to support OPLANs.

14.1.1.4.6. Develop plans for the reception and employment of AFMC ABDR teams at the onset of hostilities.

14.1.1.4.7. Formalize integration and beddown requirements in applicable base support plans (BSP).

14.1.1.4.8. USAFE and PACAF will store and maintain serviceability of AFMC owned and provided ABDR trailers located in WRM.

14.1.1.4.9. Provide field level weapon-system-specific tools (other than common hand tools) and equipment needed to repair battle-/crash damaged aircraft.

14.1.1.4.10. Provide technical support to the ABDR Technical Support Office when requested, for development and publication of ABDR TOs as well as for live fire or similar testing.

14.1.1.4.11. Ensure shelf life items listed in TO 1-1H-39 and weapon system specific –39 TOs are maintained at required levels to support ABDR requirements.

14.2. Aircraft and Equipment Decontamination.

14.2.1. Maintenance organizations must have the Ability To Survive and Operate (ATSO) in a Nuclear, Biological, or Chemical (NBC) environment and be capable of performing operational aircraft, vehicle, and SE decontamination. The following references in addition to MDS specific technical data should be utilized when developing unit decontamination programs: AFOSHSTD 91-100,

AFOSHSTD 91-501, TO 00-110A-1, *Guidelines for Identification and Handling of Aircraft and Material Contaminated with Radioactive Debris*; TO 00-20-1, TO 11C15-1-3, *Chemical Warfare Decontamination Detection and Disposal of Decontamination Agents*; TO 11D1-3-8-1, *Portable Power Driven Decontamination Apparatus*; AFMAN 32-4017, *Civil Engineer Readiness Technician's Manual for Nuclear, Biological, and Chemical Defense*; Air Force Handbook 32-4014, Vols. 1-4, *USAF Operations in a Chemical and Biological (CB) Warfare Environment, Planning and Analysis,* AFMAN 10-2602, *Nuclear, Biological, Chemical, and Conventional (NBCC) Defense Operations and Standards;* AFMAN 10-100, *Airman's Manual; and* AFI 10-2501*, Full Spectrum Threat Response.*

14.2.1.1. Tactics, Techniques, and Procedures (TTPs). TTPs provide maintenance activities flexible preparation and response options in a chemical, biological, radiological, nuclear and high-yield environment (CBRNE). The intent is to employ AF and locally-developed TTPs to maximize combat sortie operations while operating in a CBRNE IAW AFMAN 10-2602. TTPs provide sortie generation activities with fundamental counter-chemical warfare (CCW) tools to survive and fight.

14.3. Aircraft Grounding (Materiel Defect).

14.3.1. Definition. On occasion, units may discover conditions in multiple aircraft, engines, missiles, munitions, or related installed flight equipment of sufficient risk to personal injury or equipment damage that warrant grounding their fleet until the matter can be properly investigated and resolved.

14.3.1.1. This section does not apply to conditions which are clearly limited to the affected unit/base (e.g., lost tool, fluid contamination, aircraft/equipment damage of known origin, or other strictly local event). In these circumstances, the affected unit should follow Impoundment procedures specified in **Chapter 9.**

14.3.2. Initial Investigation. The owning MXG/CC or equivalent (e.g., Director of Maintenance) will direct QA to develop a local OTI IAW **Chapter 8** of this instruction. The OTI will require a sampling of affected aircraft, engines, missiles, or munitions to quickly assess the extent of the discrepancy within the wing fleet. If there is no repair or corrective action specified in technical data, QA will also submit a TO assistance request through the MAJCOM to the System Program Manager IAW TO 00-25-107. If initial sampling indicates the discrepancy is widespread and has the potential for personal injury and/or further equipment damage, the MXG/CC will discuss grounding the fleet with the OG/CC and WG/CC.

14.3.2.1. Documentation. Annotate local OTI requirements in equipment forms on a Red dash and grounding discrepancies on a Red "X" IAW TO 00-20-1.

14.3.3. Grounding Authority. The WG/CC has the authority to ground wing aircraft. If this decision is made, the wing will notify their MAJCOM functionals immediately by the most expeditious means (e.g., telephonic or e-mail) and follow up with MAJCOM, NAF, and HAF notification via the OPREP reporting system IAW AFI 10-206. This action will also formally alert other affected MAJCOMs and the System Program Manager. The OPREP report should include the reason for grounding; immediate actions taken to ensure the safety of personnel and equipment; impact to current operations; limiting factors (e.g., shortage of replacement parts); and expected timeframe to resume operations, if known.

14.3.3.1. The owning MAJCOM/A4 will determine if the risk of injury and/or damage is significant enough to ground all like-MDS aircraft in the command and recommend the lead command

and other operating commands take like action, respectively. The MAJCOM/A4 will coordinate with the A3 and consult with the System Program Manager, as required, prior to recommending the MAJCOM/CC make the decision to ground. Each MAJCOM will retain authority over its own fleet. Grounding decisions will be communicated via the OPREP reporting system.

14.3.3.1.1. Lead commands will accomplish the following actions: determine the impact of fleet grounding on operational capability worldwide; ensure other operating commands are informed of the fleetwide potential of the grounding discrepancy; notify the AEF Center if grounding affects the capability to contribute to joint or contingency operations; coordinate with AFMC and other commands to provide/obtain advice and direction, as necessary; and coordinate final grounding disposition with affected MAJCOM and AEF Commanders.

14.3.3.2. In certain cases, the System Program Manager, versus an operational unit, will discover a materiel condition with fleetwide impact and will recommend the operating MAJCOM(s) ground their fleets, or, in some instances direct immediate grounding IAW authority granted to the System Program Manager in TO 00-5-15.

14.3.3.3. In the case of a deployed unit that is not assigned/attached to a parent EMXG, AEG, or AEW, the grounding decision will revert to the first operational or maintenance USAF O-6 in the chain of command. Joint/Combined Force Air Component Commander (JFACC/CFACC) may override this decision if operational requirements outweigh the risk of continuing operations.

14.3.3.4. For non-deployed aircraft supporting contingency or higher headquarters tasked missions, the MAJCOM/CC or Joint Force Commander (JFC) may override a lower-level grounding decision if the operational need outweighs the risk of continuing operations.

14.3.3.5. Units will annotate the grounding condition/directive in the appropriate equipment forms using a Red "X" IAW TO 00-20-1.

14.3.4. Release from Grounding.

14.3.4.1. When a grounding condition requires System Program Manager involvement, the System Program Manager engineering function will investigate and recommend a course of action to the submitting MAJCOM, and lead MAJCOM, as appropriate. The MAJCOM/A4 will consult with the MAJCOM/CC and A3 and confirm conditions for the release from grounding via DMS message. If the corrective action is published as an immediate action TCTO or other certified repair data, individual aircraft compliance constitutes their return to service.

14.3.4.2. If the corrective action is issued as a routine TCTO or no corrective action is required for unaffected aircraft (i.e., after investigation, the situation does not pose imminent risk to the entire fleet), the MAJCOM/A4 will consult with the MAJCOM/CC and A3 and issue a DMS message to affected units/commands releasing the grounding order and specifying conditions for returning to flying operations.

14.3.4.3. Units will annotate release from grounding by clearing the Red "X" IAW System Program Manager provided TCTO/repair data and/or TO 00-20-1. If the corrective action is deferred to routine TCTO, next phase/isochronal, etc., clear the Red "X" IAW MAJCOM/A4 direction and enter the appropriate data for the deferred job.

14.3.4.4. MAJCOM/CC/A3/A4 and Wing Commanders should provide follow-up and final reporting for grounding and release status using the OPREP reporting system.

14.3.5. Stand-down for Operational Reasons. For these situations, refer to AFI 11-401, *Aviation Management*.

14.4. Aircraft Inlet/Intake/Exhaust Certification.

14.4.1. This program is applicable to B-1, B-2, F-4, F-15, F-16, F-22A and F-117 aircraft. MAJCOMs may direct this program to apply to other MDSs. Affected units will develop a comprehensive training program to ensure personnel are knowledgeable and proficient in the performance of intake/inlet/exhaust inspections. The number of individuals authorized to perform engine intake/inlet/exhaust inspections should be sufficient to meet mission requirements and production needs, and ensure competency through regular performance. Authorized AFSCs are specified in **Table 14.1.**; however, based on manning considerations, the MXG/CC may approve personnel in other AFSCs to perform inlet/exhaust inspections. ***NOTE:*** Do not confuse this certification program with ground maintenance FO inspections required by MDS technical data or the FOD section in this chapter.

14.4.1. **(ANG)** F-16/F-15 Aircraft Intake Inspections. An engine intake inspection is required between all sorties. If this can not be accomplished while aircraft are off station, and no qualified personnel are available to perform the inspection, the aircrew must document in the AFTO Form 781A, on a Red Dash, that the Preflight, Post Flight, or Thru Flight inspection is overdue, and the reason for non-accomplishment (no tech data, no qualified personnel, etc.). The MXG/CC shall determine in an OI/Supplement if intake inspections are required after each engine operation (i.e., taxi, INS alignment, sortie cancellation, abort, etc.).

14.4.2. Responsibilities and Management. The MTF/TD, in coordination with SMEs, will be responsible for development and management of the engine inlet/intake/exhaust inspection training program. Certifiers will be appointed by the MXG/CC and tracked on the SCR IAW **Table 14.1.** of this instruction.

14.4.3. Formal Training. MTF/TD in coordination with the SME will develop and conduct training. As a minimum, courses will include dangers associated with the intake/inlet/exhaust, care and handling of equipment, applicable technical data, FOD prevention, inspection criteria, fault isolation/damage assessment, techniques required to inspect engine intakes, inlets and exhausts and performance of an engine intake/inlet/exhaust inspection. Formal training and certification are mandatory prior to placement on the SCR.

14.4.3. **(ANG)** Training should be conducted on an uninstalled engine to better familiarize each student with engine forward section components.

14.4.3.1. Certified individuals who PCS to the same MDS and engine TMSM may by-pass a formal training course. These individuals must be re-certified prior to being added to the SCR. Carry over date of original class completion from previous documentation (certificate, training record, MIS printout).

14.4.4. Certification Criteria. Upon completion of formal training, individuals are task evaluated by a certifying official (an individual other than the instructor who administered the course), and placed on the SCR. Certifying officials will be appointed by the MXG/CC IAW **Table 14.1.** Units will limit the number of certifiers to a minimum to ensure standardized training and certification. Certifying officials will maintain proficiency in the same manner as other technicians; certifying officials will recertify each other.

14.4.4. **(ANG)** CETS will not be used to certify.

14.4.4.1. Annual Recertification. Each certified technician is required to be recertified annually by a certifying official. Recertification is accomplished by having the technician demonstrate they can perform the task(s). A QA PE may be used to satisfy this requirement if the QA evaluator is a certifying official.

14.4.4.1. **(ANG)** QA shall evaluate engine intake/exhaust inspections.

14.5. Aircraft Rapid/Hot Defueling (Tanker Aircraft).

14.5.1. Rapid/hot defueling is authorized for aircraft identified in TO 00-25-172. Rapid defueling reduces time and provides a means to rapidly off load fuel from aircraft at a higher flow rate than defueling systems and equipment are capable of providing. The MXG/CC designates a unit OPR for rapid/hot defueling training.

14.5.2. Rapid defueling operations are considered hot defueling operations whenever the provider/source aircraft has an engine running.

14.5.3. Rapid defueling presents hazards, which are not normally encountered in normal defueling operations. Precautions and instructions contained in TO 00-25-172 and applicable aircraft T.O.'s shall be followed when performing rapid/hot defuel operations.

14.5.3.1. All rapid defueling ground crew members will be qualified to perform rapid/hot defueling operations by a qualified trainer. Training will be documented in the individual's AF Form 623 on either the AF IMT 797 or CFETP. These individuals also require annual refresher training. Recurring training will be tracked in the applicable MIS. The rapid/hot defuel supervisor will be certified annually and tracked on the SCR.

14.5.4. During aircraft-to-aircraft ground transfer operations, and if the provider aircraft has at least one engine running, it is considered a hot/rapid defueling operation.

14.5.4.1. Aircraft to Aircraft refuel procedures will only be accomplished with prior MAJCOM approval.

14.6. Aircraft Structural Integrity Program (ASIP).

14.6.1. The aircraft structural integrity and flight loads data recording/individual aircraft tracking programs are established by applicable MDS specific TOs, and AFI 63-1001 and require coordinated action by a number of base level maintenance activities. An effective structural data collection program is essential to establish, assess and support inspections, maintenance activities, repairs and required modification/replacement actions.

14.6.2. The MXG/CC ensures an effective ASIP is established, appoints an officer or NCO as the unit ASIP project officer, and ensures effective measures are in place to capture ASIP data.

14.6.3. The MXG ASIP project officer will:

14.6.3.1. Act as OPR for a local ASIP OI. As a minimum, the OI will address:

14.6.3.1.1. Identification of maintenance activities responsible for changing and submitting storage media.

14.6.3.1.2. Appointment of ASIP monitors.

14.6.3.1.3. Procedures to support ASIP at deployed locations.

14.6.3.1.4. ASIP training requirements, method of documentation, and responsibility for providing training to technicians responsible for maintaining ASIP systems (e.g. changing tapes, submitting ASIP data sheets and aircrew debriefing).

14.6.3.2. Review ASIP correspondence and ensure requests for action receives prompt attention.

14.6.4. Coordinate ASIP supply support.

14.6.5. Maintenance activities responsible for maintaining ASIP systems/changing tapes will:

14.6.5.1. Change and submit tapes and/or download and submit data as required by specific MDS.

14.6.5.2. Maintain records of tape changes and submissions by aircraft tail number showing the recorder serial number, tape installation date, tape removal date, and date the tape was shipped.

14.6.5.3. Coordinate with appropriate Pro Super to CANN ASIP related parts.

14.6.5.4. Inform the MXG ASIP project officer of backordered parts with unacceptable delivery dates, difficulties in acquiring tapes, etc.

14.6.5.5. PS&D sections will ensure ASIP equipped aircraft are identified in weekly schedules (if required) and jacket files for these aircraft are clearly marked to show ASIP equipment is installed.

14.6.5.6. Debriefers will ensure appropriate ASIP documents are available at the debriefing location and ASIP data is gathered for each sortie flown by ASIP equipped aircraft.

14.6.6. Inspection Dock NCOIC Responsibilities (as applicable by MDS).

14.6.6.1. Establish JSTs with the required ASIP inspections. Ensure all ASIP inspections are complied with prior to closing out the inspection. Note: Classified ASIP will be managed with MAJCOM-approved procedures to ensure safeguarding of classified information.

14.6.7. PS&D will ensure ASIP inspections are loaded in the MIS and scheduled. Note: Classified ASIP will be managed with MAJCOM-approved procedures to ensure safeguarding of classified information.

NOTE: When required by lead MAJCOM, units may be asked to establish POCs for other related programs or data collection efforts. Refer to AFI 63-1401, *Aircraft Information Program*.

14.7. Reserved

14.8. Cannibalization Program

14.8.1. General: CANN actions may be necessary when a NMC condition will prevent the accomplishment of a mission and the required assets are not immediately available from supply. Prior to performing a CANN action, verify the required component cannot be sourced from LRS or back shop assets within the allotted time. When authorizing a CANN, the expenditure of man-hours and potential damage to equipment must be weighed against the expected benefit. High risk CANNs should not be performed unless priority aircraft are involved, or lack of ready equipment will impede mission accomplishment. See **Table 1.1.** ***NOTE***: Commanders should not necessarily view high CANN rates as a negative statistic that reflects poorly on the unit's capability or production effort. CANN rates accurately record the lack of asset availability to the field.

14.8.2. Definition: CANN is the authorized removal of a specific assembly, subassembly, or part from one weapon system, system, support system, or equipment end item for installation on another end item to satisfy an existing supply requisition and to meet priority mission requirements with an obligation to replace the removed item. Weapon system, support systems, or equipment include: aircraft, missiles, drones, UAV/UCAV, uninstalled engines, uninstalled engine modules, aircrew and/or launch crew training devices, C-E equipment, AGE, TMDE, serviceable uninstalled ECM pods, and guns. The three most common CANNs are: aircraft to aircraft, engine to aircraft, and aircraft to RSP kits.

14.8.3. Authorization & Control: Commanders, managers, and supervisors will closely control CANN actions. Although immediate benefits can be realized, the process results in excess expenditures of maintenance resources and may degrade readiness by exposing serviceable equipment to extra handling, assembly, disassembly or removal and reinstallation, and follow-on operational checks.

14.8.4. CANN authorities (CA) will be approved by the MXG/CC and tracked on the SCR. CA will be SNCOs and officers (or civilian equivalents). These personnel are normally Pro Supers. Personnel permitted to authorize CANN actions must be kept to a minimum. Those who are authorized to approve CANNs will not further delegate their responsibility. CA will inform MOC before executing on-equipment CANN actions.

14.8.5. Aircraft that have been cannibalized extensively may be identified as "CANN aircraft." Aircraft designated as CANN aircraft will have an assigned CANN manager, normally the DCC. This manager will ensure daily documentation actions (forms/tags/MIS) remain accurate and complete.

14.8.6. If an assembly is cannibalized to satisfy a condition caused by lack of bits and pieces (e.g., washers, nuts, and bolts), the assembly is counted as a CANN and the bits and pieces are considered transfer actions. Bits and pieces removed from an end item (without removing the assembly) for installation on another end item are considered individual CANN actions. ***NOTE:*** An item will not be cannibalized solely to attain a MC rate or any other maintenance metric.

14.8.7. When a required part cannot be delivered and installed on time, the CA may approve the CANN of parts before the initiation of CANN documentation (e.g., Red Ball maintenance). The CA will give this approval only after confirming the part is not readily available in LRS, launch trucks, forward supply points, or back shops. The CA will notify the appropriate supply activity to change the "mark-for" components in the document number. The CA will also ensure complete documentation is accomplished for each CANN action.

14.8.8. When TCIs, serially controlled items, items affecting compliance of a TCTO, or other components with inspection requirements that align to specific hourly, calendar, or event limits are considered for CANN, the CA will coordinate with the appropriate PS&D or EM to ensure adequate time remains on the item to justify the CANN and to ensure appropriate records are updated. If CANN occurs, the performing work center will update MIS and notify PS&D or EM.

14.8.9. Installed engines are not end items; engines are considered LRU just as a radar component, gun, seat, canopy, radio, multifunction display unit, etc. If a functional LRU is removed from one end item to put on another end item to fill a "hole" which was caused by a supply requisition, (the requisition could be against the LRU), then this will be considered a CANN.

14.8.10. Restrictions:

14.8.10.1. CANN actions involving parts from ABDR aircraft, AF Museum Aircraft, Maintenance Training Devices (MTDs), GITA (possession purpose code TX), or DRMO will not be accomplished without authorization from the SPO. If the part is approved for CANN, it must not be put into service until all necessary inspections (e.g., NDI, pressure checks, operational checks, TCTOs) have been accomplished using specific guidance from the IM to ensure proper serviceability. Parts shall not be removed from static display/AF Museum Aircraft except as authorized by AFI 84-103. Aircraft possessed by AFMC in depot maintenance will not be cannibalized without first obtaining approval from the applicable AFMC single manager.

14.8.10.2. An aircraft that has been extensively cannibalized will not be launched on an overseas or cross-country sortie/mission on the first flight following CANN status without MXG/CC approval.

14.8.11. Documentation and Reporting: Specific documentation procedures for CANNs are prescribed in 00-20 series TOs. All CANNs will be properly recorded in the MIS and AFTO series forms. Aircraft recovering from CANN status will be carefully screened and all maintenance documentation thoroughly reviewed before being scheduled for a sortie/mission. The review will ensure all operational checks have been completed and will determine if an OCF or FCF is required.

14.9. Combat Sortie Generation. Combat sortie generation is a process by which mission capable aircraft are generated in a minimum amount of time, during peacetime or wartime, through separate 2AXXX and 2WXXX tasks or by Concurrent Servicing Operations (CSO). Combat sortie generation may include fueling, munitions/ammunition loading/unloading, aircraft reconfiguration, Dash 6 TO inspections, and other servicing requirements, IAW applicable MDS TOs, Technical Order Data (TOD), IETM, TO 11A-1-33, TO 00-25-172 and other applicable directives. In conjunction with applicable TOs/TODs, CAF units will use the procedures in this chapter to accomplish combat sortie generation. Procedures can be compressed through pre-positioning resources and concurrent performance of tasks. Manpower for combat sortie generation may be increased through cross utilization of skills, augmentation of key functions, and pre-positioning indirect support resources in sortie generation areas. Munitions loading will be accomplished using complete MDS specific 1X-XXX-33-1-2/-2-1 TO procedures. Aircraft thru-flight inspections will be accomplished in their entirety IAW MDS-specific, 1X-XXX-6 TO work cards/TODs. When authorized by MAJCOM, abbreviated AFMC approved Dash 6 TO quick turn workcards may be used.

14.9. (ANG) (Not applicable to ANG AETC-gained units.) Abbreviated AFMC-approved Dash 6 TO quick turn work cards may be used.

14.9.1. Generation procedures should be built around the operational environment, mission, and expected operations for which a unit is designated to deploy or support during contingencies or taskings. These procedures may be used during actual contingencies, scheduled exercises, and daily flying operations. Combat sortie generation includes the entire regeneration cycle for a mission capable aircraft to include any or all of the following: servicing, inspection, munitions/ammunition loading/unloading, aircraft reconfiguration, and fueling. When authorized by MAJCOM Munitions and Aircraft maintenance divisions, DLOs, described in **Chapter 12** of this instruction, may be used to regenerate aircraft.

14.9.2. Concurrent Servicing Operations (CSO): The simultaneous fueling, and munitions/ammunition loading/unloading, aircraft reconfiguration, aircraft Dash 6 TO inspections, and other aircraft servicing such as oil, nitrogen, and hydraulic fluid. Oxygen servicing will not be accomplished during

fuel servicing. CSOs provide units operational flexibility in managing resources and a rapid means of generating mission ready aircraft.

14.9.2.1. CSOs requiring a Concurrent Servicing Supervisor (CSS). The key function requiring the CSS is refueling/defueling and only applies to Fighter/Attack aircraft IAW TO 00-25-172 Chapter 6.

14.9.2.1.1. Simultaneous fuel servicing with aircraft -6 and -6WC inspections.

14.9.2.1.2. Simultaneous fuel servicing with munitions/ammunition loading/unloading.

14.9.2.1.3. Simultaneous fuel servicing with aircraft reconfiguration.

14.9.2.1.4. Simultaneous fuel servicing and other aircraft servicing such as oil, nitrogen, and hydraulic fluid.

14.9.2.1.5. Simultaneous fuel servicing with loading/unloading of munitions/ammunition, aircraft reconfiguration, aircraft Dash 6 TO inspections, and other aircraft servicing such as oil, nitrogen, and hydraulic fluid. ***NOTE*:** Electrical "power-on" portions of dash 6 inspections are not authorized during concurrent munitions loading/unloading and fuel servicing operations. Power-on portions of Dash 6 inspections are accomplished prior to or upon completion of the concurrent munitions loading/unloading and fuel servicing operation.

14.9.2.2. CSOs NOT requiring a Concurrent Servicing Supervisor (CSS). When no refuel/defuel operations are taking place concurrent with any other maintenance/munitions tasks, a CSS is not required.

14.9.2.2.1. Any or all simultaneous munitions/ammunition loading/unloading with aircraft -6 and -6WC TO inspections, aircraft reconfiguration, and other aircraft servicing such as oil, nitrogen, and hydraulic fluid. ***NOTE:*** When a CSS is not required, the weapons load crew chief is responsible for and controls all actions concerning the aircraft during loading and unloading operations. See **Chapter 4** for detailed responsibilities.

14.9.3. MAJCOMs will supplement this AFI with specific requirements for 2AXXX and 2WXXX training and qualification, and CSS training and certification.

14.9.3. **(ANG)** Specific requirements for 2AXXX and 2WXXX training and qualification, and CSS training and certification are identified in Paragraph **14.9.7.11. (Added)**.

14.9.4. Manpower. Commanders may train additional aircraft or munitions maintenance personnel to assist in direct sortie generation production activities.

14.9.4.1. Cross-utilization of skilled personnel may be employed to ensure maximum productivity.

14.9.5. Combat Sortie Generation Personnel and Responsibilities.

14.9.5.1. The MXG/CC:

14.9.5.1.1. Coordinates training for augmentees from base support agencies to support combat sortie generation.

14.9.5.1.2. Conducts combat sortie generation proficiency-training exercises at least semiannually. (WG/CCs in ARC and AETC shall determine frequency). Coordinates fueling and

munitions requirements with the OG/CC prior to each scheduled combat sortie generation exercise.

14.9.5.1.3. May elect to arm/de-arm munitions at designated areas other than the quick check/ EOR area.

14.9.5.2. Concurrent Servicing Supervisor (CSS) (Only for Fighter/Attack aircraft IAW TO 00-25-172 Chapter 6):

14.9.5.2.1. The on-site supervisor responsible for all aspects of fuel servicing, munitions/ ammunition loading/unloading, aircraft reconfiguration, aircraft Dash 6 TO inspections, and other aircraft servicing being performed during CSOs. The key function requiring the CSS is refueling/defueling. When no refuel/defuel operations are taking place concurrent with any other maintenance/munitions tasks, a CSS is not required.

14.9.5.2.2. Must be at least a 7-skill level with a maintenance (2AXXX or 2WXXX) AFSC and at least 1 year of experience on the weapons system. The MXG/CC may waive the 1-year weapons system experience requirement at short-tour locations.

14.9.5.2.3. Is a safety supervisor who will supervise only one CSO at a time and will perform no other functions.

14.9.5.2.4. Will be designated on the SCR and shall receive training on safety requirements and potential hazards of CSOs. Will be certified as required by this instruction, MAJCOM, and local maintenance/training directives. Reference TO 11A-1-33 procedures for handling and maintenance of explosives-loaded aircraft. Reference TO 00-25-172 for flightline servicing operations and applicable AFMAN and AFOSHSTDs.

14.9.6. Combat sortie generation will be conducted in approved explosives and fuels sited areas.

14.9.7. Combat Sortie Generation Proficiency-Training Exercises. These exercises are mandatory training events to demonstrate the unit's capability to generate a continuous sustained flow of combat sorties.

14.9.7.1. Exercises will be conducted semi-annually (WG/CCs or equivalent in ARC or AETC will determine frequency) to ensure unit personnel proficiency.

14.9.7.2. Duration will be at least 3 days (WG/CCs or equivalent in ARC or AETC will determine duration).

14.9.7.3. The MXG and OG commanders will determine the number of aircraft scheduled to optimize aircrew and sortie generation training. War Mobilization Plan (WMP) -5 rates (or higher) should be used for planning combat sortie generation/regeneration.

14.9.7.4. Perform after-fire inspections on all stations that fired IAW Dash 6 TO requirements. Tools, technical data and expendables will be available at each aircraft for all simulated firings. Applicable task times will be simulated (determined locally) by the BPO crew before moving to another aircraft or task. Half-up/half-down loading procedures will be performed to show reconfiguration of aircraft after actual and simulated inspections are complete. All inspections (actual or simulated) will be documented.

14.9.7.5. Units will upload and download external fuel tanks during each exercise.

14.9.7.5. **(ANG)** N/A to the ANG. The following only applies to the ANG: Units may upload and download external fuel tanks during each exercise. However, the MXG/CC shall ensure personnel are proficient at uploading and downloading external fuel tanks.

14.9.7.6. Units will perform RWR and IFF Mode IV checks (as applicable).

14.9.7.7. During wing combat sortie generation exercises, aircraft turnaround time is crucial to meet sortie generation requirements. Units will develop expertise and demonstrate the capability to perform combat sortie generation. The following procedures will apply:

14.9.7.7.1. SCLs will be selected from known OPLAN requirements.

14.9.7.7.2. Personnel participating in local exercises should be rotated so all personnel are exposed to combat sortie generation in the training environment.

14.9.7.8. Conventional munitions operations will be exercised (e.g., breakout, buildup, delivery, loading, resupply).

14.9.7.9. Load a complete SCL (or half up/half down to simulate a full SCL) on each exercise aircraft generated/scheduled to fly a simulated combat sortie.

14.9.7.10. For each sortie flown, air-to-air missiles expended will be determined by shots taken, not to exceed the SCL configuration; all other external ordnance will be considered expended. Rockets will be expended at 50 percent. Ammunition in F-15 and F-16 aircraft will be loaded as required, 50 percent of all A-10 sorties will require reloading as a minimum (this may be simulated by hooking-up all required ammunition loading equipment and taking the standard time).

14.9.7.10. **(ANG)** For exercise SCL configurations including more than one PM, the WWM may determine external ordnance expenditures of less than a full SCL based on load crew proficiency requirements. Coordinate exercise expenditures with the Operations Weapons and Tactics Officer, Mission Planning cell or exercise War Lord/Exercise HHQ. Ammunition in F-16 and F-15 aircraft shall be loaded as required; A-10 aircraft shall be loaded when 50 percent expenditures are reached unless mission requirements dictate reloading.

14.9.7.10.1. **(Added-ANG)** Actual expenditures must be tracked using AF IMT 2434 or a locally developed form. The Operations Group shall develop a system to track and report all simulated expenditures i.e., missile shots, bomb drops (by type), chaff/flare dispensed for each sortie flown. At the end of the flying day the form must be forwarded to the Munitions Element for reporting.

14.9.7.11. **(Added-ANG)** Training and Documentation Requirements.

14.9.7.11.1. **(Added-ANG)** Aircraft maintenance personnel will receive training in the hazards and risks of concurrent servicing.

14.9.7.11.2. **(Added-ANG)** Maintenance supervisors will schedule coordinated training to allow maintenance personnel to practice concurrent servicing. Supervisors involved in command and control positions during sortie generation exercises must receive training in their duties and responsibilities.

14.9.7.11.3. **(Added-ANG)** APG trainers shall be responsible for the training and documentation of all 2AXXX aircraft maintenance personnel.

14.9.7.11.4. **(Added-ANG)** WSS shall be responsible for the training and documentation of all assigned weapons load crews IAW **Chapter 12**.

14.9.7.11.5. **(Added-ANG)** Supervisors must ensure training is documented in MIS.

14.10. Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) Program.

14.10.1. General. The CDDAR program applies to all USAF host and tenant organizations and is designed to recover crashed/damaged or disabled aircraft in a minimum time period consistent with the following consideration(s):

14.10.1.1. Requirement to open the runway for operational use.

14.10.1.2. Prevention of secondary damage to the aircraft.

14.10.1.3. Preservation of evidence for mishap or accident investigations IAW AFI 91-202 and AFI 91-204.

14.10.2. Recovery Program Responsibilities. The host wing commander is responsible for implementing policy, plans and agreements to ensure compliance with established recovery programs. All units (host and tenant) shall publish a unit instruction containing specific responsibilities and procedures for CDDAR. The MXG/CC is responsible for establishing a CDDAR capability. The following references as a minimum, are used in developing the wing instruction: Base OPLAN 32-1, AFMAN 32-4004, MAJCOM supplement to this instruction, applicable 48- and 91-Series AFOSHSTDs, TO 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information*, AFI 21-103, and aircraft specific Dash 2 and Dash 3 series TOs. As a minimum, the wing instruction must address the following:

14.10.2.1. Responsibilities of each base organization for CDDAR responses. Address responsibilities for transient aircraft.

14.10.2.2. Personnel required for CDDAR operations. Identify specific positions on the CDDAR team(s) (e.g., CDDAR team chief, special vehicle operator, team members).

14.10.2.3. Equipment, tools, vehicles and other supplies/consumables required for CDDAR operations.

14.10.2.3. **(ANG)** Accomplish and document inspections of equipment IAW applicable directives, or at least semiannually if no directive is available. Weatherproof storage for equipment, tools and other supplies to ensure equipment serviceability and accessibility.

14.10.2.4. PPE required to perform recovery of an aircraft containing composite/hazardous materials as established by technical data and Base Bio-Environmental Engineering (BEE) office.

14.10.2.5. CDDAR support for GSUs as required.

14.10.2.6. Support for CDDAR after normal duty hours. Immediate response by the CDDAR crew is required during normal operating periods or duty hours. Units must develop emergency recall or mobilization rosters to identify and notify required recovery team members outside of normal operating hours.

14.10.2.7. Host/Tenant Base CDDAR Responsibilities.

14.10.2.7.1. Each host base has overall responsibility for recovery of host/tenant crashed /disabled aircraft**.** Since tenant units are responsible for the condition/repair of their aircraft, tenant

units must be actively involved in training to assist host base recovery operations during real world responses. Technical expertise, technical data, MDS-unique tools/special equipment, and airframe/system familiarization are the primary contributions tenant units make to the host CDDAR program.

14.10.2.7.2. Host units provide recovery support for all tenant units as established in SA. Ensure CDDAR procedures are coordinated with the Fire Department, Safety, Civil Engineering (CE), Readiness, EOD, Security, BEE, Airfield Manager, and other on-/off-base agencies as applicable.

14.10.2.7.3. Host units must ensure they are capable to provide and support recovery operations for all base assigned aircraft, to include tenant aircraft. Tenant units are required to participate in host training exercises and equipment inventories.

14.10.2.7.4. Tenant units must coordinate with the host for CDDAR support, training, exercises, and equipment inventories. Develop SA to document requirements.

14.10.2.7.5. Host and tenant commanders are responsible for ensuring sufficient equipment is available for mobility/deployed operations, as authorized in the applicable AS.

14.10.3. Vehicle/Equipment Requirements.

14.10.3.1. The MXG/CC determines unit vehicle/equipment requirements, within the limits provided by AS(s). Units must identify vehicles and recovery SE in a local directive to ensure 24-hour availability. Vehicle/SE requirements may include:

14.10.3.2. General purpose radio-equipped truck.

14.10.3.3. Suitable trailer and tow vehicle (for storage and transportation of recovery equipment).

14.10.3.4. All Terrain Forklift.

14.10.3.5. Bulldozer.

14.10.3.6. Aircraft tow vehicle.

14.10.3.7. Crane (e.g., 20-ton, 50-ton, as applicable).

14.10.3.8. 40 ft. flatbed semi trailer and tractor.

14.10.3.9. Light carts.

14.10.3.10. Tow bars.

14.10.3.11. Air Bags.

14.10.3.12. Slings, belly bands, snatch cables, chains, etc.

14.10.3.13. Aircraft jacks.

NOTE: When base transportation cannot support heavy equipment requirements such as cranes and/or semi tractors and trailers, units must establish lease agreement(s) with local suppliers. IAW lease procedures established in AFI 24-302" at the end of the sentence

14.10.4. Inspection and Inventory. Inspect all recovery equipment to include air bags, manifolds, jacks, slings, shoring, etc., for serviceability before and after each exercise and use. Periodic equipment inspections must be accomplished IAW intervals established in TOs or annually, as a minimum.

Perform operational checks IAW applicable directives during exercises and/or inventory reviews. Document inspections and maintenance in MIS, on AFTO IMTs 244 or on MAJCOM approved form.

14.10.5. MXG CDDAR Team Chief will:

14.10.5.1. Be a SNCO or civilian equivalent (MXG/CC may waive grade requirement), approved by the MXG/CC, and tracked on the SCR. MXS Maintenance Flight is typically the OPR for the unit CDDAR instruction. When developing the maintenance instruction, consider special tasks such as identifying and handling of classified equipment, aircrew life support or egress systems specific tasks, etc.

14.10.5.2. Develop in conjunction with the MTF course control documents for CDDAR training**.**

14.10.5.3. Review support agreements and base disaster response plans annually. Provide inputs for changes as required.

14.10.5.4. Ensure CDDAR procedures are coordinated with the Fire Department, Safety, CE, Readiness, EOD, Security Police, BEE, Airfield Manager, and on/off base agencies (as required) reference AFMAN 32-4004.

14.10.5.5. Inform the MXG/CC in writing of equipment shortages/serviceability that precludes effective CDDAR support.

14.10.5.6. Ensure sufficient personnel/teams are trained to support CDDAR operations. This includes:

14.10.5.6.1. Basic equipment operation (e.g., light carts, generators).

14.10.5.6.2. Familiarization with/training on any unique characteristics/hazards/materials for assigned aircraft (e.g., F-16 EPU hydrazine, C-130 ballast depleted uranium, aircraft composite materials, etc.) and document training.

14.10.5.6.3. Availability and proper use of PPE as determined by technical data and the base BEE.

14.10.5.7. Ensure special qualifications for personnel are identified and documented. Identify individual team member qualifications for specific equipment operations (e.g., towing, jacking, support equipment, special purpose vehicle).

14.10.5.8. Ensure adequate tools and SE for recovery (i.e., bags, slings, manifolds, tow bars, dunnage/shoring, etc.) is serviceable and available. Maintain a list of all CDDAR tools and equipment.

14.10.5.9. Conduct/participate in annual training exercises. Coordinate with the base readiness office before exercises.

14.10.5.10. Coordinate with unit QA W&B manager when weight and center of gravity (CG) conditions are unknown.

14.10.6. Recovery Team Qualifications:

14.10.6.1. All team members must be qualified in basic CDDAR operations.

14.10.6.2. All qualifications are recorded in CFETP, AF IMT 797, or MIS as applicable.

14.10.7. Training Requirements:

14.10.7.1. All team members must be trained in recovery procedures IAW this instruction, MDS specific technical data, other applicable AF and MAJCOM directives and unit-developed training guide.

14.10.7.2. All recovery team members must receive initial training comprised of both academic and hands on training/exercises and should include actual lifting of an aircraft. Aircraft lifting exercises may be accomplished by using a unit owned aircraft, utilizing training hulks, or participating with other organizations possessing training assets. Ensure all training is documented.

14.10.7.3. All recovery team members must receive annual training following initial training comprised of both academic and hands on training/exercises. Ensure all training is documented.

14.10.8. Environmental, Safety, and Health Hazards. The key for developing a safe and effective CDDAR program is communication and coordination. The CDDAR OPR must ensure the BEE is consulted and directly involved in determining personnel health hazards, training required, and appropriate levels of PPE.

NOTE: There are two distinct phases of an aircraft mishap--initial response and recovery. Initial response teams face the probability of an aircraft fire. As the composite material burns, gases, vapors and solid particles are released into the smoke plume. Recovery team members may be exposed to fibers and respirable/inhalable dusts as aircraft parts are moved, modified by cutting, breaking, twisting, or hammering. Personnel tasked to participate in crash or post-crash response, recovery, maintenance, and/or clean up operations must be aware of/briefed on all possible health issues involved. Units must ensure local policies and procedures for handling crash damaged composites are addressed; to include training and PPE.

14.11. Dropped Object Prevention (DOP) Program. A dropped object is any aircraft part, component, surface, or other item lost during aircrew operations, unless intentionally jettisoned from engine start to engine shutdown. Inadvertently released munitions or munitions released in excess of the quantity selected by the aircrew, or a multiple release, are not considered dropped objects and will be reported IAW AFI 91-204.

14.11.1. Responsibilities. All units, which fly, service, or maintain aircraft develop a DOP program with the following provisions:

14.11.1.1. MAJCOM DOP monitors or aircraft functional managers will act as OPR for all dropped object field inquiries IAW MAJCOM established standards. The WG/CV serves as the DOP program manager. The WG/CV will appoint the wing DOP monitor. The wing DOP monitor may be assigned under QA.

14.11.1.2. Training. The wing DOP monitor will identify and develop training standards. Commanders will ensure all maintenance personnel involved in on-equipment maintenance receive adequate DOP training.

14.11.1.3. Prevention. Effective prevention of dropped objects starts when an aircraft door, panel, or cowling is opened for maintenance and during munitions build-up, loading, and arming. Maintenance personnel will ensure the serviceability of fasteners and the proper fit of doors, panels, connectors, etc. Place special attention on the correct length of fasteners and condition of nut plates and other securing devices. Supervisors place special emphasis on these areas during the inspection of completed maintenance actions.

14.11.1.4. Investigation. The DOP monitor will investigate each dropped object incident. Every effort will be made to determine the precise cause to ensure positive corrective action is accomplished. Anytime a materiel or design deficiency is the cause, or suspected cause, a DR will be submitted IAW TO 00-35D-54, even when an exhibit is not available. Investigation results will be distributed to each appropriate work center for inclusion in personnel training and education programs.

14.11.1.5. Reporting. Units will follow DOP program reporting procedures below:

14.11.1.5.1. Initial dropped object report will be made to the MAJCOM via telephone, e-mail, or message. If it involves casualties, property damage, or if adverse publicity is likely, report IAW AFMAN 10-206, *Operational Reporting*. The wing DOP monitor notifies the base/wing safety office of all dropped objects. Units will maintain reports for a minimum of 24 months (may be electronic).

14.11.1.5.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Dropped Object Reporting. Unit MXG/CC shall ensure maintenance personnel notify the safety office of dropped object incidents. NGB/A4MM shall maintain a database on aircraft dropped objects. Reports must be submitted via the Internet at: (**https://guardian.ang.af.mil/home/homeLG.asp**). The unit Dropped Object Monitor is responsible for entering dropped object data into the website. This requirement is for trend and tracking information only, and is in addition to the dropped object operational reports required in AFI 10-206 and AFI 10-206_ANGSUP1, *Operational Reporting*.

14.11.1.5.2. Follow-up formal report will be made to the MAJCOM within 3 duty days after the occurrence. The formal format will be used as listed below:

14.11.1.5.2. **(ANG)** N/A to the ANG. The following only applies to the ANG: Input to the ANG dropped object website must be made within five duty days after the occurrence. The following subparagraphs are included in the ANG web site.

14.11.1.5.2.1. DOP program report number (unit, year, and month, followed by sequence number -- example, 301FW-060501).

14.11.1.5.2.2. MDS.

14.11.1.5.2.3. Type mission and mission profile.

14.11.1.5.2.4. Aircraft tail number.

14.11.1.5.2.5. Owning organization and base.

14.11.1.5.2.6. Origin of sortie.

14.11.1.5.2.7. Date of incident and discovery location (if different than origin of sortie).

14.11.1.5.2.8. Geographical location of object, if known.

14.11.1.5.2.9. Item, noun, and description (use information from the applicable aircraft -4 series TOs).

14.11.1.5.2.10. TO, figure, and index.

14.11.1.5.2.11. Part number.

14.11.1.5.2.12. Correct WUC (full five-digit) or Logistics/Maintenance Control Number (full seven-digit).

14.11.1.5.2.13. Last PH, PE, PDM, HSC, or ISO inspection.

14.11.1.5.2.14. Last maintenance performed in the area and date.

14.11.1.5.2.15. Investigation findings (cause).

14.11.1.5.2.16. Costs in dollars to repair or replace as appropriate and cost in man-hours to repair.

14.11.1.5.2.17. Actions to prevent recurrence.

14.11.1.5.2.18. DR Control Number (if submitted).

14.11.1.5.2.19. Unit POC information.

14.11.1.5.2.20. Other pertinent information.

14.11.1.5.3. Transient Aircraft. The local wing DOP monitor will be responsible to investigate dropped objects from a transient aircraft. The wing DOP monitor will provide the home station DOP monitor with sufficient data to generate a report for trending and tracking purposes.

14.12. F100 Eddy Current Inspection. This section applies to F100-PW-100/220/220E, F-15/F-16 Aircraft, 4K Fan Drive Turbine (FDT) Module Part Number 4084923 and 4085023 (all dash numbers) (4th Stage Turbine Blade - reliability enhanced program), Eddy Current Inspection Certification and Proficiency policy.

14.12.1. General: This program is applicable to all units who perform 4th stage turbine blade eddy current inspection on F100-PW-100/220/220E FDT module part numbers 4084923 and 4085023 (all dash numbers).

14.12.2. Target population and certification requirements: Only certified 2A7X2, 5-level and above, or civilian equivalent personnel may perform this inspection. Certification must be tracked on the SCR. They must have successfully completed the probability of detection (POD) test with 90 percent POD and 95 percent confidence level of 0.020 inch deep by 0.60 inch long crack. Inspector's POD shall not exceed this crack size. Maximum of two false calls is permitted during POD test. False positive of three to five calls is permitted, but requires remediation. False positive in excess of five will result in failure.

14.12.3. Formal training: Personnel must attend the 4th stage turbine blade eddy current training course to be certified.

14.12.4. The first five FDT modules inspected upon completion of training and POD testing shall be done under the supervision and guidance of a qualified inspector. Annotate accomplishment in individual training records.

14.12.5. The first three reportable and/or rejectable blade indications identified by each inspector shall be submitted to OC-ALC (Fax: DSN 336-3992) and Pratt & Whitney materials laboratory (Fax: Commercial 1-860-755-4287) for review to confirm measurement and interpretation of the signals is correct. Confirmation by OC-ALC or the Pratt & Whitney materials laboratory is acceptable. Annotate accomplishment in individual training records.

14.12.6. Proficiency: Once an inspector successfully completes the POD test, the inspector shall inspect a minimum of three FDTs every 45 calendar days to maintain certification and proficiency.

14.12.6.1. Inspectors who have not inspected a minimum of three FDTs in the last 45-day period will be considered "overdue inspectors" and shall not be permitted to inspect additional FDTs until successfully accomplishing the field test. The field test shall be administered as follows:

14.12.6.1.1. The overdue inspector will perform the eddy current procedure on a FDT in the presence of a currently qualified inspector.

14.12.6.1.2. The overdue inspector shall not have any false positives and shall not miss any discontinuities detected by the qualified inspector.

14.12.6.1.3. The field-test may not be repeated.

14.12.6.1.4. The field-test does not count toward the three engine per period inspection requirement for the overdue inspector.

14.12.6.2. Inspectors shall be decertified and will require re-accomplishment of the POD test to become recertified under any of the following conditions:

14.12.6.2.1. The field-test is not successfully completed within 15 days after the 45 day period ends.

14.12.6.2.2. The inspector fails the field-test.

14.12.6.2.3. The inspector fails to inspect a minimum of three FDTs during each of the last two 45-day periods. Example: individual fails to maintain proficiency in first 45-day period and successfully passes the field test. In the second consecutive 45-day period, the individual does not maintain proficiency requirements. Individual will not be allowed to take a second field test and will be decertified.

14.12.7. Documentation: Upon successful completion of training and certification the NDI section NCOIC will annotate the individual's AF Form 623. Units will track proficiency requirements in the MIS. The NDI section NCOIC will maintain copies of inspection data sheets and field test results for one year.

14.13. End-of-Runway (EOR) Inspection.

14.13.1. The EOR inspection is a final visual and/or operational check of designated aircraft systems and components. It applies to aircraft designated in joint agreement between the MAJCOMs and appropriate PM. The PM will list minimum inspection requirements in the applicable Dash 6 and publish requirements in Dash 6 work cards.

14.13.2. This inspection is performed immediately prior to take-off at a designated location usually near the end of the runway.

14.13.3. The purpose of the inspection is to detect critical defects that may have developed or have become apparent during ground operation of the aircraft after departing the aircraft parking spot.

14.13.4. Perform this inspection when any applicable aircraft is launched from either home station or a transient USAF base.

14.13.4.1. Alert aircraft launched from alert status for actual Alert, Alert Force Evaluations, or from sector directed scrambles do not require an EOR inspection. Alert aircraft that launch for training or scheduled missions from alert status require an EOR inspection.

14.13.5. If local requirements dictate, publish additional guidance to TOs for EOR inspections IAW TO 00-20-1, and TO 00-5-1. ***NOTE:*** Safing, arming, and de-arming of live munitions will be accomplished by personnel qualified IAW **Chapter 12** of this instruction.

14.13.6. The team chief (identified by a reflective vest) carries an EOR checklist and ensures each item is inspected as required. On aircraft with a ground intercom system, units are only required to establish verbal communications with the pilot when communication beyond the standard EOR marshalling hand signals is required unless otherwise directed by MDS specific technical data. If the aircraft is not equipped with a ground intercom system, ground control talker cards will be used when communication with the aircrew becomes necessary.

14.13.7. Marshaling signals will be IAW AFI 11-218.

14.13.8. Units will develop procedures to ensure discrepancies discovered during EOR are entered in the AFTO IMTs 781A and MIS. Units will also develop procedures to ensure Red X discrepancies discovered during time-sensitive (Red Ball) maintenance are accomplished and cleared from the forms prior to flight. Every effort will be made to input and clear the discrepancy in the MIS prior to flight.

14.14. Engine Blade Blending Training and Certification Program.

14.14.1. General. All units will have a comprehensive training program to ensure technical standards are met, and proficiency is maintained. The number of individuals authorized to inspect and repair blades must be sufficient to meet mission requirements and production needs. Additionally, this program will ensure competency through regular performance.

14.14.1. **(ANG) EXCEPTION** : F-108/T56/T64/T400/T700 units shall have a comprehensive training program for blade blending, but are not required to maintain proficiency.

14.14.2. Target Population. Only certified 2A3X3, 2A5X1/2, and 2A6X1X, minimum 5-level or civilian equivalent may perform blade blend inspections and repairs.

14.14.3. Responsibilities and Management. The MTF or TD will be responsible for management and development of the blade blending training program. As a minimum, the course will include care and handling of equipment, applicable technical data, fault isolation/damage assessment/defect size determination, techniques required to correctly inspect and repair blades and performance of an engine blade blend. Prior to placement on the SCR, the formal blade blending training (MTF or TD course) and initial engine blade blending certification are mandatory.

14.14.3. **(ANG)** Maintenance training, in coordination with SMEs or TD shall be responsible for management and development of the blade blending training program.

14.14.4. MXG/CCs will appoint maintenance, TD, or AFETS/CETS personnel as instructors. Track instructors on the SCR IAW **Table 14.1.** of this instruction. MTF will ensure course codes are developed in the MIS to track the following:

14.14.4. **(ANG)** MXG/CC shall select maintenance instructors, engine CETS or Roving Reps to provide training.

14.14.4.1. Formal training, engine blade blending course.

14.14.4.2. Initial engine blade blending certification.

14.14.4.3. Annual engine blade blending recertification.

14.14.4.4. 180-day engine blade blending proficiency requirement as required in paragraph **14.14.6.**

14.14.5. Certification Criteria. Certifying officials will be selected IAW criteria established in **Table 14.1.** of this instruction. Units will limit the number of certifiers to a minimum to ensure standardized training and certification. Certifying officials will maintain proficiency in the same manner as other technicians; certifying officials will recertify each other.

14.14.5.1. Certified individuals who PCS to the same MDS and engine TMSM may by-pass formal training course. These individuals will be re-certified by a certifier prior to being added to the SCR. Carry over date of original class completion from previous documentation (certificate, training record, MIS printout). ***NOTE:*** If applicable, assigned AFETS/CETS should be used to certify other certifying officials. Upon completion of the formal training, individuals are task evaluated by the certifying official (an individual other than the instructor who administered the course), and placed on the SCR.

14.14.5.1. **(ANG)** After receiving training by engine CETS/Roving Reps and having performed a blade blending demonstration, certifying officials must be certified by the MXG/CC.

14.14.6. Proficiency Requirements. As a minimum, B-1, B-2, F-15, F-16, F-22A, F-117, and U-2 personnel must perform one blend repair every 180 days to maintain proficiency. Work center supervisors ensure personnel who do not meet this requirement are decertified.

14.14.7. Annual Recertification. Recertification is accomplished by having the technician demonstrate they can perform the task(s). A QA PE may be used to satisfy this requirement if the QA evaluator is a certifying official.

14.14.7.1. F-15, F-16, and F-22A engine blade blending technicians and certifiers will attend the blade blending inspection course, and be re-certified by a certifying official.

14.14.8. Blade blending procedures for installed engines:

14.14.8.1. Notify the Wing FOD Monitor prior to blade blending anytime FOD is identified, other than for minor sand nicks or scratches. Ensure evaluated or repaired FOD is documented in the AFTO IMT 95 (automated or manual) and CEMS, IAW TO 00-20-1.

14.14.8.1. **(ANG)** Or notify QA in the absence of the Wing FOD Monitor.

14.14.8.2. Notify EM section with the following information for input into engine historical records; engine serial number, stage number, number of blades blended, depth of damage before and after blend, area of damage and employee number of maintenance personnel. Fill out blade blending/FOD damage worksheet or applicable form and forward to EM for filing in engine/module records.

14.14.9. Blade blending procedures for uninstalled engines/modules:

14.14.9.1. Notify Wing FOD Monitor prior to blade blending anytime FOD is identified, other than for minor sand nicks or scratches. Ensure evaluated or repaired FOD is documented in the AFTO IMT 95 (automated or manual) and CEMS IAW TO 00-20-1.

14.14.9.2. Fill out Blade Blending/FOD Damage worksheet or applicable form; file in engine/module work package.

14.14.9.3. EM section document following information for input into engine historical records; engine serial number, stage number, number of blades blended, depth of damage before and after blend, area of damage and employee number of maintenance personnel.

14.14.10. **(Added-ANG)** Personnel who become decertified must receive initial training and exhibit proficiency before being placed back on the SCR.

14.15. Engine Run Training and Certification Program.

14.15.1. A comprehensive engine run certification program will be developed and strictly enforced to prevent safety mishaps and potential loss of life. All maintenance personnel authorized to start and operate aircraft engines, APUs, and uninstalled engines will be trained and certified to operate engines at TO determined power settings. Aircraft engine motoring will only be performed by qualified engine run personnel. ***EXCEPTION:*** Rotary wing maintenance personnel qualified through OJT may motor engines as long as the rotor brake will prevent the rotors from turning.

The MXG/CC is responsible for ensuring the MTF develops and manages an effective engine run certification program. The following minimum requirements will be used to certify engine run personnel:

14.15.1. **(ANG)** Aircraft engine motoring must only be performed by qualified engine run personnel. **EXCEPTION**: HH-60 maintenance personnel qualified through OJT may motor engines as long as the rotor brake will prevent the rotors from turning. The MXG/CC is responsible for ensuring an effective engine run certification program is developed.

14.15.1.1. The MTF will serve as the OPR and focal point for the management and development of the engine run certification program, engine run certification test question bank, and written tests for their respective weapon system.

14.15.1.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: The MXG/CC shall appoint a Unit Engine Run Program Manager, preferably within the engine shop, for the management and development of the engine run certification program.

14.15.1.2. Pre-run training is designed to prepare the trainee for successful completion of initial engine-run training. It will be conducted in the trainee's work center through OJT. As a minimum, pre-run training will include:

14.15.1.2.1. An evaluation by immediate supervisor or production supervisor to determine the individual’s level of maturity and experience prior to being selected for engine-run training.

14.15.1.2.2. The trainee will review and become familiar with engine-run operations to include emergency procedures IAW the applicable aircraft Dash 1 and engine run checklist. MTFs may develop a handout to facilitate learning engine-run procedures, engine limitations, and emergency procedures.

14.15.2. Installed Engine Run Personnel. Prior to entering engine run training, ensure personnel meet the following requirements:

14.15.2.1. Personnel will be selected IAW criteria established in **Table 14.1.** of this instruction. Be a minimum of SrA and have a minimum five-skill level. MXG/CCs may waive qualified

five-skill level A1C for critical manpower shortages. MXG/CCs may designate contractors in writing to run aircraft engines.

14.15.2.2. Acquired at least 6 consecutive months experience on MDS for which engine run training is required. (Experience must have occurred immediately prior to course enrollment). The MXG/CC may waive the weapons system experience at short tour bases.

14.15.2.3. Qualified to operate aircraft APU, Gas Turbine Compressor (GTC)/Air Turbine Motor (ATM), or Auxiliary Power Plant (APP).

14.15.2.4. Familiar with aircraft marshalling signals.

14.15.2.5. Qualified as a brake operator.

14.15.2.6. Qualified in basic radio and interphone systems operation.

14.15.2.7. Complete all applicable training courses.

14.15.3. Certifiers. Aircraft engine-run certifying officials will hold the rank of MSgt or above and possess one of the following AFSCs: 2A671A/B, 2A571/2, 2A373X (or civilian equivalent), or be a fully qualified/certified contractor or AFETS/CETS representative. Certifiers will be approved by the MXG/CC and tracked on the SCR. The MXG/CC may waive qualified TSgts. All certifiers must have a minimum of 1 year engine-run experience on the applicable MDS and engine TMSM (not applicable at short tour locations). Instructor pilots (IP) can also be used as certifiers during the practical engine-run demonstration. Certifying officials must maintain proficiency in the same manner as other technicians; certifying officials must re-certify each other.

14.15.3. **(ANG)** CETS reps are not certifiers.

14.15.4. Instructors. Individuals selected as instructors will hold the rank of SSgt or above and possess a 7-skill level in one of the following AFSCs 2A6X1A/B, 2A5X1/2, or 2A3X3X (or civilian equivalent), a qualified contractor, or be a AFETS/CETS representative. ***NOTE:*** Use AFI 11-218, aircraft and engine TOs, commercial aircraft/engine operating procedures, and special test project engineering procedures to develop engine run certification training programs.

14.15.5. The initial engine run certification program will consist of three phases (each phase will be successfully completed before progressing to the next phase):

14.15.5. **(ANG)** All three phases of training shall be completed within 180 calendar days of initial enrollment. Failure to complete all requirements within the specified time frame will require the individual to begin the entire training again.

14.15.5.1. Phase 1 is formal classroom training. Classroom instruction will include:

14.15.5.1.1. General aircraft familiarization to include, as a minimum, basic MDS airframe characteristics, aircraft safe-for-maintenance procedures, cockpit configuration and systems, throttles and aircraft controls, egress, normal and emergency braking systems, and aircraft system/subsystems operation.

14.15.5.1.2. A thorough review of TO procedures with emphasis on notes, cautions, and warnings.

14.15.5.1.3. Engine/APU operation, to include normal operational parameters and limitations.

14.15.5.1.4. Ensuring aircraft, engine, and APU emergency procedures are memorized.

14.15.5.1.5. UHF/ VHF radio operation, air traffic control (ATC) tower procedures, and emergency radio transmissions.

14.15.5.1.6. A two-part closed book examination (students will successfully complete part I before taking part II) consisting of the following:

14.15.5.1.6.1. Part I - Students will be given a written examination on bold face emergency procedures (test length will depend upon the bold face procedures identified in the applicable tech data) requiring a passing score of 100 percent.

14.15.5.1.6.2. Part II - Students will be given a written examination covering normal engine run procedures and limitations requiring a minimum passing score of 90 percent, corrected to 100 percent.

14.15.5.1.6.2. **(ANG)** The normal procedures test shall include 30 questions as a minimum. Questions must include limitations, responses to abnormal conditions, communications and precautions (warnings, cautions, and notes). The questions may be multiple choice or fill-in-the-blank.

14.15.5.1.7. Personnel failing the written examination will receive additional instruction before being re-tested.

14.15.5.1.8. Students will not be given the same Part II test during re-testing efforts.

14.15.5.1.9. After a second failure of either test, the SQ/CC (or equivalent) must authorize personnel to retest and continue in the program.

14.15.5.2. Phase 2 is simulator training. All maintenance personnel requiring engine run certification will receive simulator training on each specific aircraft MDS and APU. Training will be accomplished in an aircrew training device (ATD), cockpit trainer (CPT), simulator, or approved TD trainer. If any of the above are not available, ”dry run” procedures will be accomplished in an aircraft, to ensure procedural knowledge.

14.15.5.2.1. As a minimum, students will demonstrate knowledge and proficiency in the following areas:

14.15.5.2.1.1. Proper run clearance procedures.

14.15.5.2.1.2. UHF/VHF radio operation, ATC tower procedures, and emergency radio transmissions.

14.15.5.2.1.3. Normal APU/engine start, run, and shutdown procedures.

14.15.5.2.1.4. Augmentor or thrust reverser operation (as applicable).

14.15.5.2.1.5. Aircraft systems/subsystems normal operating parameters.

14.15.5.2.1.6. Ensure TO emergency bold face items are memorized. Instructors will evaluate the student on response time and ability to handle emergency situations to include egress procedures.

14.15.5.3. Phase 3 is practical demonstration. Each individual will receive a practical engine run evaluation after successful completion of Phase 1 and Phase 2 training. For fighter type aircraft, it is preferable to conduct the evaluation in a hush house, sound suppressor, or on a trim pad. As a

minimum, the student will demonstrate successful completion of the following areas without any discrepancies based on a go/no-go standard:

14.15.5.3. **(ANG)** The certifier must maintain visual contact and voice communication via the intercom system. For large aircraft, the certifier must be in the cockpit.

14.15.5.3.1. Run clearance procedures.

14.15.5.3.2. UHF/VHF radio operation, ATC tower procedures, and emergency radio transmissions.

14.15.5.3.3. Normal APU/engine start, run, and shutdown procedures, including notes, cautions, and warnings.

14.15.5.3.4. Augmentor or thrust reverser operation as applicable, including notes, cautions, and warnings.

14.15.5.3.5. Aircraft systems/subsystems normal operating parameters, including notes, cautions, and warnings.

14.15.5.3.6. Ensure TO emergency bold face items are memorized. Instructors will evaluate the student on response time and ability to handle emergency situations.

14.15.5.3.7. Egress procedures.

NOTES:

Personnel performing engine maintenance ground runs shall fasten seat belts/shoulder harnesses IAW with technical data.

For vertical lift aircraft, maintenance personnel are not authorized to operate installed engines above ground idle and are not permitted to start and run-up vertical lift aircraft that will not operate without rotor or CV-22 prop-rotor rotation. On rotary wing aircraft, Phase 2 will be accomplished using a "dry run".

14.15.5.3.8. **(Added-ANG)** Accomplish at least two engine runs (engine start to engine shutdown) to ensure that the individual is proficient and to confirm the adequacy of Phase 2 training. Failure to demonstrate proficiency during the practical evaluation requires further training based on the certifying official's determination of deficiencies. Certify individuals after successful completion of Phase 3 training and a minimum time of six months on the MDS. **NOTE**: For vertical lift aircraft, maintenance personnel are not authorized to operate installed engines above ground idle and are not permitted to start and run-up vertical lift aircraft that will not operate without rotor. On rotary wing aircraft, simulator or CPT training is not required for initial engine run qualification.

14.15.6. Annual recertification for certifiers and engine run qualified personnel will be accomplished by successfully completing the written test (Part I and Part II) administered by the MTF and demonstrating knowledge of normal and emergency procedures to a certifying official by operating one of the following: ATD, CPT, authorized TD trainer (if assigned or available), or aircraft as appropriate.

14.15.6.1. Personnel failing the written examination will receive additional instruction before being re-tested.

14.15.6.2. Students will not be given the same Part II test during re-testing efforts.

14.15.6.3. After a second failure of either test, the individual will be decertified. The SQ/CC (or equivalent) must authorize personnel to re-enter the program. Individuals must attend all three phases of initial training prior to being recertified.

14.15.6.4. Certified individuals who PCS to the same MDS, and engine TMSM, must be approved by the SQ/CC (or equivalent) and complete an initial evaluation by a certifying official prior to becoming run qualified at the gaining base. Carry over date of original class completion from previous documentation (certificate, training record, MIS printout).

14.15.6.4.1. The evaluation will include, as a minimum, familiarization of local procedures and requirements.

14.15.7. Documentation. Qualifications of installed engine run certifiers and engine run certified personnel, will be documented in the MIS and entered on the SCR.

14.15.8. Proficiency. MAJCOMs will determine proficiency requirements for maintenance personnel authorized to operate installed engines.

14.15.8.1. Units will develop local procedures to track run proficiency requirements in the MIS.

14.15.8.2. Supervisors will ensure individuals who fail to maintain proficiency are decertified.

14.15.8.3. **(Added-ANG)** Engine runs. Individuals must perform one engine run every 90 days and successfully pass a written emergency procedures test every 6 months to maintain proficiency requirements for maintenance personnel authorized to operate engines.

14.15.8.3.1. **(Added-ANG)** All maintenance personnel required by technical data to occupy the cockpit during maintenance runs are given credit for running an engine. Workcenter supervisors and individual engine operators are responsible for ensuring that they meet this requirement.

14.15.8.3.2. **(Added-ANG)** The emergency procedures test is tracked in the MIS and requires a 100 percent score to pass.

14.15.8.3.3. **(Added-ANG)** Personnel who fail to pass the six month emergency procedures test shall not operate engines until they meet testing requirements. Supervisors determine if training is required before re-testing.

14.15.8.3.4. **(Added-ANG)** Personnel who go overdue any engine run proficiency requirement may remain on the SCR but shall not operate engines until recertified by a engine run certifier and the proficiency requirements are met. The extent of the recertification shall be determined locally or by the certifier.

14.15.9. MAJCOMs will determine if maintenance personnel are authorized to taxi aircraft and will develop detailed written guidance.

14.15.9. **(ANG)** Maintenance personnel shall only taxi aircraft with NGB/A4/A8 approval and have completed a locally developed qualification course including marshaling. Personnel authorized for taxi must complete at least one taxi every 90 days to maintain proficiency. A qualified taxi instructor must re-evaluate personnel not maintaining proficiency before they perform their next aircraft taxi.

14.15.10. Engine run certification tests are controlled items and will be handled IAW AFI 36-2201 and administered only by MTF personnel.

14.15.10. **(ANG)** The Unit Engine Run Program Manager, in coordination with SMEs, Quality Assurance and Maintenance Training, shall develop the engine run tests. Tests may be automated. Engine run certification tests are controlled items and must be handled IAW AFI 36-2201, and administered only by Maintenance Training or QA personnel if Maintenance Training is not available.

14.15.10.1. **(Added-ANG)** Maintenance Training shall maintain the standard test bank for the applicable system(s). As a minimum, it must consist of 75 normal procedure questions, and one question per boldfaced emergency procedures as identified in technical data. The tests shall be developed from the test bank. Both the normal and the emergency tests must be administered closed book.

14.15.10.2. **(Added-ANG)** The normal procedures test must include 30 questions as a minimum. Questions must include limitations, responses to abnormal conditions, communications and precautions (warnings, cautions, and notes).

14.15.10.3. **(Added-ANG)** Emergency procedures test must be fill-in-the-blank.

14.15.11. Aircraft APU, GTC, or APP Installed Operation Training. The following requirements and standards apply to qualifying maintenance personnel on operating the aircraft APU, GTC, and APP:

14.15.11.1. When conducting initial operator qualification training for APU, GTC, or APP, use the applicable video or other training program.

14.15.11.2. A two-part closed book examination consisting of the following: Note: Part I and Part II testing does not apply to F-22 APU operators using only the PMA from the ground.

14.15.11.2.1. Part I - Students will be given a written examination on bold face emergency procedures (test length will depend upon the bold face procedures identified in the applicable tech data) requiring a minimum passing score of 100 percent.

14.15.11.2.2. Students will successfully complete part I before taking part II.

14.15.11.2.3. Part II - Students will be given a written examination covering normal APU, GTC, APP run procedures and limitations requiring a minimum passing score of 90 percent, corrected to 100 percent.

14.15.11.3. Personnel failing the written examination will receive additional instruction before being re-tested.

14.15.11.4. Students will not be given the same Part II test during re-testing efforts.

14.15.11.5. After a second failure of either test, the SQ/CC (or equivalent) must authorize personnel to retest and continue in the program.

14.15.11.6. Personnel must then accomplish an on-equipment practical evaluation for certification completion.

14.15.11.7. Personnel will be recertified annually using the initial certification procedures. Recertification is not required if the individual is engine run certified and has maintained annual engine-run certification requirements.

14.15.12. Documentation. Qualifications of APU run certifiers and APU run certified personnel, will be documented in the MIS and entered on the SCR.

14.15.12. **(ANG)** Certifiers. APU/GTC run certifiers will be MSgt or higher and possess one of the following AFSCs: 2A675/76, 2A671A/B, 2A571/2, 2A373X with one year minimum APU-run experience on applicable MDS. MXG/CC may waive qualified TSgts. The 116 ACW may use AFETS.

14.15.12.1. F-22A APU operators using only the PMA from the ground need not be tracked on the SCR. ***EXCEPTION:*** If the APU is operated from the ground using a PMA and any personnel are present in the cockpit, the APU operator will be listed and certified on the SCR.

14.15.12.1.1. Any personnel performing APU operation from the cockpit will be engine run qualified and listed on the SCR.

14.15.13. Proficiency. MAJCOMs will determine proficiency requirements for maintenance personnel authorized to operate APUs.

14.15.13. **(ANG)** Must perform one APU/GTC run every 90 days.

14.15.13.1. Units will develop local procedures to track run proficiency requirements in the MIS.

14.15.13.2. Supervisors will ensure individuals who fail to maintain proficiency are decertified.

14.15.14. Certification tests are controlled items and will be handled IAW AFI 36-2201 and administered only by MTF personnel.

14.15.15. Uninstalled Engine Operation on Test Stands and Cells (includes JFS/APU/GTC uninstalled operations). All personnel identified for uninstalled engine run qualification will complete an uninstalled engine run training program prior to certification. The following minimum requirements apply:

14.15.15.1. Certification Requirements. Individuals will be certified for each specific engine TMSM authorized to run.

14.15.15.1.1. Personnel will be at least a staff sergeant and possess a 2A671A/B AFSC (or civilian equivalent). The MXG/CC may waive qualified SrA possessing a 5-skill level and a minimum of 6 months' experience on the applicable TMSM. If previously qualified on a different TMSM, the 6-month experience requirement may also be waived.

14.15.15.1.2. Have a minimum of 6 months current experience on each applicable TMSM, unless previously qualified. Not applicable to short tour assignments.

14.15.15.2. Certifiers. The MXG/CC designates selected qualified TSgts or higher 2A671A/B AFSC (or civilian equivalent) or fully qualified/certified contractors or AFETS/CETS representatives, to serve as certifiers. The MXG/CC may waive highly qualified SSgts. All certifiers will have a minimum of 1 year engine run experience on the applicable TMSM. (Not applicable to short tour assignments). The MXG/CC may authorize MTF uninstalled engine run instructors as certifying officials.

14.15.15.3. Instructors. Individuals selected as instructors will be 7-level SSgts or above with a 2A6X1A/B AFSC (or civilian equivalent), a qualified contractor, or an AFETS/CETS representative, and be run certified on each TMSM (if they are to be certifying officials).

14.15.15.4. Training. Uninstalled engine run training shall consist of three phases performed sequentially, meeting the objectives of all three, without exception, to the fully qualified level as follows: procedural instruction, control cab (engine not operating) training, and demonstration of engine run proficiency.

14.15.15.4.1. Phase 1 is formal training. Instruction will include, as a minimum, the following areas:

14.15.15.4.1.1. General engine familiarization to include, as a minimum, basic engine description, component location, and functions.

14.15.15.4.1.2. Thorough familiarization of control cabs, test stands, hush houses, and T-9 fire suppression control panels (if applicable).

14.15.15.4.1.3. Thorough review of TO procedures with emphasis on notes, cautions, and warnings.

14.15.15.4.1.4. Uninstalled engine operation to include normal operating parameters and limitations.

14.15.15.4.1.5. Ensuring uninstalled engine emergency procedures are memorized.

14.15.15.4.1.6. Local communication procedures.

14.15.15.4.1.7. A two-part closed book examination (students will successfully complete part I before taking part II) consisting of the following:

14.15.15.4.1.7.1. Part I - Students will be given a written examination on bold face emergency procedures (test length will depend upon the bold face procedures identified in the applicable technical data) requiring a minimum passing score of 100 percent.

14.15.15.4.1.7.2. Part II - Students will be given a written examination covering normal engine run procedures and limitations requiring a minimum passing score of 90 percent, corrected to 100 percent.

14.15.15.4.1.8. Personnel failing the written examination will receive additional instruction before being re-tested.

14.15.15.4.1.9. Students will not be given the same Part II test during re-testing efforts.

14.15.15.4.1.10. After a second failure of either test, the SQ/CC (or equivalent) must authorize personnel to retest and continue in the program.

14.15.15.4.2. Phase 2 is control cab evaluation. After successful completion of formal training, students will properly demonstrate the following minimum requirements to a certifying official without discrepancies using the go/no-go standard:

14.15.15.4.2.1. Proper uninstalled engine start, run, and shutdown procedures, including notes, cautions, and warnings (engine not operating).

14.15.15.4.2.2. Proper uninstalled engine bold face emergency procedures, including notes, cautions, and warnings (engine not operating).

14.15.15.4.2.3. Knowledge of normal uninstalled engine operating limits, including notes, cautions, and warnings.

14.15.15.4.2.4. Augmentor or thrust reverser operation (as applicable), including notes, cautions, warnings and emergency procedures.

14.15.15.4.3. Phase 3 is practical evaluation. Each individual will receive a practical uninstalled engine run evaluation after successful completion of classroom training and control cab evaluation from a certifier. As a minimum, the student will demonstrate successful completion of the following areas without discrepancies based on a go/no-go standard:

14.15.15.4.3.1. Run clearance procedures.

14.15.15.4.3.2. Emergency communication procedures.

14.15.15.4.3.3. Normal uninstalled engine start, run, and shutdown procedures, including notes, cautions, and warnings.

14.15.15.4.3.4. Augmentor or thrust reverser operation (as applicable), including notes, cautions, and warnings.

14.15.15.4.3.5. Proper emergency procedure corrective actions during all bold face uninstalled engine emergency conditions.

14.15.15.5. Recertification. Annual recertification for certifiers and uninstalled engine run qualified personnel will be accomplished by successfully completing the written test (Part I and Part II) administered by the MTF, control cab evaluation demonstrating knowledge of normal and emergency procedures to a certifying official, and practical engine run demonstration.

14.15.15.5.1. Personnel failing the written examination will receive additional instruction before being re-tested.

14.15.15.5.2. Students will not be given the same Part II test during re-testing efforts.

14.15.15.5.3. After a second failure of either test, the individual will be decertified. The SQ/CC (or equivalent) must authorize personnel to re-enter the program. Individuals must attend all three phases of initial training prior to being recertified.

14.15.15.6. Proficiency. MAJCOMs will determine proficiency requirements.

14.15.15.6. **(ANG)** Must perform one engine run every 90 days.

14.15.16. Fire Control Panel Operation in Hush Houses/Noise Suppressors. This section applies to all Hush Houses/Noise Suppressors designed for enclosed aircraft and uninstalled engine operation (e.g., T-9, T-10, T-11) with fire suppression systems control panels. Ensure only qualified personnel are certified to use the hush house/noise suppressor fire control panel. The following certification requirements apply:

14.15.16. **(ANG)** Add T-20 sound suppressor for this and all applicable subparagraphs.

14.15.16.1. Be at least a SrA with AFSC 2A6X1A/B or civilian equivalent. Have a minimum of 6 months' hush house/noise suppressor experience and tracked on the SCR.

14.15.16.1. **(ANG)** AFSC 2A3X3.

14.15.16.2. Training will consist of formal training using TOs and hands on familiarization and will include the following minimum requirements:

14.15.16.2.1. Hush house/noise suppressor fire control panel familiarization and operation.

14.15.16.2.2. Emergency procedures, including local notification procedures.

14.15.16.3. Hush house/noise suppressor supervisor, contractor, AFETS/CETS personnel (or individual designated by the hush house/noise suppressor supervisor) will serve as the certifying official.

14.15.16.4. Hush house/noise suppressor fire control panel certified personnel require annual recertification utilizing the same criteria as initial certification.

14.15.17. Trim Box Requirements. For units possessing F-15 or F-16 aircraft equipped with F100-PW-100 or -200 engines, engine trim box operators for engine trim operation must be certified to perform trim operations. MAJCOMs possessing F-15/F-16 aircraft equipped with F100-PW-100 or -200 engines must establish engine trim box operator training and initial certification and annual recertification programs.

14.15.17.1. A minimum of two engine trim evaluations by a certifier will constitute certification. Certifiers will evaluate and re-certify personnel annually. Prior to engine start, the aircraft operator and trim crew review all emergency procedures and critical engine limits.

14.15.17.2. Formal Training. MTF/TD will develop and manage training. As a minimum, the course will include engine systems, engine parameters, engine trim parameters, emergency procedures, all applicable technical data to include trim box operation, calibration, pre- and post-trim procedures, and any local procedures/instructions.

14.15.17.3. Be a minimum of SrA, 2A651A (or civilian equivalent) and tracked on the SCR. MXG/CC may waive qualified 5-skill level A1Cs for critical manpower shortages.

14.15.17.4. Certifiers. The MXG/CC designates selected highly qualified 2A671A or above technicians (or civilian equivalent) and/or fully qualified AFETS/CETS personnel to perform as certifying officials. Certifying officials will be tracked on the SCR.

14.15.17.5. The aircraft operator has primary responsibility for the overall safety of the trim operation because he/she is the only member of the trim team that has complete visibility of all aircraft systems.

14.15.17.6. The trim box operator is responsible for the trim procedure. They ensure the engine is trimmed to the correct parameters and verifies the trim targets with the aircraft operator during the trim operation.

14.15.17.7. Documentation. Qualifications of trim-box operators will be documented in the MIS and entered on the SCR.

14.15.17.8. Proficiency. MAJCOMs will determine proficiency requirements.

14.15.17.8. **(ANG)** (ANG Added) Proficiency requirement for the trim-box is annually.

14.16. Flash Blindness Protective Device.

14.16.1. Flash Blindness Protective Device Maintenance Program. This program standardizes procedures for cleaning, repairing, installing, inspecting, storing, packaging, and sealing of flash blindness protective devices (e.g., shields, thermal curtains and thermal radiation barriers), on applicable aircraft. The MXG/CC is responsible for ensuring effective aircraft thermal protective device maintenance is accomplished IAW applicable aircraft TOs, and this instruction. Aircraft flash blindness protective devices/shields are maintained serviceable to provide optimum nuclear thermal/radiation protection to the aircrew during EWO/OPLAN 8044 conditions.

14.16.2. Aircraft Support Flight/Section Responsibilities.

14.16.2.1. Ensures aircraft thermal protective devices, shields, and associated hardware are maintained IAW aircraft TOs and this instruction.

14.16.2.2. Establishes an adequate and effective training program to train and qualify individuals to install, inspect, and when required, seal aircraft thermal protective devices and shields.

NOTE: Units are authorized and encouraged to maintain sufficient condemned thermal curtains to allow maintenance and crew personnel installation practice without using serviceable curtains. Thermal curtains designated for training are plainly labeled ”FOR TRAINING ONLY” to preclude inadvertent use for Alert or OPLAN 8044/Theater Nuclear Option (TNO)/EWO purposes. Thermal curtains designated for training use are controlled by the flight/section NCOIC; however, curtains may be furnished to, and retained by, squadrons for classroom purposes.

14.16.3. Do not store training curtains on-board aircraft. Use of training thermal curtains is encouraged during NAF and local generations.

14.16.4. Do not seal thermal-protective devices and shields on a routine basis unless dictated by specific aircraft technical data. However, when operational requirements dictate, crew chiefs may perform this task using the lead-seal-crimping tool. Ensure lead-seal crimping tools reflect the unit numerical code (e.g., Minot-5, Mildenhall-100, Kadena-18) which is reflected on the lead seal after crimping. Control and account for lead-seal crimping tools IAW CTK procedures (**Chapter 10** of this instruction).

14.16.5. Fabrication Flight Responsibilities:

14.16.5.1. The Fabrication Flight Chief ensures aircraft thermal-protective devices and shields are repaired IAW appropriate aircraft TOs.

14.16.5.2. Train and task qualify fabrication and parachute technicians to inspect and repair thermal protective devices and shields.

14.16.5.3. Ensure lead-seal crimping tools reflect the unit numerical code identifier (e.g., Minot-5, Mildenhall-100, Kadena-18) which is reflected on the lead seal after crimping. Control and account for lead seal crimping tools IAW CTK procedures (**Chapter 10** of this instruction).

14.16.6. Additional Maintenance Requirements. In addition to the inspection requirements contained in aircraft TOs, perform the following inspection, certification, and sealing procedures:

14.16.6.1. Conduct a pre-alert inspection of all aircraft thermal-protective devices, shields, and associated hardware IAW technical data. Document the pre-alert inspection on a red dash in the AFTO Form/IMT 781A, with the following statement: "Thermal Protective Devices/Shields Inspection Required". During the aircraft pre-alert inspection, a qualified survival equipment technician (AFSC 2A7X4) or crew chief (2A5X1) assists the aircrew in accomplishing this inspection. The aircraft commander certifies the aircraft thermal protective devices and shields for alert. Upon certification acceptance, the survival equipment technician or crew chief signs the "Corrected By’ block of the AFTO Form/IMT 781A entry, and the aircraft commander signs the "Inspected By" block.

14.16.6.2. Prior to deployment verify seals are intact. If seals are broken, re-inspect the thermal-protective device and shield and reseal.

14.16.6.3. Perform the following sealing procedures on alert aircraft:

14.16.6.3.1. All aircraft thermal-protective devices and shields are sealed either in the opened or closed position or in the storage container, as appropriate, upon certification by the aircraft commander. Appropriate aircraft flight manuals specify thermal protective devices and shields that are sealed in the opened or closed position or storage container.

14.16.6.3.2. Upon aircraft alert termination, a qualified crew chief removes thermal protective devices inspects and reseals devices that are serviceable. Transport unserviceable devices to the survival equipment section for inspection and repair. Devices and shields remaining sealed are not re-inspected. Remove and seal all devices and shields in appropriate storage container, if required.

14.17. Engine Flexible Borescope Inspection Training and Certification Program

14.17. (ANG) Also Rigid Borescope.

14.17.1. General. All units maintaining engines using flexible borescopes will have a comprehensive training program established. The purpose of the program is to ensure: Individual knowledge and proficiency levels, proper care and use of equipment, and standardization of program requirements.

14.17.1. **(ANG)** All units maintaining engines/helicopter gear boxes with a TO requirement to use a borescope, and those that do not have a TO requirement to use a borescope but do so to enhance inspections, must have a comprehensive training program established.

14.17.2. Target Population. Only certified 2A3X3, 2A5X1/2, and 2A6X1X, 5-, 7-, and 9-levels or civilian equivalent may perform flexible borescope inspections on engines.

14.17.3. Formal Training. MTF/TD will develop and manage training. MXG/CC will select maintenance instructors or TD instructors to provide training, (AFETS/CETS may be used as alternate instructors). As a minimum, courses will include care and handling of the equipment, all borescope/port locations to include all inspection requirements and procedures, all applicable technical data, fault isolation/damage assessment/defect size determination, and performance of an actual engine borescope.

14.17.3. **(ANG)** Maintenance Training, in coordination with SMEs shall develop and manage training. Roving Reps/CETS may be used as alternate instructors.

14.17.4. Certification Criteria. Certifying officials will be the most qualified 7- or 9-level 2A6X1X, 2A3X3, 2A5X1X, 2A5X2, or AFETS/CETS. Certifying officials will be approved by the MXG/CC and tracked on the SCR. The number of certifying officials will be limited to the amount needed to meet certification requirements and mission demands. Certifying officials will maintain proficiency in the same manner as other technicians; certifying officials will recertify each other. Upon completion of formal training, individuals are task evaluated by the certifying official (an individual other than the instructor who administered the course), and placed on the SCR.

14.17.4. **(ANG)** Engine CETS and Roving Reps shall train certifiers; however, the certifying officials must be certified by the MXG/CC. Certifying officials shall then train and certify the remaining qualified personnel. Units that do not have practical access to CETS or Roving Reps, the unit certifier shall complete the local training course and be appointed by the MXG/CC, based on their technical expertise, knowledge, and experience on the engine. AETC training course J4ASF2A6X1b-021 is acceptable training for T56 Blade Blending and Borescope certifiers.

14.17.4.1. Certified individuals who PCS to the same MDS and engine TMSM may by-pass the formal training course. These individuals must be re-certified by a certifier prior to being added to the SCR. Carry over the date of original class completion from previous documentation (certificate, training record, MIS printout). ***NOTE:*** If applicable, assigned AFETS/CETS should be used to certify other certifying officials.

14.17.5. Documentation. After completing formal training, the instructor signs off the individual's AF Form 623. Upon certification, personnel are placed and tracked on the SCR. Ensure that all borescope inspections are loaded against the engine and not the aircraft.

14.17.6. MTF will ensure the following course codes are tracked in the MIS:

14.17.6.1. Formal training borescope course.

14.17.6.2. Initial borescope certification.

14.17.6.3. Proficiency requirement.

14.17.6.4. Annual recertification.

14.17.7. Proficiency Requirements. As a minimum, CAF personnel bound by TO requirements for flexible borescope inspections must perform one flexible borescope inspection every 120 days to maintain proficiency. Work center supervisors ensure personnel who do not meet minimum requirements are decertified. MAJCOMs will determine proficiency requirements for non TO (i.e., event driven) inspections.

14.17.7. **(ANG)** Also applicable to MAF personnel.

14.17.8. Annual Recertification. Each borescope-qualified technician is required to be recertified by a certifying official. This is accomplished by having technicians demonstrate proper inspection requirements, as well as, use and care of equipment.

14.18. Flying Crew Chiefs (FCC). The objective of the FCC program is to enhance mission effectiveness by providing qualified maintenance support for aircraft at locations other than home station. FCCs are qualified in their duty AFSC and are required to obtain, maintain, and apply basic knowledge in several other aircraft maintenance AFSCs. They are responsible for launch, recovery, inspection, servicing, generation, and maintenance of aircraft in austere locations and locations where specific MDS maintenance capability may not be available.

14.18.1. MAJCOMs may authorize/develop a FCC program under the direction of HQ USAF/A4MM for maintainers who are required to regularly fly and maintain aircraft. FCCs are selected per mission requirements as directed by MAJCOMs and qualify for Special Duty Assignment Pay (SDAP) IAW AFI 36-3017, *Special Duty Assignment Pay Program*. SDAP is a program designed to reimburse “C” prefix maintenance AFSC personnel.

14.18.2. The FCC program only applies to “C” prefix AFSC maintenance personnel directed to fly regularly as a result of:

14.18.2.1. DoD, AF, MAJCOM, or other higher authority written policies directing FCCs to accompany their aircraft for mission accomplishment.

14.18.2.2. TO-directed in-flight maintenance (e.g., helicopter FCFs).

14.18.3. The following situations would not qualify the FCC for SDAP.

14.18.3.1. Occasional flights where the aircraft is used as transportation in lieu of commercial air.

14.18.3.2. Incentive or indoctrination flights.

14.18.3.3. Deployments where additional maintenance personnel are required at the designated location to supplement assigned maintainers.

14.18.4. Qualifying missions. A mission consists of one or more sorties with a mission number as entered on the AFTO Form/IMT 781, **AFORMS Aircrew/Mission Flight Data Document**. For a mission to meet the intent of this program, the mission must meet the criteria in the paragraphs below:

14.18.4.1. The FCC is required to accomplish maintenance at locations other than home station so the aircraft is prepared for its next departure. The mission must also be one where FCCs are required to fly by higher authority written policies (e.g., special airlift missions, alert missions, special operations).

14.18.4.2. The FCC is required by TO to perform in-flight maintenance (e.g., helicopter FCFs).

14.18.5. FCC program responsibilities.

14.18.5.1. HQ USAF/DPLF oversees the overall SDAP Program and provides program guidance in AFI 36-3017. Funds are not paid by MAJCOMs. AF/DPLF programs and budgets for SDAP based on inputs from HQ USAF/A4MM.

14.18.5.2. HQ USAF/A4MM is the SDAP functional manager for FCCs. HQ USAF/A4MM sets criteria for FCCs, validates MAJCOM FCC reports, and forecasts FCC SDAP budget needs. HQ USAF/A4MM approves/disapproves FCC position increases/decreases in coordination with HQ USAF/DPLFA.

14.18.5.3. MAJCOM implements the FCC program: They appoint a program manager to enforce standards and prepare the annual report.

14.18.5.4. MAJCOM program managers determine which squadrons will participate in the FCC program, and will:

14.18.5.4. **(ANG)** For ANG: Although the FCC program will be standardized by MDS, through the MDS Maintenance Council process, units will determine whether or not to participate. The unit decision to award the appropriate SEI to its members will denote their acceptance of this directive in governing their participation in the ANG FCC program. Participating units must develop a local MOI IAW with this AFI and applicable ANG Sups.

14.18.5.4.1. Validate and forward squadron FCC SDAP requests (**Attachment 6**) to HQ USAF/A4MM and HQ USAF/DPLFA.

14.18.5.4.2. Annually validate SDAP positions.

14.18.5.4.3. They assign FCC SDAP positions with an AFSC prefix of "C" and an appropriate SEI on command manpower documents.

14.18.5.4.4. Establish command unique training requirements and set additional qualification standards for their FCCs as needed.

14.18.5.4.5. Maintain quarterly and annual FCC reports **(Attachment 4** and **Attachment 5**).

14.18.5.4.6. Prepare and submit the command annual FCC report to HQ USAF/A4MM and HQ USAF/DPLFA by 15 August each year. Submit the biennial FCC report to HQ USAF/DPLFA upon request.

14.18.5.4.7. Review and approve/disapprove ACR for additions, deletions or changes of the "C" prefix to an AFSC on the UMD.

14.18.5.5. MAJCOM XPM (A5M) Command Manpower and Organization Responsibilities: XPM will:

14.18.5.5.1. Coordinate and obtain approval/disapproval from MAJCOM for Installation Manpower and Quality Office ACRs pertaining to validation of "C" prefix to AFSCs on the UMD.

14.18.5.5.2. Assign the "C" prefix to AFSCs upon approval from MAJCOM FCC Program Manager. This provides MAJCOM functional manager and unit senior maintenance managers visibility of squadron FCC SDAP positions. ***NOTE***: FCC SDAP positions do not effect a unit's manpower authorizations.

14.18.5.5.2. **(ANG)** The number of FCCs will be determined by MDS using the following formula: 2 x crew ratio x PAI (2 equals FCC crew size per aircraft). The number of FCCs in each qualifying AFSC will be determined by the MDS Maintenance Council, and NGB/A4PE will determine the grade spread of the approved "C" coded positions.

14.18.5.6. Squadron commanders:

14.18.5.6.1. Control their squadron FCC program IAW AFI 36-3017, AFMAN 36-2108 and this instruction.

14.18.5.6.2. Ensure FCCs fly only when needed for the mission.

14.18.5.6.3. Appoint and remove FCCs IAW AFMAN 36-2108. Assign FCCs for a minimum of 1 year, unless removed for cause. If removed, they may not be reassigned for a period of 1 year.

14.18.5.6.4. Ensure only qualified FCCs and assistant FCCs who meet minimum requirements in AFI 36-3017 receive SDAP. In addition, FCCs must fly a minimum of three qualifying missions per quarter. An indicator of having too many FCCs may be reflected in a unit whose FCCs routinely do not meet minimum quarterly requirements.

14.18.5.6.5. Normally, assign no more than two FCCs per aircraft (an FCC and assistant FCC) to each qualifying mission unless approved by MAJCOM. ***EXCEPTION:*** SQ/CC may assign the minimum number of additional FCCs when required to maintain proper work-rest cycles or meet TO requirements.

14.18.5.6.6. Appoint a unit program manager.

14.18.5.7. Unit program managers:

14.18.5.7.1. Track status and prepare unit report.

14.18.5.7.2. Ensure personnel possess the appropriate SEI for their MDS aircraft.

14.18.5.7.3. Provide a letter to their Installation Manpower and Quality Office and an information copy to MAJCOM Program Manager to change, add, or delete a "C" prefix to the AFSC on the UMD.

14.18.5.7.3. **(ANG)** Units will submit these requests to the appropriate MDS Maintenance Council Chair for coordination to change the MDS configuration.

14.18.5.7.3.1. The letter will contain the unit designation, function account code, AFSC, position number, and a POC.

14.18.5.7.4. Ensure FCCs and assistant FCCs are aligned in a duty position with a "C" prefix by initiating an AF IMT 2096, **Classification/On-the-Job Training Action**, or special order.

14.18.5.7.5. Counsel FCCs and assistant FCCs on SDAP termination. (AFI 36-3017, Table 3 lists reasons for termination.) SDAP stops on the dates listed in this table. As long as a "C" prefix is attached to an AFSC the member shall receive SDAP.

14.18.5.7.6. Review, update, and authenticate the monthly SDAP roster. ***NOTE*:** If changes are made on the monthly SDAP roster, an AF IMT 2096 or special order must be submitted to the MPF.

14.18.5.7.6.1. Authentication of the monthly SDAP roster validates that each FCC is meeting the full intent of the program. The SDAP roster is the only administrative tool used to continue or stop a FCC pay entitlement. ***NOTE***: AFI 36-3017 provides commanders conditions concerning pay entitlements.

14.18.5.7.7. Submit SDAP position increase/decrease requests to MAJCOM OPR by message, e-mail, or letter stating the number of positions to be increased/decreased with a brief justification. MAJCOMs will forward requests to HQ USAF/A4MM for final approval.

14.18.5.7.7. **(ANG)** N/A to ANG. The following only applies to ANG. Submit requests to NGB/A4PE by e-mail, or letter stating the number of positions and justification.

14.18.5.7.8. Provide information for processing DD Form 1610, **Request and Authorization for TDY Travel of DoD Personnel**, for FCCs. ***NOTE:*** Aeronautical orders do not apply to this program, as FCCs are not aircrew members.

14.18.5.7.9. Ensure TDY orders authorize FCC to travel in mission essential ground personnel (MEGP) status

14.18.5.7.10. Monitor training qualifications and currency to ensure only qualified FCCs are scheduled for missions.

14.18.5.7.10.1. As a minimum, maintain a folder for each FCC containing training qualifications and annual indoctrination course currency, immunizations, military passport information, appointment letters, and FCC Mission Reports. If the unit mobility section already maintains these source documents, either electronic or paper copies may be maintained.

14.18.5.7.11. Coordinate scheduling of FCCs through flight chiefs and Operations scheduler.

14.18.5.7.12. Maintain a Unit FCC Program Manager's Continuity Book which will include as a minimum: lists of required instructions with web addresses (including AFI 36-3017, AFMAN 36-2108 and this instruction); FCC program manager appointment letter, AF IMT

2096 or special orders; manpower correspondence assigning "C" prefix AFSC; quarterly and annual FCC status reports, SDAP position requests and miscellaneous FCC and SDAP correspondence.

14.18.5.7.13. Report program status by fiscal year (FY) quarters to MAJCOM Program Manager NLT the 15th day of the month following each FY quarter and report FY annual program status to the MAJCOM NLT 15 July each year. Annual report will consist of the previous FY 4th quarter and current FY 1st, 2nd, and 3rd quarters (1 Jul - 30 Jun).

14.18.5.7.14. Submit funding requests for flight clothing, per diem, and other related expenses for the annual budget. (For safety during flight, flight clothing is mandatory for FCCs and Assistant FCCs).

14.18.5.8. Installation Manpower and Quality Office will:

14.18.5.8.1. Forward ACN to MAJCOM to add, delete, or change "C" prefixes on AFSCs existing on the UMD.

14.18.5.8.1. **(ANG)** N/A to ANG.

14.18.5.9. MPF will:

14.18.5.9.1. Update SDAP program actions in the Personnel Data System as prescribed in AFI 36-3017 and AFMAN 36-2108.

14.18.5.9.2. Produce a monthly SDAP roster for SQ/CC certification.

14.18.5.9.3. Resolve differences between base, HAF, and Joint Uniform Military Pay System (JUMPS) data files.

14.18.5.9.4. Notify unit 90 days in advance when SDAP decreases or terminates.

14.18.5.10. En route supervisors:

14.18.5.10.1. Will not assign FCCs to work other en route aircraft. However, FCCs left at an enroute location and awaiting transportation, may be assigned to work other en route aircraft (N/A to ANG).

14.18.5.10.2. Will brief FCCs on local safety precautions, maintenance practices, and limitations.

14.18.5.10.3. Coordinate with the FCC and aircraft commander on a work/rest plan and transportation to quarters.

14.18.5.11. Aircraft commanders (ACs) will ensure the following:

14.18.5.11.1. Establish with the FCC and en route/transient supervisor a work/rest plan based on maintenance and mission requirements. The AC will be the primary decision authority to determine when the FCC begins a rest cycle for the next mission.

14.18.5.11.1.1. Upon arrival at en route/transient locations, the FCC's primary job is preparing the aircraft (e.g., inspect, service, aircraft forms maintainance) for the next mission. FCCs do not automatically enter crew rest with the aircrew upon arrival at an en route/transient location unless the duty day was exceeded.

14.18.5.11.1.2. If the FCC's safety is jeopardized by fatigue, the FCC's duty day must end.

14.18.5.11.1.3. Any official business required by the FCC interrupts the FCC's rest period. This includes official business conducted on the telephone. Any interruption must be made only under the most exceptional circumstances.

14.18.5.11.2. Arrange quarters with the crew and inform the FCC of billeting location.

14.18.5.11.3. ACs will provide feedback on the FCC using AFI 21-101 **Attachment 3** and return it to the squadron FCC Program Manager upon return to home station.

14.18.6. FCC qualifications and responsibilities.

14.18.6.1. Primary FCC:

14.18.6.1.1. Normally a SSgt or TSgt 5- or 7- skill-level. Qualified technicians of higher rank are eligible. The MXG/CC may waive SrA technicians in exceptional cases.

14.18.6.1.2. As a minimum, the primary FCC must be qualified and certified on the following MDS applicable items:

14.18.6.1.2.1. Possess a SEI of the aircraft assigned to the FCC.

14.18.6.1.2.2. Refuel/defuel member and supervisor; concurrent servicing supervisor (as applicable).

14.18.6.1.2.3. Tow member, tow supervisor, and tow brake operator.

14.18.6.1.2.4. LOX/GOX servicing, nitrogen and tire servicing.

14.18.6.1.2.5. Tire and brake change; launch; recovery; marshalling; pre-flight, thru-flight and post-flight inspection.

14.18.6.1.2.6. APU/GTC/ATM operation/quick air start system.

14.18.6.1.2.7. Engine run.

14.18.6.1.2.8. Kneeling operation and cargo door/ramp/visor operation on applicable MDS.

14.18.6.1.2.9. Ensure aircraft forms are maintained and updated IAW TO 00-20-1. Clear Red X discrepancies, perform IPIs, clear repeat/recur discrepancies, clear CND discrepancies.

14.18.6.1.2.10. All applicable powered/non-powered AGE.

14.18.6.1.2.11. Qualified to operate, troubleshoot, service, and perform maintenance on their aircraft’s critical systems as required by the MAJCOM.

14.18.6.2. Assistant FCC qualifications and responsibilities.:

14.18.6.2.1. May be a 5-level A1C or above with at least a SEI on their assigned aircraft, and must accompany a fully qualified FCC.

14.18.6.2.2. As a minimum, the assistant FCC will be qualified and certified on the following MDS applicable items:

14.18.6.2.2.1. Refuel/defuel member.

14.18.6.2.2.2. Tow member and tow brake operator.

14.18.6.2.2.3. LOX/GOX servicing, nitrogen and tire servicing.

14.18.6.2.2.4. Tire and brake change; launch; recovery; marshalling; pre-flight, thru-flight and post-flight inspection.

14.18.6.2.2.5. APU/GTC/ATM operation/quick air start system.

14.18.6.2.2.6. Cargo door/ramp/visor operation on applicable MDS.

14.18.6.2.2.7. All applicable powered/non-powered AGE.

14.18.7. Work/rest plan (also see **Chapter 1** of this instruction):

14.18.7.1. The FCC duty period starts when the FCC shows at the aircraft prior to departure.

14.18.7.2. Rest is defined as the condition, which allows an individual the opportunity for a minimum of 8 hours of uninterrupted sleep in every 24 hours. Any interruptions must be made under the most exceptional circumstances.

14.18.7.3. Maximum shifts under normal conditions are 12 hours, but may be extended for mission requirements. Flying time is considered duty time. The AC is the decision authority for extended shifts.

14.18.8. MAJCOM Program reporting.

14.18.8.1. MAJCOMs will forward a yearly report to HQ USAF/A4MM by 15 August. Use previous FY 4th quarter; and current FY 1st, 2nd, and 3rd quarters. Late reports may postpone FCC waiver requests. Refer to **Attachment 4** and **Attachment 5** for reporting criteria.

14.18.9. Waivers.

14.18.9.1. Forward unit waiver requests to the MAJCOM FCC program manager, who will either disapprove/return to unit, or recommend approval/forward to HQ USAF/A4MM for final approval.

14.18.9.1.1. All approved waivers are reviewed annually as part of the annual report unless otherwise stipulated by the approval authority.

14.18.9.1.2. Waiver renewals: submit a brief justification for waivers requiring renewal.

14.19. Foreign Object Damage (FOD) Prevention Program. The WG/CV is responsible for ensuring an effective FOD prevention program is established. All personnel (military, civilian, and contractors) working in, on, around, or traveling through areas near aircraft, munitions, AGE, engines, or components thereof will comply with FOD prevention. This section establishes minimum requirements for a FOD prevention program.

14.19.1. Definition. FOD: Any damage to an aircraft, engine, aircraft system, component, tire, munitions, or SE caused by a foreign object(s) (FO) which may or may not degrade the required safety and/or operational characteristics of the aforementioned items.

14.19.2. FOD Prevention.

14.19.2.1. While maintenance is being performed on aircraft, uninstalled engines, and AGE, openings, ports, lines, hoses, electrical connections, and ducts will be properly plugged or capped to prevent FO from entering the systems, both installed or when removed for storage. **At no time will items, (e.g., aircraft forms binders, VTR tapes, checklists, tools.), be placed in or on**

engine intakes. ***NOTE:*** Does not apply to technicians performing maintenance, inlet inspections and blade blending requiring lights, files, or other tools inside aircraft inlets. Inventory all items prior to entering the inlet and immediately upon exiting the inlet.

14.19.2.2. Install intake plugs, or tape and barrier paper (as required by technical data) prior to performing maintenance in or around engine intakes. Ensure engine inlet run-up screens and anti-personnel guards are used IAW applicable weapon system TOs.

14.19.2.3. Prior to engine start and after engine shutdown on maintenance and test cell runs, and after any engine intake maintenance, each affected engine intake and exhaust will receive a FOD (intake/inlet/exhaust) inspection. The FOD inspection will be documented with a Red X symbol in the applicable form (AFTO Form/IMT 781A and the MIS). FOD inspections performed on uninstalled test cell engines will be documented on the test cell worksheet.

14.19.2.4. Covers (e.g., engine, pitot tube(s) to include ejection seat) will remain installed on aircraft as close to crew show as possible to prevent FOD, based on MDS and local MXG/CC guidance.

14.19.2.5. Use a light source of sufficient illumination to inspect the aircraft intakes and exhaust for FO/FOD. A pocketless, zipperless, buttonless bunny-suit, cloth over-boots or stocking feet, boots removed, for intakes only, will be worn whenever physical entry into an aircraft intake or exhaust is required. Suits are not required to be worn if personnel do not physically enter these areas. (A rubber mat may be used instead of cloth over-booties, or boots removed if MDS tech data directs.) When performing intake inspections while wearing a chemical ensemble (CWE), ensure all pockets are emptied and accessories removed. ***NOTE***: If CWE metal zippers are exposed, cover them with any type of tape and account for the tape upon completion of the inspection.

14.19.2.5. **(ANG)** Empty all BDU pockets and remove all accessories. Ensure bunny suit is metal free

14.19.2.6. Restricted area badges will be removed when performing intake/inlet/exhaust inspections if personnel physically enter these areas. Restricted area badges will be secured with a subdued nylon/cotton cord or plastic armband.

14.19.2.6. **(ANG)** Restricted area badges will be secured with a subdued nylon/cotton cord, plastic armband or break-away neckstrap with or without holder. Removable metal clips are not authorized.

14.19.2.7. Each base will develop a local flightline clothing policy aimed at FOD prevention. Specific attention will be given to the wearing of hats on the flightline and the wearing of badges and passes. Climate and safety will be considered.

14.19.2.7.1. Metal insignias/badges will not be worn on the flightline.

14.19.2.7.2. Wigs, hairpieces, metal hair fasteners, earrings, or any other jewelry that may fall off without notice, are not authorized on the flightline.

14.19.2.7.3. Escorts of visiting personnel will ensure FOD prevention measures are taken.

14.19.2.8. Discard readily removable (slide or pressure fit) pocket clips from tools (e.g., flashlights, continuity testers, small screwdrivers) prior to placement in tool kits. Do not disassemble/damage tools for sole purpose of removing clips, rubber switch guards, etc.

14.19.2.9. All maintenance production areas must have locally approved FO containers readily accessible to workers. All vehicles normally driven on the flightline must be equipped with secured and lidded FO containers and stenciled with the word "FOD" in contrasting letters no smaller than two inches IAW AFI 24-302. Back shops may locally manufacture small FO containers that can be used when an area collection can is not feasible. These containers must be stenciled with the word "FOD" in contrasting letters no smaller than two inches. All FOD containers, regardless of location, will be emptied when full or once a day, whichever comes first.

14.19.2.9. **(ANG)** N/A to ANG. The following only applies to the ANG. All maintenance production areas must have a waste recepticle or container/bag readily accessible to workers for waste and FO prevention efforts. All vehicles normally driven on the flightline must be equipped with secured and lidded FO containers/bag and stenciled with the word "FOD" in contrasting letters no smaller than two inches IAW AFI 24-302. All containers, regardless of location, will be emptied when full or once a day, whichever comes first.

14.19.2.10. Control all work order residue used on or around aircraft, uninstalled engines, and AGE.

14.19.2.11. Rags will be controlled and accounted for IAW **Chapter 10** of this instruction. Rag control applies to all organizations and personnel performing aircraft, munitions, and equipment maintenance.

14.19.2.12. FOD walks are mandatory to remove FO from ramps, runways, and access roads; in addition vacuum/magnetic sweepers or sweeping by hand are highly encouraged to supplement FOD walks.

14.19.2.13. When FOD is discovered on a transient aircraft, depot input/output, or a "Queen Bee, ERRC, or CIRF" engine, the host FOD monitor or aircrew must notify the owning organization immediately. An informational copy of the FOD report must be provided to the owning organization's safety office to ensure compliance with AFI 91-204. Aircrews must ensure proper documentation in the AFTO Form/IMT 781A has been completed.

14.19.2.14. Personal tools not controlled through CTK procedures are NOT authorized on the flightline, or in any maintenance area. (e.g., Mini-Mag type flashlights, Leatherman type multi-tools, buck knives). Mark and control tools or equipment that a work center assigns/issues to an individual IAW MAJCOM supplement. Personally purchased tools are not authorized.

14.19.2.14. **(ANG)** Issued/assigned tools and equipment will be controlled and marked IAW **Chapter 10**, para **10.2.1.8.** of this instruction.

14.19.2.15. Pilots and aircrew members must account for all equipment and personnel items after each flight and ensure any items that become lost during flight are documented in the aircraft AFTO Form/IMT 781A. Follow the guidelines IAW this instruction for items unaccounted for after flight.

14.19.2.16. Ensure local FOD prevention programs address the elimination of FOs in aircraft cockpits and flight decks prior to flight.

14.19.2.17. Use extreme care during engine ground runs. Jet blast and helicopter hover power check areas must be free of debris that could cause FOD.

14.19.2.18. Special emphasis is required for items such as: remove before flight streamer attachment, safing pin condition, hinge pin security, dust and FO prevention cover condition/security, and aircraft forms binder condition. Periodically check these types of items for FO prevention compliance. MAJCOMs will account for Dash 21 equipment and covers IAW AFI 21-103. Weapons expediters must ensure all mission specific safing gear is controlled and accounted for to preclude loss and potential FOD.

14.19.2.19. Vehicle operators will stop and perform a visual FOD inspection on all equipment and tires prior to entering the flight line areas. Wing CVs are the waiver authority for this requirement.

14.19.2.19. **(ANG)** N/A to ANG. The following only applies to the ANG. Vehicle operators will stop and perform a visual FOD inspection on all equipment and tires prior to entering the flight line areas. Rollover inspections of tires are mandatory to fulfill this requirement. There is no waiver authority.

14.19.3. Grounding wires/points:

14.19.3.1. Two allen head screws, or equivalent, will be utilized to secure cable to grounding clip. Coat screws with RTV sealant to prevent screws from backing out. Unused screws will be removed.

14.19.3.1. **(ANG)** Fill screw holes with a sealant to prevent screws from backing out or as an option staking these screws in order to prevent the screw from backing out.

14.19.3.2. All grounding points will be kept clean of debris at all times and should be a high interest item for FOD walks.

14.19.4. Use of magnetic bars on the flightline is optional. If used, the magnetic bars will be towed by, or attached to vehicles primarily used on the flightline. Magnetic bars will be inspected and made FOD free prior to the beginning of each shift. A locally manufactured tool for removing debris from tire treads is authorized for use and will be identified to the vehicle by using the vehicle ID number. Ensure magnetic bars are approved IAW AFI 24-302.

14.19.5. Remove metal identification bands from all tubing, (except aircraft installed egress system components) and cables on the aircraft. Additionally remove metal identification bands from cargo tie-down chains/devices prior to use around aircraft. However, factory installed ID tags attached to cargo chains/devices will remain on the chain/device to identify the type being used. Do not remove manufacturer installed metal identification bands from hydraulic hoses. Hydraulic lines will be marked IAW TO 42E1-1-1, *Aerospace Hose Assembly.*

14.19.5. **(ANG)** Locally manufactured hose assemblies will be marked IAW TO 42E1-1-1, *Aerospace Hose Assembly.*

14.19.6. Use X-ray, borescope, and other equipment to locate FO in inaccessible areas.

14.19.7. FOD Prevention Responsibilities.

14.19.7.1. The WG/CV will be assigned as the FOD Prevention Program Manager and appoint a qualified TSgt (or above), or civilian equivalent, or contractor if designated by PWS, with at least 8 years experience in the maintenance field to the position of FOD monitor and their name will be posted in a prominent place within the unit on a locally developed visual aid.

14.19.7.1. **(ANG)** Locally developed visual aid may be electronic.

14.19.7.2. The WG/CV will:

14.19.7.2.1. Ensure unit commanders and Operations Officer/MX SUPT actively support the FOD Prevention Program.

14.19.7.2.2. Provide local guidance to ensure each FOD mishap is investigated and action taken to solve any underlying problems.

14.19.7.2.3. Review all unit FOD mishap reports and analyze the reports and other data for trends identifing areas requiring management action.

14.19.7.2.4. Coordinate FOD prevention needs with the airfield manager and other agencies when construction is in progress on or near the flightline, or other areas where FOD incidents could occur.

14.19.7.2.5. Ensure FOD prevention is part of QA inspections.

14.19.7.2.6. Coordinate with airfield manager to identify and properly mark FOD check points IAW MAJCOM standards.

14.19.8. FOD Monitor: The location of the FOD Monitor will be within QA. The minimum responsibilities of the wing FOD monitor are:

14.19.8.1. Inform all wing agencies of FOD hazards.

14.19.8.2. Develop wing procedures to document and perform spot checks of selected areas weekly.

14.19.8.2. **(ANG)** Perform spot checks of selected areas monthly.

14.19.8.3. Be involved in each FOD investigation and help ensure corrective actions are sound.

14.19.8.4. Monitor and recommend changes to FOD prevention training. Those units having several types of aircraft assigned will have their FOD prevention training incorporated into one wing training program. Additionally, ensure an initial FOD awareness and responsibilities briefing is given to all newly assigned personnel.

14.19.8.5. Periodically inspect and report damaged pavement, flightline construction, or other hazards in or near aircraft parking ramps or taxiways to the airfield manager and monitor status to ensure timely repairs.

14.19.9. FOD Investigation and Reporting.

14.19.9.1. When suspected or confirmed FOD is discovered, the MOC will be immediately notified. The MOC will notify QA. All aircraft sustaining FOD damage from an unknown cause will be considered for impoundment. If internal engine FOD is confirmed, the engine will be impounded IAW **Chapter 9** of this instruction.

14.19.9.1.1. Units must make every attempt to determine root cause of FOD related mishaps before returning engines and modules to the depot for investigation. If engines/modules are returned to the depot, an information DR will be completed and forwarded. All FOD mishap engines and modules returned to depot must be properly marked on the outside of the packaging as a FOD mishap asset. Mark container or package in RED with the following statement, “FOD Mishap investigation required”.

14.19.9.2. FOD incidents are classified as preventable and non-preventable. Only preventable FOD over $20K (parts and labor) will be chargeable. FODs are considered preventable except those listed below:

14.19.9.2.1. Caused by natural environment or wildlife. This includes hail, ice, animals, insects, sand, and birds. Report this type of damage IAW AFI 91-204. Do not include these in the FOD rates.

14.19.9.2.2. From internal engine materiel failure, as long as damage is confined to the engine.

14.19.9.2.3. Caused by materiel failure of an aircraft component if the component failure is reported as a DR using the combined mishap DR reporting procedures of AFI 91-204 and TO 00-35D-54.

14.19.9.2.4. Found during depot overhaul for maximum operating time.

14.19.9.3. Additionally, the following apply:

14.19.9.3.1. Engine damage caused by improper anti-ice/de-ice procedures by either flight or ground crews are considered preventable.

14.19.9.3.2. Engine or airframe damage caused by gunnery or rocket mission ricochets is considered non-preventable provided mission parameters were not exceeded and range cleaning was sufficient.

14.19.9.3.3. Helicopter engine damage caused by rocks, stones, wood, or other objects ingested during low hover operations are considered non-preventable, provided mission parameters were not exceeded.

14.19.9.3.4. FOD incidences leading to blade blending are reported IAW the blade blending section in this chapter.

14.19.9.4. Preventable FOD incurred at test cell or on trim pad will be chargeable.

14.19.9.5. Appropriate MAJCOM offices will assist in resolving any questionable FOD issues, (i.e., preventable or non-preventable.)

14.19.9.6. Wing FOD monitor will report all FOD incidents to MAJCOM FOD manager by telephone, fax or e-mail as soon as the damage is known, but NLT 24 hours after occurrence.

14.19.9.7. FOD rates are computed by MDS as follows: Number of Preventable FODs (damage exceeding $20K) ÷ Aircraft flying hours X 10,000 = FOD rate.

14.19.9.7.1. MAJCOMs will determine command-reporting procedures.

14.19.9.7.1. **(ANG)** ANG units will report FOD incidents (exceeding $20k) via the Internet at: (**https://guardian.ang.af.mil/home/homeLG.asp**).

14.19.10. FOD Prevention Committee Meeting. The WG/CV is the committee chairperson. The MXG/CC will chair the meeting in the absence of the WG/CV. Minimum attendee representation is all group commanders, director(s), commanders of units with maintenance personnel, safety, CE, Airfield Manager, and security forces. The chairperson designates additional attendees (e.g., agencies, detachments) as required. The host base FOD prevention committee chairperson will incorporate tenant units in the host unit program. Tenant units should establish their own unit FOD committee, but

will still participate in the host program and comply with host program requirements. Meetings will be conducted monthly when the unit exceeds the MAJCOM-established standard, and quarterly if the unit FOD rate is less than the established standard. The meeting will identify negative trends and develop action plans to resolve them. The meeting should also be used to recognize personnel making significant contributions to FOD prevention (e.g. golden bolt program, FOD poster contests, or other FOD recognition programs locally developed at each unit).

14.19.10. **(ANG)** FOD meetings will be conducted quarterly.

14.19.10.1. Suggested agenda items include:

14.19.10.1.1. Total number of airframe, engine, and tire FOD incidents during the reporting period. Indicate quantity and cause. Current status of all other pending incidents will be discussed.

14.19.10.1.2. Mechanical/vacuum sweeper status.

14.19.10.1.3. Review and refinement of the existing FOD prevention program.

14.19.10.1.4. New directives/actions established to minimize FOD.

14.19.10.1.5. Status and condition of engine run-up screens as applicable.

14.19.10.1.6. Results of X-rays for FOs during engine bay inspections, acceptance inspections, and phase inspections. Maintenance trends should be discussed when an increase in FO is discovered during these X-rays.

14.19.10.1.7. Identification of potential FOD sources.

14.19.10.1.8. Lost tools/items.

14.19.10.1.9. Increased potential for FOD within the next 30-60 days.

14.19.10.1.10. Dropped objects. Pay particular attention to those that result in downstream FOD.

14.19.10.1.11. Breakdown of FOD inspections/assessments.

14.19.10.1.12. Cockpit FO incidents.

14.19.10.1.13. Commanders comments.

14.20. Forms Documentation

14.20.1. Repeat/Recur discrepancies. Clearing these types of discrepancies requires additional supervisory involvement to ensure thorough troubleshooting. Only 7-skill level or higher and/or equivalent civilian personnel will clear symbols IAW TO 00-20-1. ***EXCEPTION:*** The MXG/CC may appoint 5-skill level SrA assigned as a FCC to clear these repeat/recur discrepancies.

14.20.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Clear Repeat/Recur discrepancies. These types of discrepancies require additional supervisory involvement to ensure thorough troubleshooting. Only 7-skill level or higher personnel can clear the appropriate symbol IAW TO 00-20-1 and will be identified on the SCR. ***EXCEPTION:*** The MXG/CC may appoint 5-skill level SrA assigned as a FCC to clear these repeat/recur discrepancies when off station.

14.20.2. Cannot Duplicate (CND) Discrepancies. Personnel will make every effort to duplicate the circumstances that created the reported discrepancy.

14.20.2.1. When a discrepancy cannot be duplicated, the technician will document "Cannot Duplicate Malfunction" or "CND" in the corrective action block, and ensure the symbol is cleared IAW TO 00-20-1.

14.20.2.1. **(ANG)** These types of discrepancies require additional supervisory involvement to ensure thorough troubleshooting. Only 7-skill level or higher shall clear the symbol IAW TO 00-20-1 and will be identified on the SCR. ***EXCEPTION:*** The MXG/CC may appoint 5-skill level SrA assigned as a FCC to clear CND discrepancies when off station.

14.20.2.2. When any corrective action involves more than one work center, personnel having the primary responsibility for repair must not initial over the symbol until personnel from all participating work centers have completed and documented their work. Each work center must make a separate form entry referencing the original discrepancy. The additional form entries must be referenced in the corrective action block of the original discrepancy.

14.20.3. In-Process Inspections (IPI).

14.20.3.1. An IPI is an additional inspection or verification step at a critical point in the installation, assembly, or reassembly of a system, subsystem or component. These inspections are either TO, MAJCOM, or locally directed and are accomplished by qualified personnel as identified on the SCR. The weapon system lead command as defined in AFPD 10-9 will determine minimum IPI requirements and incorporate these requirements into applicable TOs. Operations Officer/MX SUPT compiles a list of squadron tasks requiring IPIs. The list must include WUC, nomenclature, specific TO, paragraph, and step number within the TO task where the IPI will be called for. When developing the IPI list, consult with QA on trends or problem areas that continually warrant extra supervisory attention. Squadrons submit their on- and off-equipment lists to QA for consolidation, MXG/CC approval, and publication as the group IPI listing. IPIs must be reviewed annually for applicability. (Some IPIs are already specified in applicable technical data.) There is no requirement to include TO-directed IPI tasks in the local listing.

14.20.3.2. Document the IPI due in the discrepancy block of the original discrepancy or as a separate entry in the AFTO Form/IMT 781, AFTO IMT 244 or appropriate work package and in the MIS. Reference the TO page and item number for all required IPIs.

14.20.3.2.1. If the IPI is a separate entry in the AFTO Form/IMT 781A, AFTO IMT 244, or appropriate work package, the following procedures apply: In the original discrepancy, reference the page and item numbers of all required IPIs. Place the IPI on a Red X. Ensure the IPI entry references the original discrepancy. The person performing the task notifies a qualified IPI inspector at the appropriate step. The IPI inspector complies with the IPI and documents IPI compliance in the "Corrective Action" block of the form and signs the "Inspected By" block.

14.20.3.2.2. For IPIs documented in the original discrepancy, the person performing the task documents the required IPI step and notifies a qualified IPI inspector at the appropriate step. The inspector complies with the IPI and enters their minimum signature IAW TO 00-20-1 next to the IPI statement in the “Corrective Action” block.

14.20.3.3. Document the IPI before leaving the job site.

14.20.3.4. The technician who ultimately clears the original discrepancy will ensure all applicable IPIs were completed and properly documented.

14.20.3.5. For maintenance actions where a different work center is required to perform an IPI, the prime work center creates a WCE or job for the IPI.

14.20.3.6. Individuals signing the Red X and IPI do not have to be the same.

14.20.3.7. IPI documentation for off-equipment maintenance will be accomplished as follows:

14.20.3.7.1. IPIs will be documented in the same manner as on-equipment IPIs, utilizing the AFTO Form 350.

14.20.3.7.1. **(ANG)** Off-equipment IPIs will be documented using the MIS, e.g. job flow package, JSTs.

14.20.3.7.2. Document engine off-equipment IPIs in the engine work folder. IPI documentation in the MIS is not required for off-equipment engine work.

14.20.3.7.3. Tactical missile IPIs are documented in the TMRS. Ensure the step that requires the IPI and the employee number are identified on the documentation.

14.20.4. Aircraft modified for service tests will have a 3- by 5-inch red-bordered placard affixed to the front side of the AFTO Form/IMT 781F, **Aerospace Vehicle Flight Report and Maintenance Document**. The placard will state the type of modification and installed equipment.

14.20.4. **(ANG)** Or entered on the AFTO Form/IMT 781A Info Notes Page.

14.20.5. All Red X discrepancies will be cleared from the aircraft forms prior to flight. Every effort will be made to clear Red X discrepancies from the MIS prior to flight.

14.20.6. The work center supervisor and section chief will ensure all descrepancies, completed maintenance actions, inspections, serially controlled components, TCTOs, deferred discrepancies, etc., are documented in input in the MIS as soon as possible, but no later than the end of the current duty day.

14.20.7. **(Added-ANG)** Review aircraft IMTs/forms to determine status prior to beginning any maintenance on an aircraft. Forms should be present at the aircraft whenever maintenance is performed.

14.21. Ground Instructional Trainer Aircraft (GITA).

14.21.1. Permanently assigned GITA aircraft are those aircraft that are not maintained in airworthy condition. Active GITA are maintained in system/subsystem operational condition for purposes of maintenance training and normally carried in possession code "TJ". Inactive GITA are aircraft permanently grounded for use in personnel training and normally carried in possession code "TX". This section does not apply to ABDR training aircraft. ABDR training aircraft are managed by HQ AFMC/A4RE-PO. This chapter does not apply to training equipment maintained by CLS contracts administered by commands other than AETC.

14.21.1.1. Temporarily Grounded (active). Temporarily grounded aircraft are subject to recall to the active fleet and are in assignment code "TJ" IAW AFI 16-402.

14.21.1.1.1. Only those items requested by the ALC PM will be considered for removal. If the item does not affect training and if approved by group commander, the part will be removed and turned in as per ALC PM instructions.

14.21.1.1.2. Units are responsible for storing uninstalled or removed equipment that is not required for training.

14.21.1.2. Permanently Grounded (inactive). Permanently grounded aircraft are those declared excess to future operations or flying requirements by HQ USAF. Aircraft in this category will be redesignated by the addition of the prefix G to the basic MDS and identified with assignment code "TX". Permanently grounded missiles retain their original MDS without a prefix. ***NOTE:*** Aircraft that have been terminated from the AF inventory IAW AFI 16-402, will not be reported as GITAs. Any questions about the designation of an aircraft used for training should be directed to the MAJCOM AVDO.

14.21.1.2.1. Upon assignment of a permanently grounded GITA, the PM will initiate a preliminary "save list," identifying items to be removed and turned in to LRS.

14.21.1.2.2. If an item on the save list is not removed, annotate the reason for not removing it and coordinate with the applicable PM and group commander. If items on the save list are required for training and an unserviceable item will suffice, units should inform the PM. Identify all unserviceable components furnished by ALC in a conspicuous manner (Red X or Red dot system).

14.21.2. Group Commander Responsibilities:

14.21.2.1. Develop an instruction to define the scope of group training functions for GITA use; functional responsibility for funding, operations, maintenance, and records management.

14.21.2.2. The owning commanders are responsible for the maintenance of GITA used in support of training. Owning units that do not have organic maintenance capability will establish a SA or MOA assigning maintenance responsibility. GITA maintenance includes on- and off-equipment maintenance of active systems and subsystems and necessary actions to maintain the aircraft in a safe and presentable condition.

14.21.2.2.1. Determine which system and subsystem are required to support the training. Consider present, future, and cross-utilization of systems when making determinations. These systems will be maintained in the same configuration as operational equipment.

14.21.2.2.2. Ensure explosive components are removed that are not required to support training requirements.

14.21.2.2.3. Place retained systems and subsystems not currently being used for training into extended storage IAW technical data.

14.21.2.2.4. Ensure standard maintenance practices regarding inspection appearance, cleanliness, ground safety, and prevention of corrosion are met. Corrosion control procedures are outlined in TO 1-1-691, *Aircraft Weapons System-Cleaning and Corrosion Control*.

14.21.2.2.5. Develop and prepare inspection technical data check lists for use in inspecting the condition and safety of equipment before use and ensure inspections are performed. Prior-to-use inspections are conducted by the using organization employing a tailored weapon system pre-/post-dock checklist. Conduct periodic maintenance inspections using a tailored work deck.

14.21.2.2.6. Prepare a separate memorandum for each GITA, addressed to the appropriate ALC PM for the aircraft and inform them of the systems and subsystems that will be main-

tained in operational configuration. When changes in requirements occur, initiate a new memorandum. Provide copies of all GITA memorandums to the MAJCOM AVDO.

14.21.2.2.7. Ensure air and space vehicle inventory reporting IAW AFI 21-103 as required for ground trainers. Aircraft used for ground trainers are exempt from status and utilization reporting.

14.21.2.2.8. Ensure maintenance actions are documented IAW 00-20 series TOs. Use of MIS for GITA records management is mandatory. Owning units not having maintenance capability will establish SAs or MOAs.

14.21.2.2.9. Ensure timely completion of TCTOs on systems designated for configuration management and proper configuration status accounting is maintained. Accomplish TCTOs on systems not designated for configuration management as required to ensure safety of operation or as directed by PM on aircraft coded as "TJ".

14.21.2.2.10. Ensure proper coordination and documentation of parts removed from training aircraft are accomplished as follows:

14.21.2.2.10.1. When an item is removed or replaced, supervisors ensure this action is documented in the aircraft forms. Include the authority for removal (e.g., message number, telecon, letters, and dates) and condition of installed/replacement items.

14.21.2.2.10.2. When the limited save list actions have been done, forward a copy of the completed list to the documentation function. This copy becomes part of the historical records. Also forward a second copy to the appropriate ALC/PM.

14.21.2.2.10.3. Ensure W&B handbook requirements are complied with IAW TO 1-1B-50 and applicable -5 series TOs.

14.21.2.2.10.4. Ensure operating and maintenance technical data are readily accessible whenever the GITA is in use or undergoing inspection.

14.21.2.2.10.5. Identify an individual to oversee GITA as an additional duty. Individual must possess the technical expertise, management skills, and leadership ability to assure quality maintenance standards of equipment condition, reliability, and safety are attained. Individual is responsible to accomplish and/or coordinate maintenance actions for the GITA, ensure GITA documentation is accurate and complete, and be qualified to operate GITA systems and appropriate support equipment to conduct GITA maintenance.

14.21.2.3. For equipment designated as trainers, only the systems required for technical training (or those required to ensure safety or system integrity) need to be maintained. (This does not apply to "temporarily" grounded aircraft or operational equipment or systems on loan from MAJCOMs or ALCs.)

14.21.3. Technical Data Applicability:

14.21.3.1. Operational systems on GITAs will be maintained IAW applicable technical data. The specific policy governing the use and modification of technical data is contained in TO 00-5-1. Some systems may be operated and maintained with original contractor data because formal technical data was never developed and/or the contractor data was never assigned a TO number.

14.21.3.2. Inspection and lubrication requirements on TX coded aircraft may be adjusted to correspond with training requirements and equipment usage and to prevent over or under inspection. Additionally, where significant savings may be achieved, the commander or contract project manager (in coordination with the functional commander or director) may authorize deviations or changes to technical data requirements, including substitution of materials. In all cases, safety or design function must not be compromised. Maintain documentation authorizing deviations.

14.21.3.3. TCTOs. The QA function or other designated agency is responsible for determining applicability of TCTOs for GITAs.

14.22. Hangar Queen Aircraft.

14.22. (ANG) Hangar Queen Aircraft. N/A to the UAE F-16 block 60 program and the RNAF owned F-16 aircraft.

14.22.1. General. The objective of this program is to ensure the entire fleet remains healthy and all possible management actions are carried out to ensure aircraft do not remain inoperative for extended periods. MAJCOMs will establish a Hangar Queen program.

14.22.2. Definitions:

14.22.2.1. A Hangar Queen is a unit-possessed aircraft that has not flown for at least 30 calendar days. Aircraft are exempt from accruing Hangar Queen time for up to ten days immediately following DFT/CFT repair or maintenance; however, if an aircraft is not flown after the tenth day, the ten days are included in the total number of days since last fly date to determine the Hangar Queen category computation. All aircraft placed on higher HQ alert status are exempt from Hangar Queen reporting. Additionally, aircraft with low observable (LO) technology (e.g., B-2, F-22A) placed on or postured for higher HQ/local alert status taskings are exempt from Hangar Queen reporting throughout the duration of alert status/posturing. An aircraft is released from Hangar Queen status after the first flight. MAJCOM Weapons System Functionals shall report to HQ USAF/A4MY (using e-mail address "**MERLIN@DRC.COM**"; SUBJECT: "Alert Aircraft, MAJCOM, MDS, Tail Number"; do not report location) aircraft that have not flown within 30 calendar days as of the last day of the month due in part to alert status. Send a separate e-mail for each aircraft and provide this information no later than the 10th calendar day of the following month. Content of the e-mail shall include alert start date, MAJCOM point of contact, and DSN telephone number. A few examples are provided to clarify when an aircraft becomes a Hangar Queen.

14.22.2.1.1. A unit-possessed aircraft has not flown for 20 calendar days, enters depot status for 5 more calendar days, and then returns to unit possession on the 26th non-fly day; the unit has up to 10 calendar days to fly the aircraft to avoid Hangar Queen status. If this aircraft does not fly on the 10th calendar day (35th non-fly day), the aircraft would become 36-day Category 1 Hangar Queen on the next day.

14.22.2.1.2. A unit-possessed aircraft has not flown for 2 calendar days, then enters depot status for 1 calendar day and is returned to unit possession, the unit must fly the aircraft in the next 27 calendar days to avoid becoming Category 1.

14.22.2.2. Hangar Queen aircraft are further defined by three categories:

14.22.2.2.1. Category 1 -- Aircraft that have not flown for 30 to 59 calendar days.

14.22.2.2.2. Category 2 -- Aircraft that have not flown for 60 to 89 calendar days.

14.22.2.2.3. Category 3 -- Aircraft that have not flown for 90 or more calendar days.

14.22.3. When an aircraft becomes identified as a Hangar Queen, management must intensify their efforts to alleviate the condition as soon as possible (e.g., mission impact letters, MAJCOM and item manager assistance). Aircraft last fly day shall be accessible through the AF Portal Fleet Asset Status Gadget.

14.22.3.1. When an aircraft becomes a Category 1 Hangar Queen, establish a maintenance recovery plan that minimizes the time needed to get the aircraft airborne. Assign a Hangar Queen manager (typically the aircraft's crew chief) to implement the plan. Forming a temporary dedicated recovery team is also an option. Ensure strict management, control, and documentation of all CANNs, transfer, and diversion actions from the Hangar Queen aircraft. Brief aircraft maintenance and supply status to the SQ/CC daily and weekly to the MXG/CC and WG/CC. Category 1 aircraft are managed locally.

14.22.3.2. When an aircraft becomes a Category 2 Hangar Queen, assign a SNCO or officer (or civilian equivalent) to manage the Hangar Queen. The MXG/CC or designated representative must approve any further CANNs, transfer, and diversion actions from the Hangar Queen aircraft. Brief aircraft maintenance and supply status at the daily wing standup meeting. Units will report aircraft tail number(s) monthly to the MAJCOM Weapons System Functionals with the estimated delivery dates for top down-time driver (AWP) parts.

14.22.3.2. **(ANG)** N/A to the ANG. The following only applies to the ANG. When an aircraft becomes a Category 2 Hangar Queen, assign a SNCO or officer to manage the Hangar Queen. The MXG/CC or designated representative must approve any further CANNs, transfer, and diversion actions from the Hangar Queen aircraft. Brief aircraft maintenance and supply status at the wing standup meeting. ANG Hangar Queen Category 1, 2, 3 will be reported with comment at web site: (**https://logistics.ang.af.mil/LGM/HangarQueens**) (requires an account (user ID and password) available on this site).

14.22.3.3. When an aircraft becomes a Category 3 Hangar Queen, aircraft maintenance and supply status will be briefed at the daily wing standup meeting. Units will report aircraft tail number(s) monthly to the MAJCOM Weapons System Functionals with the estimated delivery dates for top down-time driver (AWP) parts. The MAJCOM will report to HQ USAF/A4M (using e-mail address: "AF/A4M Workflow"); SUBJECT: "Category 3 Hangar Queen, MAJCOM, MDS, Tail Number"). Send a separate e-mail for each Category 3 Hangar Queen aircraft. Include the MAJCOM's POC and DSN telephone number.

14.22.3.3. **(ANG)** N/A to the ANG. The following only applies to the ANG. Brief aircraft maintenance and supply status at the wing standup meeting. ANG Hangar Queen Category 1, 2, 3 will be reported with comment at web site: (**https://logistics.ang.af.mil/LGM/HangarQueens**) (requires an account (user ID and password) available on this site). NGB/A4M will report Category 2 and 3 Hangar Queen status to the Air Staff.

14.22.4. Ensure applicable Dash 6 and 00-20 series TO requirements and TCTOs are accomplished.

14.22.5. Inform the MOC of any change in aircraft status.

14.22.6. MXG/CC will determine the need for an FCF/OCF (if not otherwise required by the aircraft specific TO).

14.22.7. Perform a final review of all aircraft forms initiated since the last flight prior to the first flight.

14.23. Hot Refueling Procedures.

14.23.1. Hot refueling is the transfer of fuel into an aircraft having one or more engines running. The purpose of hot refueling is to reduce aircraft ground time, personnel and equipment support requirements and increase system reliability by eliminating system shut down and subsequent restart. Refer to the following sources for additional guidance: TO 00-25-172, TO 00-25-172CL-4, *Checklist, Aircraft Servicing with USAF R-5, R-9, and R-11 Fuel Servicing Vehicles*, TO 37A9-3-11-lCL-l, *Checklist, Operational and Organizational Maintenance Hot Refueling and Hot Integrated Combat Turn-Around Procedures, Aircraft Fuel Servicing Unit Type GRU 17/E Pantograph PACAF Type IV Hydrant Servicing*, and AFOSHSTD 91-100. Units possessing A/OA-10, F-15, F-16, and F-22A combat coded "CC" or E-4B combat support coded "CA" aircraft certified for hot refueling develop and maintain the capability to quickly and safely hot refuel those assigned aircraft (applicable to ANG if tasked). This requirement also applies to training funded "TF" units having specific contingency taskings. This section does not apply to concurrent servicing operations used on large-frame aircraft.

14.23.2. PACAF/USAFE ONLY: Main operating bases (MOBs), if OPLAN-tasked sortie rates require, must keep sites certified for hot-pit refueling even if they do not have an active program. Supported Commands must be consulted for exceptions to this direction.

14.23.3. Hot refueling is not accomplished until the location, equipment requirements, and personnel qualifications are certified IAW this instruction and TO 00-25-172.

14.23.3.1. Each base fuels management flight will maintain sufficient hot refueling certified fuels specialists for each squadron authorized to conduct hot refueling.

14.23.3.2. Site Certification. Hot pit refueling sites must be certified IAW TO 00-25-172 and this instruction. The mission support group commander (MSG/CC) will appoint a base site certification team consisting of the following:

14.23.3.2.1. Field grade maintenance officer as the site certifying official.

14.23.3.2.2. Representative from OSS Airfield Management Office, knowledgeable of aircraft taxiways, parking ramp, and hot refuel safe distance requirements.

14.23.3.2.3. Maintenance member with 2AXXX AFSC from MXG QA office, knowledgeable of hot refueling procedures.

14.23.3.2.4. Wing Ground Safety member, minimum SSgt 1S071 or civilian equivalent, task qualified in site certification and knowledgeable of hot refueling operations.

14.23.3.2.5. Fuels management flight member, AFSC 2F0X1.

14.23.3.2.6. Civil engineering member, AFSC 3E271 or civilian equivalent, familiar with aircraft ramp requirements for hot refueling.

14.23.3.2.7. Fire protection member, minimum AFSC 3E771 or civilian equivalent, familiar with fire protection standby requirements in TO 00-25-172 for hot refueling.

14.23.4. The following listing provides questions that must be addressed as part of the site certification. This listing provides pertinent questions for the site, but is not provided as a substitute for TO 00-25-172:

14.23.4.1. Has the aircraft been approved by System Safety Engineering Analysis (SSEA) for hot pit refueling?

14.23.4.2. Is adequate area provided to position the aircraft safely (evaluate ability to reposition due to wind direction)?

14.23.4.3. Is the ramp level to prevent drainage that could cause environmental impact? Request the fire department dump water to verify flow, if questionable.

14.23.4.4. Is the location adequate for the number of aircraft to be serviced?

14.23.4.5. Has a hot brake holding area been established?

14.23.4.6. Is there proper clearance between the hot pit area and hot brake holding area to prevent conflict?

14.23.4.7. Is there proper clearance between the hot pit and Explosive Clear Zone/Hot Cargo Pad/ Airfield Clearance Zones to prevent violations of any area/zone?

14.23.4.8. Is the hot pit adequately clear of the aircraft/vehicle traffic area?

14.23.4.9. Is the hot pit and cursory check area of the ramp clear of FOD potential?

14.23.4.10. Does the location provide for rapid access of emergency equipment and egress of aircraft/equipment?

14.23.4.11. Are adequate grounding points available?

14.23.5. QA is responsible for maintaining site certification documentation and a master listing of all hot pit sites. QA will forward a new consolidated hot pit site certification listing to respective MAJCOMs anytime sites are added, changed, or deleted. Each unit hot refueling site will be certified by a unit certification team, and approved by MAJCOM, when one of the following occurs:

14.23.5.1. Construction of new hot refueling sites.

14.23.5.2. Change in the unit MDS, or when an additional MDS is acquired.

14.23.5.3. Change in refueling equipment.

14.23.5.4. Changes in the certified site(s) area which affect/change the previous certification.

14.23.6. Hot pit site master listing. This listing must contain the following information for all hot pit sites on the installation:

14.23.6.1. All sites must be identified by coordinates on a map. Each facility within the distance identified in TO 00-25-172, must be identified as to its use/contents and its distance in feet from the refueling site/operation. Other refueling sites, aircraft parking areas, etc., also need to be identified. All distances must be shown even if a violation exists. If there are no violations, state so on the request cover letter. Procedures such as aircraft taxi routes should also be shown. Use arrows or dotted lines to show taxi directions, both entry and exit. Address any restrictions to normal operations and actions required IAW TO 00-25-172.

14.23.6.2. State the type of equipment used for hot refueling at each site, (e.g., hose carts, truck). Show the location of any fixed fuel pits and usual location of cart or truck if used. Identify unit-approved sites on the aircraft parking plan. CE, QA, and Airfield Operations maintain copies of hot refueling sites on file.

14.23.6.3. State whether or not all hot refueling areas comply with the quantity-distance separation requirements of AFMAN 91-201 in relation to surrounding exposed sites/potential explosion sites.

14.23.7. Hot refueling requires detailed procedures published in appropriate TOs and unit developed technical data checklists. Unit developed technical data checklists include detailed procedures, normal and emergency, to meet requirements of the local environment.

14.23.7.1. Units forward locally developed technical data checklists to MAJCOMs for approval.

14.23.7.1. **(ANG)** Unit checklists shall be reviewed by NGB/A4MM representative.

14.23.8. Units publish procedures to supplement this section and outline local requirements and additional precautions as necessary for hot refueling, including hot refueling with ordnance, when authorized, IAW TO 00-25-172.

14.23.9. AMXS will ensure hot refueling crews are available to meet mission requirements. MXS maintenance personnel may be used.

14.23.10. HotRefueling Team Members and Duties.

14.23.10.1. Pad supervisor: Responsible for overall supervision of hot refueling operations when two or more aircraft are simultaneously hot refueled on the same pad (multiple hot refueling). Individual will possess a 5-level or higher qualification in an aircraft maintenance AFSC and be hot refueling supervisor "A" member qualified. Supervisors must have full view and control of multiple hot refueling operations.

14.23.10.2. Refuel supervisor "A" member. Individual will be refuel task qualified, capable of supervising hot refuel crew, possess an aircraft maintenance AFSC 5-level qualification and 1 year of flightline aircraft maintenance experience.

14.23.10.3. Refuel crew "B" member. Individual will be refuel task qualified, possess an aircraft maintenance AFSC, and 1 year of flightline aircraft maintenance experience.

14.23.10.4. Fuels specialist 2F0X1, "C" member. Individual will be refuel task qualified.

14.23.10.5. Additional refuel crew "D" member. Individual will be refuel task qualified, possess an aircraft maintenance AFSC, and have 1 year of flightline maintenance experience. Use "D" members as required by applicable aircraft technical data.

14.23.11. Hot refueling team members and QA certifiers/evaluators may be multi-MDS qualified when more than one weapons system is permanently assigned to a squadron. After initial certification on each MDS, personnel must update their hot refueling currency by performing hot refueling on any weapon system. Section NCOICs ensure personnel maintain proficiency on each assigned MDS.

14.23.12. Conducting Hot Refueling Training, Certification and Documentation. [For additional information, refer to AFI 11-235, *Forward Area Refueling Point (FARP) Operations*]. The following apply:

14.23.12. **(ANG)** Hot pit refueling team members must be certified in accordance with TO 00-25-172 and this instruction including **Table 14.2. (Added)**, Hot Refueling Training/Certification Requirements.

14.23.12.1. Conduct qualification training of hot refueling personnel in three distinct phases. Stress safety requirements, emergency procedures and equipment inspection in all three phases of training. Procedures in TO 37A9-3-11-1CL-1, TO 00-25-172, and TO 00-25-172CL-4 are taught to all team supervisors and members. Conduct phase 2 and 3 utilizing joint sessions including 2F0X1 personnel and all maintenance AFSCs. Teach training utilizing joint sessions, using both fuels (2F0X1) and maintenance AFSC instructors. MTF or QA may act as the training OPR for the program.

14.23.12.1. **(ANG)** The MXG/CC designates a unit OPR for hot refuel training.

14.23.12.2. Phase 1: ”Familiarization” phase. Designated instructors familiarize trainees with applicable technical data, procedures and guidance for hot refueling. Place special emphasis on procedures for hot refueling with ordnance loaded, when authorized.

14.23.12.2.1. Phase 2: ”Hands-on” phase. Apply information learned in Phase 1 to develop in-depth knowledge and proficiency in all facets of hot refueling. Include proper operation, preventive maintenance, use of hand signals and emergency procedures. Simulate hot refueling by performing all hot refueling tasks without aircraft engines running (cold pit). Designated instructors demonstrate tasks, require trainees to perform tasks, practice emergency procedures, critique performance and provide additional training as required.

14.23.12.2.2. Phase 3: ”Demonstration/Certification” phase. Actual demonstration of hot refueling under the supervision of designated certifiers with aircraft engine(s) running. Squadron Certifier, certifies individuals upon successful demonstration of hot refueling. If Phase 3 training has not been completed within 30 days (not applicable to ANG) of Phase 2 training, Phase 2 training must be repeated.

14.23.12.3. If required, and in coordination with QA, identify personnel as QA augmentees (squadron certifiers) to train, evaluate, and certify unit personnel. QA ensures augmentees conduct evaluations using procedures outlined in this publication, applicable aircraft TOs and local procedures.

14.23.13. Document training for personnel performing, evaluating, supervising or instructing hot refuel operations as follows:

14.23.13.1. Document all aircraft maintenance and 2F0X1 personnel Phases 1, 2, and 3 initial training in the CFETP. For AFSCs where “refuel aircraft with engines operating” is not contained in the CFETP, use AF IMT 797/MIS to document initial hot refuel training. Track recurring hot refueling certification in the MIS.

14.23.13.2. AFSC 2F0X1 personnel use AF IMT 1098, **Special Tasks Certification and Recurring Training**, to document Phases 1, 2, and 3 initial and recurring hot refuel training. Indicate multiple practical performances by placing a number before the letter in column F. File AF IMT 1098 in individual’s AF Form 623.

14.23.14. Track hot refueling members, by position, on the SCR.

14.23.15. Proficiency, Certifying, and Decertifying Team Members. Unique requirements for hot refuel team members are outlined in MAJCOM supplements.

14.24. IFF Mode IV Program.

14.24.1. The MXG/CC will appoint an IFF Mode IV program manager. Units will perform IFF Mode IV checks on all missions departing Continential United States (CONUS) to overseas locations, on all overseas *theater to theater* missions *(does not include intra-theater flying by overseas based aircraft)*, and all missions flying outside US airspace and returning to CONUS. (Missions that originate in Alaska, Hawaii, or U.S. Territories and do not depart U.S. controlled airspace are viewed as if they are missions remaining in CONUS). Do not launch or enter aircraft into a contingency zone with a known inoperative Mode IV system, unless the contingency Area of Responsibility (AOR) has established procedures governing inoperative/degraded Mode IV capabilities.

14.24.1.1. MAJCOMs will determine requirements for Mode IV systems en-route to depot based on system manager direction.

14.24.1.2. MAJCOMs will determine requirements for IFF Mode IV operational checks at OCONUS assigned units when operational status cannot be validated due to host nation restrictions.

14.24.2. IFF Mode IV maintenance operational checks not accomplished due to lack of maintenance test equipment will be written up in the aircraft forms on a Red Dash. The Mode IV ground operational check will be accomplished at the next overseas location where test assets are available and mission turn-time provides maintenance the opportunity to perform the check.

14.24.2.1. Invalid Mode IV replies will not cause a CONUS training sortie to be aborted; however, a work order will be generated for maintenance after flight.

14.24.2.2. 100 percent of IFF-equipped possessed aircraft will be checked every 2 months.

14.24.2.3. Testing data and results will be maintained for a minimum of 1 year.

14.24.2.4. E-3 aircraft front to back Mode IV testing is adequate for preflight when the back end crew is present. Local flights performed without back end crew must perform external preflight Mode IV tests prior to sortie.

14.24.2.5. OC-135 "OPEN SKIES" Aircraft are exempt from the above program when mission requirements exempt them from keying Mode IV and are not allowed to carry classified material while performing "OPEN SKIES" related training or operational missions.

14.24.2.6. Testing of aircraft when initially going on alert status satisfies preflight program requirements. This eliminates unnecessary delay of aircraft launch.

14.24.3. **(Added-ANG)** May be combined with the RWR systems program at the MXG/CC's option.

14.25. Retention Management of Active Duty Enlisted Maintenance Personnel (N/A to the ARC)

14.25. (ANG) This chapter is applicable to the 116 ACW and 153 AW active duty personnel.

14.25.1. Keep Enlisted Experience Program (KEEP). The USAF/A4M KEEP provides commanders and supervisors maintenance-specific tools for retention of Airmen. The KEEP was developed by maintenance experts for maintainers. Wing, Group, and Squadron commanders must make retention of enlisted maintenance personnel one of their top priorities. More information is available at the

USAF/A4M KEEP web site, URL: **https://afkm.wpafb.af.mil/ASPs/CoP/OpenCoP.asp?Filter=OO-LG-AF-35**

14.25.2. Duties and Responsibilities.

14.25.2.1. SQ/CCs will conduct "Maintenance Retention Calls." The agenda should concentrate on the benefits of AF service, selective reenlistment bonus, pay, medical care, education, tuition assistance, as well as career opportunities including maintenance assignment information, Career Job Reservations, Quality Force Management, Airframe and Powerplant licenses, etc. Commanders will target those airmen (and their spouses as invitees) who are eligible to separate within 12 months. Retention calls may be conducted in conjunction with regularly scheduled "Commander's Calls."

14.25.2.2. Supervisors play a vital role in maintenance unit retention efforts. Supervisors will:

14.25.2.2.1. Consider the professional development of their subordinates as a primary responsibility.

14.25.2.2.2. Provide career counseling to subordinates on benefits, entitlements, and opportunities available in an AF career.

14.25.2.2.3. Ensure counseling occurs in conjunction with performance feedback or when an individual comes up for quality review under the Selective Reenlistment Program.

14.25.2.2.4. Review with each individual the AF Benefits Fact Sheet, and provide each individual a copy at the end of each counseling session located at **https://www.afpc.randolph.af.mil/enlskills/currentfacts.htm**

14.25.2.2.5. Keep unit leadership abreast of adverse trends.

14.25.2.3. Key Decision Points. SQ/CCs must ensure supervisors counsel first- and second-term airmen at critical points prior to reenlistment to make sure members get the most current information in order to make the right decisions. Leadership at all levels must be involved. Key decision point counseling may be aligned with Performance Feedback sessions, where timing permits.

14.25.2.4. 18-Month Point. Supervisors will ensure members are scheduled to attend a mandatory base wide "Right Decision" type briefing, hosted by the WG/CC and CAA 18 months prior to date of separation.

14.25.2.5. 15-Month Point.

14.25.2.5.1. Member meets with supervisor to discuss Selective Reenlistment Program (SRP), career options, and the following:

14.25.2.5.1.1. Member's status regarding reenlistment.

14.25.2.5.1.2. Member's intentions regarding retention. Determine and address reasons affecting separation decision.

14.25.2.5.1.3. Review PIF with member.

14.25.2.5.1.4. Provide and discuss AF Facts and Benefits Sheet.

14.25.2.5.1.5. Counsel member regarding Career Job Reservation or cross training options.

14.25.2.5.1.6. Refer issues regarding assignment or job opportunities for SQ/CC engagement.

14.25.2.5.2. Supervisor forwards SRP package to SQ/CC for endorsement.

14.25.2.5.3. The SQ/CC meets with individual before signing the SRP recommendation.

14.25.2.6. 6-Month Point

14.25.2.6.1. Member meets with the supervisor to determine current intentions.

14.25.2.6.2. If unsuccessful in retaining on active duty, encourage the member to meet with ANG/AFRC recruiters or consider civil service option.

14.25.2.6.3. Make member aware of Palace Chase/Palace Front Programs.

14.25.2.6.4. Brief airman on the Extended Prior Service Program.

14.25.2.6.5. Discuss airmen's options for reentering the AF if they decide to separate.

14.26. Land Mobile Radio (LMR) Management.

14.26.1. Maintenance Communications. Reliable, redundant, and effective communications systems are essential for efficient maintenance operations. These systems should provide accurate, timely, secure, programmable frequency and jam resistant communications needed to accomplish the maintenance mission in a fully deployed isolated mode. MXG/CC designated OPR has the overall responsibility to ensure adequate communications are available and manage the non-tactical radio program. Personnel will receive initial radio operating training before assuming duties involving radio operation AFI 33-106, AFMAN 33-120, AFI 33-118, and AFI 33-202V1. For effective flightline operation, more non-tactical radio nets are authorized when large numbers or different types of weapon systems are assigned or when SAs so specify. The following general guidelines apply:

14.26.2. Allowance for specific radios are shown in AS 660, *Equipment Allowances for Non-Weapon Systems Communications Requirements*, *Repair Cycle Data Listing*. Process requests for specific radio equipment to support maintenance activities IAW AFMAN 23-110, and AFI 33-106, AFMAN 33-120, AFI 33-118, and AFI 33-202. The AFEMS web site is located at: **https://www.afems.wpafb.af.mil/afems40/splash.html**

14.26.3. A VHF/UHF radio is authorized to provide communications between aircraft and maintenance. Aircrews may relay advance status information. Coordinate procedures for use of these radio communications with operations.

14.27. Lead Technician.

14.27.1. Lead Technician (Lead Tech) Responsibilities. Units may choose to identify Lead Techs. A Lead Tech is the flight AFSC SME and represents all personnel in that AFSC. Their use is especially important where multiple AFSCs are integrated into sections. Units supporting different aircraft types may find it beneficial to identify Lead Techs for each MDS. Serving as a Lead Tech is considered an additional duty, not a duty title or full-time job. Lead Techs will:

14.27.1.1. Work with the flight chief/section NCOICs to ensure personnel in the Lead Tech's AFSC receive proficiency training.

14.27.1.2. Serve as the flight chief's technical advisor for matters relating to their AFSC.

14.27.1.3. Work with the flight chief/section NCOIC to ensure special tools and equipment utilized by personnel in their AFSC are serviceable and meet mission requirements.

14.27.1.4. Monitor repair processes to ensure safe, effective repair of unit assets.

14.27.1.5. Evaluate trends and indicators of troubleshooting effectiveness and 2LM efficiency. Unit "Re-test OK" components (RTOK) are costly and often indicate opportunities to improve troubleshooting or repair processes. If available, RTOK data will be reviewed monthly for trends. Simple process improvements may result from emphasis on RTOK costs, more in-depth troubleshooting, or (circumstances permitting) reinstalling original LRUs when replacement LRUs drawn from supply do not fix the problem

14.28. MRT Procedures.

14.28.1. The MXG/CC is responsible for deploying MRTs and equipment to recover aircraft at remote locations, as directed by this instruction and applicable MAJCOM procedures (see **Attachment 7-Attachment 9** for MRT chief checksheet). Unit resources, including personnel, supplies, and equipment, will be made available to support en route aircraft recoveries. The MXG/CC will:

14.28.1.1. Ensure adequate equipment resources, as authorized by applicable AS, are available to perform remote aircraft recoveries.

14.28.1.2. Ensure enough individuals are qualified to perform and complete all anticipated tasks, including IPI and Red X sign-offs. Consider the experience level of the individuals you select when the need is identified to troubleshoot repeat/recurring discrepancies, especially those that caused in-flight emergencies or involve safety of flight. The MXG/CC has the authority to grant approval for a single person to sign off their own work when only one individual deploys on an MRT IAW TO 00-20-1.

14.28.1.3. Ensure sufficient numbers of personnel, across all maintenance AFSCs, have official government passports, as applicable, to reduce deployment limitations and ensure adequate support of MRT taskings.

14.28.1.4. Ensure the MOC is informed of personnel and equipment deployed in MRTs and status of the recovery.

14.29. Protective Aircraft Shelter (PAS) Environment. This section outlines general policies and procedures prescribed by the SSEA for peacetime operations, and expanded aircraft servicing, maintenance, and weapons loading in PAS. Guidance is provided for nose-in, nose out, and “double-stuff” using various aircraft operations and servicing.

14.29.1. Procedures and Responsibilities. Use the information in this section, MAJCOM instructions, AFOSHSTD 91-100, approved technical data, TO 00-25-172, specific TOs for aircraft servicing, equipment, and supply storage.

14.29.1.1. The MXG/CC is responsible for PAS management at bases with permanently assigned aircraft, unless otherwise stipulated in contracting arrangements. If a PAS is used for other than its designed purpose, the using activity will return each PAS to its required readiness condition prior to receiving aircraft. Electrical equipment used for quality of life purposes must be designed for Class I Division 2 requirements as specified by the National Electrical Code. Equipment not meet-

ing these requirements may be used only if they are powered by a dedicated circuit that can be de-energized during aircraft refueling by a single Class I Division 2 switch.

14.29.2. PAS Marking. Develop permanent floor plans to reflect positions for fuel truck, aircraft, chocks, equipment, personnel cubicle, dispersed weapons, etc., for each style of PAS used. When double-stuffing aircraft, use a MXG/CC-approved option for aircraft positioning.

14.29.2.1. Develop floor plans for augmentation forces and include in the units procedures supplementing this instruction.

14.29.2.2. Paint aircraft taxi lines on the shelter access pad and continue into the PAS. Paint a yellow or red safety guideline for positioning fuel vehicles, beginning 10 feet from the shelter (outside) and extending into the shelter approximately 10 feet for refueling vehicles. Paint the safety guideline to align with the driver's side of the vehicle, considering that the refuel vehicle will always be backed into the PAS.

14.29.3. Electrical Requirements. Refer to TO 00-25-172, for second-and third-generation PAS. For first- and modified first-generation PAS, with aircraft placed on centerline in either nose-in or -out configuration, leave electrical power and wall lights on. Do not change switch position until refueling is completed. Leave wall lights and under wing lights on if these lights are explosive-proof and the PAS is equipped with an operating ventilator.

14.29.4. Liquid Oxygen Servicing. Complete LOX servicing IAW aircraft technical data and criteria established in TO 00-25-172.

14.29.5. Refueling/Defueling Operations. Complete refuel/defuel servicing IAW technical data and criteria established in TO 00-25-172. During F-15 operations, the fuel truck may be positioned into the shelter during ammunition loading with the aircraft's left engine running (nose-out configuration only), as long as no part of the fuel truck is directly in front of the F-15 gun firing line. Do not connect the fuel hose to the aircraft until the engine is shut down and the fuel truck is properly grounded.

14.29.6. Shelter Doors. Aircraft are sheltered at the end of the duty day unless otherwise directed by local policies. Do not open PAS aircraft doors until ice, snow or debris is removed from the roller guide track and door roller path. Opening PAS aircraft doors with clogged door roller guides can cause severe damage to the door and door drive system. Ensure personnel have shelter door operating training before authorizing to operate.

14.29.6.1. Fully open all PAS and exhaust/blast doors when aircraft engines are operated in the PAS. Recommend painting marks on the shelter walls/floors to indicate when at the fully open position.

14.29.6.2. During real world situations when force protection measures are increased, or as directed by commanders, keep all PAS and exhaust/blast doors closed and secured to the greatest extent possible to protect critical assets.

14.29.6.3. During strike-mission weapons loading operations for local exercises and higher HQ inspections, open PAS doors to the 10 foot mark, if applicable (depending on the style of door) and open one of the exhaust/blast doors while powered AGE or bomb lift vehicles are operating. If a PAS protecting critical assets is equipped with ventilation fans, BE will evaluate the local exhaust venilation systems for predetermined operations inside a PAS with the doors closed to ensure no health hazard to personnel exists, then the PAS and exhaust/blast doors may be closed while powered AGE or bomb lift vehicles are operating.

14.29.6.4. During normal operations, open PAS doors as specified in wing procedures, to facilitate safety, refueling, and ventilating hazardous exhaust vapors and fumes. Additionally, open PAS and exhaust/blast doors at least 50 percent when powered AGE is operated inside. With the approval of Wing Safety, PAS and exhaust/blast doors may remain closed during periods of inclement weather provided there is no safety risk, no refueling operation, no powered AGE operation, and no hazardous vapors/fumes risk within the PAS.

14.29.7. Aircraft Engine Operation. Perform single-engine maintenance operations IAW MDS-specific guidance not to exceed 85 percent in the PAS. When performing engine ground operations on the apron outside the shelter, do not direct engine exhaust into the shelter.

14.29.8. Aircraft Positioning inside the PAS. When positioning aircraft in a PAS for engine operations ensure aircraft is correctly positioned to accommodate safe operations and optimum engine performance.

14.29.9. Aircraft Winching (Hot/Cold). Cold winch (aircraft engines not running) aircraft into the shelter using the appropriate aircraft technical data. If aircraft specific TOs do not exist, units will forward proposed cold-winching checklists to the Supported Command for approval prior to implementing. Hot-winching (aircraft engines are operating) is authorized provided an SSEA has been accomplished IAW AFOSHSTD 91-100.

14.29.9.1. Base CE will set the winch configuration for the shelter based upon the primary assigned aircraft. Host units will develop a PAS facility maintenance program to ensure safe and efficient operations.

14.29.9.2. Ensure personnel are not permitted aft of the aircraft main landing gear. This is considered a danger zone due to the possibility of winch cable breakage.

14.29.10. Placement and Storage of Munitions in the PAS. Permit the placement or storage of munitions in a PAS only after carefully determining operational advantages to mission accomplishment. Site the PAS for explosives IAW AFMAN 91-201, and DoD 6055.9-STD, *DoD Ammunition and Explosive Safety Standards*. Determine the amount of munitions placed in a PAS based upon expected peacetime, exercise, and wartime taskings. In no case will the sited net explosive weight (NEW) limits be exceeded. Additional guidance on explosive compatibility, angled storage of munitions, and missile separation distances is in AFMAN 91-201, DoD 6055.9-STD, and AFI 91-112, *Safety Rules for US Strike Aircraft*.

14.29.10.1. In the United Kingdom, each PAS must be licensed by the Royal Air Force in addition to complying with the requirements of AFMAN 91-201, and DOD 6055.9-STD. Elsewhere, obtain host-government concurrence, if necessary, before implementation.

14.29.10.1.1. Before placing munitions inside a PAS, develop wing procedures to govern storage and movement operations. Group commanders jointly coordinate on wing procedures. The security police, CE, munitions flight, and weapons and explosives safety officers will assist in preparation of the wing guidance. The WG/CC and host nation commander, where applicable, will approve the procedures. Units will forward a courtesy copy of the procedures to USAFE. Munitions will not be positioned inside a PAS until wing procedures have been approved.

14.29.10.2. Conventional Munitions in the PAS. In addition to the requirements in AFMAN 91-201 and DoD 6055.9-STD, the following conditions also apply:

14.29.10.2.1. General purpose bombs and cluster bomb units may be stored in a PAS. Fuze limited quantities (sufficient to meet minimum wartime taskings) provided they are periodically verified as ”safe” by qualified munitions personnel (2W0XX or 2W1XX). Verify the safety of fuzed munitions as follows:

14.29.10.2.1.1. Upon initial delivery and positioning of munitions in PAS.

14.29.10.2.1.2. After every download from an aircraft.

14.29.10.2.1.3. When refueling with munitions positioned in PAS, provide fire protection IAW TO 00-25-172.

14.29.10.3. Maintenance Actions for Emitting Electromagnetic Radiation (EMR).

14.29.10.3.1. Do not conduct aircraft maintenance requiring antenna radiation while AGM-88 missiles are located inside the PAS or located inside another PAS that is in line with the aircraft transmitting antenna.

14.29.10.3.2. Comply with the safety requirements of technical data for electro-explosive devices, cluster bomb units, guided bombs, electronic fuzes, missiles, etc., to prevent detonation from EMR.

14.29.10.4. Secure low-risk and medium-risk munitions stored in PAS IAW AFI 31-101, *The Air Force Installation Security Program* and AFI 31-201, *Security Police Standards and Procedures*.

14.29.10.4.1. Do not place missiles or munitions inside the PAS in direct line of the aircraft exhaust or within 5 feet of the PAS exhaust port opening. Place missiles in PAS on MMHE-approved missile stands (limit quantities to meet minimum wartime taskings), all up-round containers, or on munitions trailers. Establish procedures for detecting tampering with missiles positioned in a PAS. The maximum inspection interval is 7 days.

14.29.10.4.2. Munitions pre-positioning for one SCL of air-to-ground or air-to-air munitions can be accommodated by available floor space within every PAS. Place munitions on Y-stands, wooden dunnage, or specially designed racks. Maximum total munitions to be pre-positioned within any PAS is dependent upon the NEW restriction for that PAS. The unit’s SCL governs the types of munitions pre-positioned in shelters.

14.29.10.4.3. Quantities of air-to-air and air-to-ground missile racks vary, depending on the type of PAS. Generally, four missile racks (eight missiles) will fit into a first generation shelter. Eight missile racks will fit into a modified first-, second-, or third-generation shelter (total 16 missiles per shelter). ***NOTE:*** Missile racks must possess loading adapter straps providing durable, adjustable, positive locking for holding all types of missiles. Mount these racks to a single surface (PAS wall or PAS floor; not both) within the shelter. Strap missiles down at all times.

14.29.10.4.4. Place missiles on MMHE-approved missile racks with the nose pointing toward the rear of the shelter. Maintain missile warhead separations IAW AFMAN 91-201 and DoD 6055.9-STD. If missile warhead separation cannot be maintained, alternate missile positions; that is, nose-to-rear, nose-to-front. This should provide proper warhead alignment IAW AFMAN 91-201 and DoD 6055.9-STD and preclude any violations to sited NEW. ***NOTE***: Descriptions identifying differences between PAS generations are in TO 00-25-172. Position missile racks as follows:

14.29.10.4.4.1. In first generation shelters, position AIM-9 racks near the aircraft wings and forward of AIM-9 Launchers. This will enable the bomb lift truck to maneuver between the racks and the aircraft.

14.29.10.4.4.2. In modified first generation shelters, position AIM-9 missile racks closest to the aircraft wings. The AIM-7/AIM-120 racks are positioned forward of the AIM-9 racks.

14.29.10.4.4.3. In second and third generation shelters, position five to seven missile racks along the right wall and one missile rack along the left wall. Locate AIM-9 missile racks closest to the aircraft.

14.29.11. Collocating Nuclear and Conventional Munitions (AF Munitions). Peacetime collocation of conventional munitions and nuclear weapons is not permitted. This does not include aircraft configured in an authorized strike configuration for a nuclear generation or alert operation.

14.29.12. External Fuel Tank Storage. Operational, empty aircraft fuel tanks may be stored within the shelters on fuel tank racks. Ground the fuel tanks IAW aircraft TOs and TO 00-25-172. Cover fuel standpipes and strap down the tanks. The quantity of fuel tanks to be stored inside of a shelter depends upon the assigned MDS and the type of shelter that the aircraft is operating from. ***NOTE:*** Currently, no requirement exists for A-10 fuel tank pre-positioning.

14.29.12.1. In first-generation shelters housing F-16 aircraft, two tanks are stored inside each shelter. Store the tanks one above the other in the rear of the shelter above the aircraft winch. Variations to this configuration may be required due to individual shelter layout.

14.29.12.2. In modified first-generation shelters housing F-15 aircraft, and second and third-generation shelters housing F-15/F-16 aircraft, four external fuel tanks are stored inside each shelter. Position two tanks, one on top of the other, on sides of the shelter within the rear 25 feet of the shelter.

14.30. Radar Warning Receiver (RWR)/Radar Threat Warning (RTHW) Testing.

14.30.1. Testing and Reporting. The MXG/CC will appoint a RWR/RTHW manager. The RWR/RTHW manager will coordinate test procedures with the wing electronic warfare officer (EWO) and the MXS, if applicable. The RWR/RTHW manager will ensure each AMU accomplishes the required minimum number of checks as defined below.

14.30.1.1. Every test will include a check of one signal per band and continuous wave (CW) if equipped.

14.30.1.2. For contingency missions, check the RWR/RTHW on all applicable aircraft prior to first sortie of the day. When an aircraft is found to have a malfunctioning RWR/ RTHW system, the AC determines the course of action based on operational needs and requirements.

14.30.1.2. **(ANG)** Prior to base departure for OCONUS Missions, all deploying aircraft must perform and pass Radar Warning Receiver operational check out. When operating in contingency status, OCONUS Theater procedures for Radar Warning Receiver Testing must be followed.

14.30.1.3. For non-contingency missions, follow technical data or MAJCOM guidance to determine the frequency and requirements. Where conflicts exist, adhere to most stringent guidance.

14.31. Ramp Inspection Program.

14.31.1. Public Law 99-661 requires a pre-flight safety inspection of all internationally scheduled charter missions for the transportation of members of the Armed Forces departing the United States. Air Mobility Command (AMC) is lead for the DoD in the management and administration of the Ramp Inspection Program. The Ramp Inspection Program ensures all internationally chartered missions receive a pre-flight safety inspection IAW AMC Supplement 1 to AFI 21-101. AMC/A44 will coordinate with other MAJCOMs as required to accomplish ramp inspections to ensure the maximum efficiency and utilization of resources. When requested by AMC, MAJCOMs will provide support to reduce the TDY and manpower impact associated with the execution of this program.

14.31.1. **(ANG)** ANG units shall contact AMC/A4M when a Ramp Inspection is required.

14.32. Red Ball Maintenance.

14.32.1. The term "Red Ball" is a traditional descriptor, recognized throughout aircraft maintenance, and defines a situation requiring a sense of urgency and priority actions. "Red Ball" maintenance normally occurs two hours prior to launch and until aircrew have released the aircraft back to maintenance. The Red Ball maintenance concept is intended to prevent late takeoffs and aborts by having qualified maintenance personnel available (e.g., in a truck or standby in the shop) during launch and recovery operations to troubleshoot, isolate, and repair system malfunctions. Red Ball maintenance in no way authorizes technicians to take shortcuts or deviate from TOs, personnel safety requirements or fail to properly document the aircraft forms and the MIS for completed repair actions. Units must develop local procedures to ensure Red X discrepancies discovered during time-sensitive maintenance accomplished during Red Ball, launch, or EOR operations are input and cleared from the forms prior to flight and the MIS is properly documented as soon as possible (local procedures should ensure all maintenance documentation is accomplished prior to flight). If aircraft status changes, an ER must be re-accomplished by a certified individual upon completion of maintenance and before the aircraft is released for flight IAW TO 00-20-1. ***NOTE***: When the MIS is down, develop procedures to ensure the appropriate documentation is completed as soon as the system is operational.

14.32.1. **(ANG)** N/A to the ANG. The following only applies to the ANG. The term "Red Ball" is a traditional descriptor, recognized throughout aircraft maintenance, and defines a situation requiring a sense of urgency and priority actions. "Red Ball" maintenance normally occurs two hours prior to launch and until aircrew have released the aircraft back to maintenance. The Red Ball maintenance concept is intended to prevent late takeoffs and aborts by having qualified maintenance personnel available (e.g., in a truck or standby in the shop) during launch and recovery operations to troubleshoot, isolate, and repair system malfunctions. Red Ball maintenance in no way authorizes technicians to take shortcuts or deviate from TOs, personnel safety requirements or fail to properly document the aircraft forms and the MIS for completed repair actions. Units must develop local procedures to ensure Red X discrepancies discovered during time-sensitive maintenance accomplished during Red Ball, launch, or EOR operations are input and cleared from the forms prior to flight and the MIS is properly documented as soon as possible. If aircraft status changes, an ER must be re-accomplished by a certified individual upon completion of maintenance and before the aircraft is released for flight IAW TO 00-20-1. ***NOTE***: When the MIS is down, develop procedures to ensure the appropriate documentation is completed as soon as the system is operational.

14.32.2. Red Ball Maintenance Procedures.

14.32.2.1. TOs, tools, rags, parts, unused supplies and checklists will be accounted for before the aircraft is allowed to taxi/takeoff.

14.32.2.2. Emphasis will be placed on FOD awareness/prevention during this critical maintenance operation.

14.32.3. If aircraft engines are operating, a safety observer (maintenance or aircrew member) will maintain interphone communications or remain in full view of the flight crew and be positioned to maintain overall surveillance of the aircraft and personnel performing maintenance.

14.32.3. **(ANG)** Situational awareness of high-velocity air, moveable surfaces, high-pressure fluids, electrical shock, and other specific system hazards, must be stressed to ensure personnel and equipment safety.

14.32.4. Weapons loaded aircraft will be safed IAW applicable MDS and/or weapons specific technical data.

14.32.5. **(Added-ANG)** Inlet and/or area inspection must be completed, as applicable, prior to start.

14.33. Scanning Electron Microscope/Energy Dispersive X-Ray (Sem/Edx) Master Chip Detector Analysis Program (MCDP)

14.33.1. General. This section establishes procedures for management of the Aircraft Engine Magnetic Chip Detector Debris Program for units with SEM/EDX machines, for all assigned F110-GE-100/-129 and F118-101 engines.

14.33.2. The NDI section NCOIC will be the POC for SEM/EDX related matters (ANG will be propulsion section NCOIC).

14.33.3. All organizations requiring recurring chip detector analysis service shall identify by letter a primary and alternate MCDP monitor for their unit. Letters will include the phone numbers of both the primary and alternate monitors. The letter will be updated annually or when personnel or phone numbers change.

14.33.3.1. All newly assigned MCDP monitors will attend a briefing by NDI lab. This briefing will cover the duties and responsibilities of all MCDP monitors.

14.33.3.1. **(ANG)** All newly assigned MCDP monitors must attend a briefing by the Propulsion Shop. This briefing shall cover the duties and responsibilities of all MCDP monitors.

14.33.4. All MCDP Monitors or their representatives will ensure the following:

14.33.4.1. Magnetic Chip Detectors (MCD) are submitted for debris analysis for their aircraft and assigned engines IAW TOs.

14.33.4.2. Ensure MCD debris analysis is forwarded with the following information: AMU, rank/name, aircraft serial number, engine serial number, total engine hours, date/time, visual chips, reason for analysis request and sortie number. This information will be annotated on MAJCOM or locally developed form.

14.33.4.3. Ensure all MCD debris analysis documentation errors are corrected as soon as possible when notified of the error by the NDI lab.

14.33.5. Timely MCD analysis is critical to weapon system integrity and operational safety. Effective risk mitigation requires meticulous attention to ensure analysis is performed at prescribed technical data intervals. These intervals will not be exceeded.

14.33.5.1. The NDI lab will:

14.33.5.1.1. Complete analysis and notify MOC of results in sufficient time to meet TO directed notification intervals.

14.33.5.1.2. MCD analysis indicating significant levels of M50 or other critical materials will be immediately reported to the MOC. MOC will in-turn contact the owning AMU to coordinate immediate return of affected aircraft to home station.

14.33.5.1.3. Immediately notify test cell personnel of analysis results for engines in the test cell.

14.33.5.1.4. Provide AMUs with one clean MCD for each detector submitted for analysis

14.33.5.1.5. Notify the MOC, Maintenance Supervision, Propulsion Flight, and owning MAJCOM NDI and Propulsion Functional Managers when a SEM/EDX unit becomes inoperable.

14.33.5.1.6. Immediately notify the AF Oil Analysis Program Office (448 HPSG/GBHDE) to initiate repair action as soon as a SEM/EDX unit becomes inoperable.

14.33.5.1.7. Notify the AF OAP Office, MOC, Maintenance Supervision, Propulsion Flight, MAJCOM Propulsion and NDI functional managers when the SEM/EDX unit has been repaired and is operational.

14.33.6. Operations Officer/MX SUPT will:

14.33.6. **(ANG)** AMXS Supervision will:

14.33.6.1. Be responsible for monitoring the MCDP on the flightline.

14.33.6.2. Ensure visual inspection of the MCD is performed IAW applicable TOs.

14.33.6.2.1. Ensure a Red Dash entry is made in the aircraft forms when a visual MCD inspection is due.

14.33.6.3. Ensure MCDs are submitted for analysis within 75 minutes after engine shutdown.

14.33.6.4. Ensure an additional Red Dash entry is made in the aircraft forms when the MCD has been submitted for analysis.

14.33.6.5. Ensure current SEM/EDX levels are maintained for each aircraft serial number to indicate aircraft status relative to MCD analysis results.

14.33.6.6. Coordinate with MOC to recall aircraft determined to be flying with unacceptable levels of debris.

14.33.6.7. **(Added-ANG)** Ensure current SEM/EDX status code is maintained for each aircraft serial number to indicate aircraft status relative to MCD analysis results. The following shall be used:

Level 0.	No Messages.	All Total Risk Factors within limits.
Level 1.	Fully MC	Chips detected but within limits.
Level 2.	Warning	Material amounts exceeded.
Level 3.	Warning	High Limit Exceeded.

14.33.7. The MOC will:

14.33.7.1. Serve as primary communication link for transfer of SEM/EDX information between the NDI lab and affected activities.

14.33.7.1. **(ANG)** N/A to ANG. The following only applies to the ANG. Serve as primary communication link for transfer of SEM/EDX information between the Propulsion Shop and its customers.

14.33.7.2. Ensure current SEM/EDX levels are maintained for each aircraft serial number to indicate aircraft status relative to MCD analysis results, IAW system technical data.

14.33.7.3. Immediately notify the owning AMU when MCD analysis indicates unacceptable levels of debris so they can coordinate recall of affected aircraft.

14.33.8. Cross Country/Deployed MCDP Analysis Requirements.

14.33.8.1. NDI will be notified prior to deployment to determine if MCDP support is available at the deployed location.

14.33.8.2. If it is determined that MCDP is not available, visual MCD inspections will be performed IAW applicable engine directives.

14.34. Self-Inspection Program.

14.34.1. The purpose of the unit self-inspection program is to provide commanders and supervisors a management tool to assess unit compliance with existing directives. The self-inspection program is intended to be an on-going process implemented at all organizational levels. Wings will establish standardized program guidelines and develop checklists that incorporate applicable MAJCOM checklists and checklist items from local instructions. The self-inspection program not only enables units to gauge compliance with directives, but also provides a method to assess established processes, identify deficiencies, and implement corrective measures. Continuously assessing, measuring, and improving processes serves to improve mission effectiveness and efficiency and favorably postures units for higher HQ inspections. Refer to AFI 90-201.

14.34.1. **(ANG)** The QA office will oversee the MXG Self Inspection Program, but it will be implemented by all Element/Workcenter Supervisors, Superintendents, and Commanders as directed by the applicable MSEP OI. ANG Units will utilize the web-enabled ANG self inspection database ("Milwaukee Program") to implement their MXG Self Inspection Program. ANG QA offices should refer all questions concerning this database to NGB/A4QI. As a minimum this must be accomplished annually.

14.34.1.1. MXG/CC and SQ/CCs will conduct a unit self-inspection within 45 days (ARC MXG/CC will determine requirement) of assuming command.

14.34.2. Program Guidelines: MAJCOMs will develop checklists to be used at the unit level. The unit self-inspection program must be tailored to the organization's structure and mission. It should provide adequate coverage of the mission, resources, training, and people programs. Items not in compliance will be categorized as "Critical" or "Non-critical." Problems identified should be categorized by mission impact and compliance with policies and efforts needed to fix problems. A feedback mechanism and reporting process will be established to ensure non-compliance items are tracked until resolved, waivered, or LIMFACs are reported formally. Maintain a formal copy of approval for waivered items. Open "Critical" items will be reported to the MXG/CC, tracked, and status updated quarterly until resolved. Open "Non-critical" items will be reported to the SQ/CC, tracked, and updated quarterly until resolved.

14.34.2. **(ANG)** ANG LSEP workcenter checklists shall be used as a minimum to establish the program.

14.34.2.1. Definition of Critical: Items identified as key result areas for successful mission accomplishment including, but not limited to, items where non-compliance would affect system reliability or result in serious injury, loss of life, excessive cost, or litigation.

14.34.2.2. Definition of Non-critical: Areas that require special vigilance and are important to the overall performance of the unit, but are not deemed "Critical." Non-compliance could result in some negative impact on mission performance or could result in injury, unnecessary cost, or possible litigation.

14.34.2.3. In addition to MAJCOM checklists, use locally developed checklists tailored to specific unit requirements. AFOSHSTDs contain sample checklists for unit self-inspections. Use OSHA inspections for workplaces with civilian personnel. See AFI 91-301.

14.34.2.3. **(ANG)** In addition to ANG LSEP workcenter checklists, ANG Units will utilize the web-enabled ANG self inspection database ("Milwaukee Program") to implement their MXG Self Inspection Program. Use locally developed checklists tailored to specific unit requirements if needed.

14.34.3. OSHA inspections of AF contractor operations within the 50 states and US territories are authorized. These operations are subject to the enforcement authority of federal and state safety and health officials. See AFI 91-301.

14.35. Senior Leaders' Maintenance Course (SLMC).

14.35.1. General. The AF Senior Leaders' Maintenance Course (SLMC) is a Chief of Staff initiative developed to educate wing leadership on aircraft maintenance, operations, and flightline support in both expeditionary and home station environments. Its objectives include: strengthen the relationship and teamwork between operations, maintenance, and support; deepen insight into unit operations, maintenance, and support activities; and focus attention on policy, procedures, training, discipline, and enforcement.

14.35.2. Course Policies. SLMC implementation instructions are as follows:

14.35.2.1. Mandatory for Wing CC/CV, OG/CC/CD, MXG/CC/CD, and MSG/CC/CD.

14.35.2.1.1. MAJCOM/CV may approve attendance waivers for those who have already attended SLMC in a different MAJCOM. The waiver should not be automatic and consideration should be given to the unique maintenance operations of the new MAJCOM.

14.35.2.2. Must complete SLMC within 6 months of assignment.

14.35.2.2.1. MAJCOM/CV is the approval authority for cancellations once an officer is given a course date. If cancellation is approved, the officer must still attend SLMC within 6 months of assignment.

14.35.3. Each MAJCOM will hold at least two SLMCs annually.

14.35.4. Letter signed by CSAF must either be sent to attendees in advance or included in the welcome package.

14.35.5. MAJCOM/CC sponsors the course.

14.35.6. MAJCOM/A4 (or equivalent) will normally plan and host the course, attend throughout, and present key briefings.

14.35.7. Other briefings may be conducted by a SME. The briefer should be at least a colonel or civilian equivalent. A lower-ranking SME may brief by exception.

14.35.8. Course length is capped at 3 days.

14.35.9. MAJCOM/CC (or CV in absence) is expected to open the course.

14.35.10. Functional SMEs are expected to attend to answer functional questions.

14.35.11. Required topics must be presented (but may be adapted to each MAJCOM's mission): CSAF video, wing organization evolution, CWO team (wing organization evolution and CWO team can be combined), SORTS and ART, WG/CC standup, using analysis, QA, flying hour program, planning and scheduling, deployment and AEF support issues, munitions operations, force sustainment/reachback, maintenance discipline, aircraft & flying goals/standards/productivity, scheduled maintenance inspections, CANN and Hangar Queen management, training, safety, base repair cycle, supply issues, and financial management.

14.35.12. Optional topics: LSEP/MSEP, Base X case study, DOP, aircraft appearance, maintenance manning and retention, workforce management, propulsion, weapons system teams and roadmap, DCC Program.

14.35.13. Feedback: Critques will be used to improve and adapt the course to better serve senior leaders' needs.

14.35.14. Designating an OPR: The MAJCOM/A4 (or equivalent) will designate an OPR for the overall course and the action officer will be responsible for maintaining and updating MAJCOM adaptations and optional topics. These briefings should be reviewed and updated prior to each class.

14.35.15. Attendance and Scheduling: The MAJCOM OPR will identify and schedule wing leaders and will work with the MAJCOM/DPO to track attendance. The annual frequency of the course will be determined by MAJCOMs based on the population of senior leaders. Personnel from ARC units can attend another MAJCOM's course.

14.35.16. Course Materials: MAJCOMs may provide a paper or electronic copy of unclassified material. The electronic copy will provide briefings for presentation within their unit.

14.36. SCR. The SCR is a management tool providing supervisors a clear and concise listing of personnel who have been appointed to perform, evaluate, and/or inspect work of a critical nature. Normally, only maintenance requirements that have a definite potential for personnel injury or damage to equipment shall

be included in the SCR. Other tasks requiring special training or qualifications may be managed on the SCR. The SCR is used to build personnel rosters for deployments, shift schedules, and assess workforce capability. The SCR must be reviewed and signed quarterly (ANG semi-annually) by the Operations Officer /MX SUPT (MXG/CC for ARC) to verify all entries are current and accurate and to ensure task certifications have been completed. EXCEPTION: MXG/CEM approves SCR actions for those individuals administratively assigned to MOS (QA, AFREP, etc…). WWM will approve WS SCRs. Aircrew life support (ALS) personnel certified to clear "Red-X" discrepancies will be annotated on the SCR, or as determined by applicable MAJCOMS. ALS sections will also follow AFI 11-301V1, Aircrew Life Support Program and MAJCOM directives. See **Table 14.1.** for SCR requirements.

14.36. (ANG) N/A to ANG. The following only applies to the ANG. The SCR is a management tool providing supervisors a clear and concise listing of personnel who have been appointed to perform, evaluate, and/or inspect work of a critical nature. Normally, only maintenance requirements that have a definite potential for personnel injury or damage to equipment shall be included in the SCR. Other tasks requiring special training or qualifications may be managed on the SCR. The SCR is used to build personnel rosters for deployments, shift schedules, and assess workforce capability. At least semi-annually, TM will ensure the SCR is updated and coordinated with workcenters, squadron/flight commanders, and QA. The MXG/CC approves and signs the SCR. TM maintains a copy of the SCR and forwards a signed master copy to QA. Aircrew life support (ALS) personnel certified to clear "Red-X" discrepancies will be annotated on the SCR. ALS sections will also follow AFI 11-301V1, Aircrew Life Support Program and NGB directives. See **Table 14.1.** for SCR requirements.

14.36.1. The Operations Officer /MX SUPT approves individuals in their primary AFSC based on their experience and technical expertise regardless of their assigned skill position. Seven-skill level personnel may be certified outside their primary AFSC only when specific CUT task qualification is documented in their training records. ***NOTE:*** The ALS Superintendent approves 1T1X1, ALS personnel in their primary AFSC based on their experience and technical expertise regardless of their assigned skill position.

14.36.1. **(ANG)** N/A to the ANG. The following only applies to the ANG: Maintenance Supervision recommends individuals in their primary AFSC based on their experience and technical expertise regardless of their assigned skill position through their chain of command. Seven-skill level personnel may be certified outside their primary AFSC only when specific CUT task qualification is documented in personnel training records. The MXG/CC approves individuals for inclusion on the SCR.

14.36.2. The MXG/CC can authorize selected 5-skill level personnel, in the rank of SrA or higher, for tasks normally requiring a 7-skill level requirement to facilitate the production effort. Waived 5-skill level personnel should be closely monitored and kept to the minimum required to accomplish the maintenance mission. Operations Officer/MX SUPT or equivalent must maintain file copies of approved waivers (ARC: must be maintained by MX supervision or equivalent until the SCR is updated and signed by the MXG/CC). Certified weapons load crew chiefs (load crew member position number 1) by virtue of their task certification and position serve as inspectors for weapons loading activities and do not require waiver. Contract organizations must submit waiver requests through the QAE to the MXG/CC or contracting officer for approval. The QAE, through the contracting officer may disapprove waiver requests without MXG/CC coordination. (2W0X0 Certified Munitions Inspectors are exempt from these requirements.) Inspectors are CFETP qualified and appointed by the munitions flight chief or commander IAW AFI 21-201 and TO 11A-1-10, *Air Force Munitions Sur-*

veillance Program and Serviceability Procedures. ***NOTE:*** The OG/CC approves ALS personnel skill level waivers upon recommendation of the ALS Superintendent and MXG coordination.

14.36.2. **(ANG)** File copies of approved waivers (letter, local form, AF IMT 2426, or e-mail, etc.) must be maintained by QA until the SCR is updated in MIS.

14.36.2.1. Exceptional Release/Conditional Release Waiver Policy. If local conditions require assignment of other than maintenance officers, senior enlisted or civilian equivalent personnel to sign aircraft ER/Conditional Releases, the MXG/CC (or equivalent) must request a waiver from MAJCOM. In accordance with provisions in TO 00-20-1, waiver requests must: (1) Fully justify need for the waiver and (2) Identify actions being taken (or planned) to resolve the problem.

14.36.3. MAJCOMs add other mandatory critical tasks or inspections they deem necessary. Identify each task on the SCR by a specific course code.

14.36.3. **(ANG)** The MXG/CC may add other mandatory critical tasks or inspections they deem necessary.

14.36.4. SCR Documentation. Flight and section NCOICs will review each individual's qualifications prior to recommending approval to perform SCR tasks to the appropriate approval level. The AF IMT 2426, **Training Request and Completion Notification** or MAJCOM-approved (ANG locally approved) form is used by the work center supervisor to add or remove an individual to the SCR. Additionally, removal from the SCR may be accomplished by lining through the task on the SCR and notifying training section to update the MIS. The appropriate level approves the individual for addition to the SCR. On approval, the training management function loads the approved name into the MIS. Flight and section NCOICs retain their copy of nomination until they verify proper loading.

14.36.4. **(ANG)** N/A to the ANG. The following only applies to the ANG. Element and/or workcenter supervisors must review each individual's qualifications prior to recommending approval to perform SCR tasks through their chain of command. The AF IMT 2426, *Training Request and Completion Notification*, or locally approved form is used to add or remove an individual to the SCR. Maintenance Supervision routes the recommendation to the QA Superintendent. WWM will review (not approve) all 2W1X1s added to the SCR. The QA Superintendent reviews and verifies the request for currency, qualification and applicability and forwards to the MXG/CC. Once approved by the MXG/CC, the individual is authorized to perform the tasks indicated. On approval, the Training Management function, loads the approved name into the MIS. Element and/or workcenter supervisors retain their copy of nomination until they verify proper loading.

14.36.4.1. Work center supervisor, AMU/flight supervision, Operations Officer/MX SUPT, SQ/CC, or MXG/CC may decertify individuals at any time and remove them from the SCR.

14.36.5. Ensure a current copy of the SCR is taken on all deployments.

14.36.5. **(ANG)** This may be in either hardcopy or MIS format.

Table 14.1. Mandatory Special Certification Roster (SCR) and Prerequisites.

	A	B
Item	**Mandatory SCR Item Titles**	**Prerequisites**
1	All Systems "Red-X" (no egress, welding, munitions, fuel cell (in-tank work))	MSgt or higher (or civilian equivalent) (Note 1).
2	Exceptional Release (ER)	
3	"Red-X" Down Grade	
4	All Systems IPI (no egress)	
5	Installed Engine Run Certifier (refer to **Chapter 14**)	MSgt or higher (or civilian equivalent), or a fully qualified/certified contractor or AFETS/CETS representative and possess one of the following AFSCs: 2A671A/B, 2A571/2, 2A373X. 1 year minimum engine-run experience on applicable MDS and engine TMSM (not applicable at short tour locations). MXG/CC may waive qualified TSgts. (Note 1).
6	Aircraft Inlet/Intake/Exhaust Certifier (refer to **Chapter 14**)	Most qualified 7- or 9-skill level 2A6X1X, 2A3X3X, or 2A5X1X, 2A5X2 (or civilian equivalent) or engine AFETS/CETS, if applicable (Note 1).
7	Flexible Borescope Certifier (refer to **Chapter 14**)	
8	Blade Blending Certifier (refer to **Chapter 14**)	
9	Blade Blending Instructor (refer to **Chapter 14**)	
10	"Red-X" by Primary AFSC (PAFSC) and MDS (For multiple MDSs, list separately)	SSgt or higher (includes MXG/CC-appointed exceptional SrA as an FCC), minimum 7-skill level (or civilian equivalent); For "Red-X" and IPI egress only, additional requirements contained in AFI 21-112 must also be satisfied prior to certification (Note 2).
11	IPI by PAFSC and MDS (For multiple MDSs, list separately) (refer to **Chapter 14**)	
12	"Red-X" and/or IPI - limited (For multiple MDSs, list separately), for tasks outside PAFSC through cross-utilization training or limited tasks within the PAFSC	SSgt or higher, minimum 7-level (or civilian equivalent), Use for personnel certified on tasks in other AFSCs through cross-utilization training or personnel certified on limited tasks within their AFSC as determined by the unit (Note 2).

	A	B
Item	**Mandatory SCR Item Titles**	**Prerequisites**
13	MICAP Approval	MSgt or higher, minimum 7-level (or civilian equivalent) (Note 2).
14	CANN Authority (refer to **Chapter 14**)	MSgt or higher, minimum 7-level (or civilian equivalent) (Note 1).
15	NRTS and Serviceability Tag	SSgt or higher, minimum 7-level (or civilian equivalent) (Notes 2, 3,and 4).
16	Installed Engine Run by MDS and Engine Type; indicate powersettings, as applicable (refer to **Chapter 14**)	SrA or higher, minimum 5-skill level, (or civilian equivalent), with a minimum of 6 months time on weapon system. MXG/CCs may waive qualified five-skill level A1C for critical manpower shortages. The time on weapon system may be waived by MXG/CC in short tour locations (Note 2).
17	Engine Blade Blending (refer to **Chapter 14**)	Minimum 5-level 2A3X3, 2A5X1/2, and 2A6X1X or civilian equivalent (Note 2)
18	Hot Refueling PAD Supervisor/ "A" Member (refer to **Chapter 14**)	Minimum 5-skill level, 2AXXX (or civilian equivalent), with a minimum of 1 year flightline maintenance experience (Note 2).
19	Hot Refueling Team Member (“B” or “D” member)(refer to **Chapter 14**)	2AXXX, with a minimum of 1 year flightline maintenance experience (Note 2).
20	Aircraft to Aircraft Refueling Supervisor	Minimum 5-skill level with a minimum of 1 year weapon system experience (Note 2).
21	Uninstalled Engine Operations (Test Stand and Test Cell) Run by MDS and Engine Type (refer to **Chapter 14**)	SSgt or higher 7-skill level 2A6X1A/B (or civilian equivalent). MXG/CC may waive 5-skill level SrA with minimum of 6 months time on weapon system (Note 2).
22	Uninstalled Engine Run Certifier by MDS and Engine Type (refer to **Chapter 14**)	TSgt or higher 2A671A/B AFSC (or civilian equivalent) or fully qualified/certified contractors or AFETS/CETS representatives (Note 1).
23	Aircraft Inlet/Intake/Exhaust Inspections (refer to **Chapter 14**)	Minimum 5-skill level 2A3X3, 2A5X1/2, and 2A6X1X (or civilian equivalent) (Note 2).
24	Engine Flexible Borescope Inspections (refer to **Chapter 14**)	Minimum 5-skill level 2A3X3, 2A5X1/2, and 2A6X1X (or civilian equivalent) (Note 2).
25	Chief Servicing Supervisor (Heavy Aircraft)	Minimum 5-skill level with a minimum of 1 year weapons system experience. Time requirement may be waived by MXG/CC in short tour locations (Note 2).

	A	B
Item	**Mandatory SCR Item Titles**	**Prerequisites**
26	Concurrent Servicing Supervisor (Fighter Aircraft) (refer to **Chapter 14**)	For A-10, F-15, F-16, F-22A aircraft, minimum 7-skill level with a minimum of 1 year weapons system experience. Time requirement may be waived by MXG/CC in short tour locations (Note 2).
27	W&B Certified (refer to TO 1–1B-50,)	SSgt or higher (or civilian equivalent), with a minimum of 1 year time on weapon system (Note 2).
28	Impoundment Authority (refer to **Chapter 9**)	(Note 1).
29	Impoundment Release Authority (refer to **Chapter 9**)	
30	APU/GTC/APP Operation (refer to **Chapter 14**)	3-skill level or higher maintenance AFSC (Note 2).
31	Engine Trim Certifier (refer to **Chapter 14**)	2A671A or above technicians (or civilian equivalent) and/or fully qualified AFETS/CETS (Note 1).
32	Engine Trim Box Operator (refer to **Chapter 14**)	SrA, 2A651A (or civilian equivalent) MXG/CC may waive qualified 5-skill level A1Cs for critical manpower shortages (Note 2).
33	Calibration Limitation Approval (refer to TO 00-20-14)	SSgt or higher, minimum 7-skill level (or civilian equivalent) (Notes 2 and 3)
34	CDDAR Team Chief (refer to **Chapter 14**)	MSgt or higher or civilian equivalent MXG/CC may waive grade requirement (Note 1)
35	Weapons Task Qualification Manager (WTQM)	TSgt or higher, minimum 7-skill level AFSC 2A573C or 2AX7X (or civilian equivalent). (Note 1)
36	Tow Team Supervisor	SSgt or higher (includes MXG/CC-appointed exceptional SrA as an FCC), minimum 7-skill level, AFSC 2AXXX with a minimum of 6 months weapons systems experience (Note 2)
37	Weapons Task Qualification Crew (WTQC)	Lead will be SSgt or higher, miminum 7-skill level 2A5X3C (or civilian equivalent); other crew member minimum 5-skill level 2A5X3C (or civilian equivalent). (Note 2)

	A	B
Item	**Mandatory SCR Item Titles**	**Prerequisites**
38	Hush house and T-9/T-10/T-11 sound suppressor Fire Control Panel (refer to **Chapter 14**)	SrA or higher, (or civilian equivalent) with AFSC 2A6X1A/B must have a minimum 6 months experience (Note 2)
39	Inspection	2A7X2 5-level or higher, (or civilian equivalent). (Note 2)
40	Aircraft Rapid/Hot DefuelingSupervisor (Tanker Aircraft) (refer to **Chapter 14**)	Minimum 5-skill level, 1 year of flightline experience, with 6 months weapon system experience
41	Weapons Supervisory Postload Inspection	Minimum 7 – skill level 2W1X1 (or civilian equivalent). Limited to certified weapons load crew chiefs, expediters, shift supervisors, section NCOICs, etc. (Note 2)
42	Clear Red-X when a lost tool/ item cannot be located (refer to **Chapter 10**)	Operations Officer/MX Supt or above

NOTES:

1----Approved by MXG/CC

2----Approved by Operations Officer /MX SUPT

3----Maintenance Operations Officer /MX SUPT may delegate approval authority to the AMU OIC/ NCOIC or Flight commander/chief.

4----Munitions inspectors who are trained and certified may annotate serviceability tags for munitions items (TO 11A-1-10).

Table 14.2. (Added-ANG) Hot Training/Certification Requirements.

Position	Required Training	Conducted by Whom	Do What	How Often	Special Requirements
QA T/E/C	I, II, III	Qualified T/E/C	Train Evaluate and Certify	Annually	Evaluation by QA
QA Augmentee T/E/C	I, II, III	QA T/E/C	Train Evaluate and Certify	Annually	Evaluation by QA
Hot-Pad Supervisor	I, II, III	QA T/E/C or QA Augmentee T/E/C	Supervise or Perform as "A" Member	Two Multiple Hot Refuels Annually	Annual Evaluation QA T/E/C or QA Augmentee T/E/C
Hot Refuel A, B, C, D Member	I, II, III	QA T/E/C or QA Augmentee T/E/C	Perform in any Qualified Position	Two Hot Refuels each 180 days, ("C" only – Annually)	Annual Evaluation QA T/E/C or QA Augmentee T/E/C
Decertified Hot Pad Supervisor	Repeat II, III	QA T/E/C or QA Augmentee T/E/C	Supervise or Perform, as "A" Member	Two Multiple Hot Refuels Within180 Days of Decertification	None
Decertified A, B, C, D Member	Repeat II, III	QA T/E/C or QA Augmentee T/E/C	Perform	Two Hot Refuels Within 180 Days of Decertification	None
Decertified QA T/E/C or QA Augmentee T/E/C	Repeat II, III	QA T/E/C or QA Augmentee T/E/C	Perform, Instruct, and Certify	Two Hot Refuels Within 90 Days of Decertification	Evaluation by QA

Legend: T/E/C - Trainer/Evaluator/Certifier.

Table 14.3. (Added-ANG) N/A to ANG. The following only applies to the ANG:

Item	Mandatory SCR Item Titles	Prerequisites
1.	All systems Red-X,. (no egress, welding, munitions, fuel cell (in-tank work))	Maintenance officers and SNCOs (7-skill level or higher) may clear "all systems" Red X conditions.
2.	Exceptional Release (ER)	Maintenance officers and SNCOs (7-skill level or higher) (See Note 4).
3.	Red X downgrade	Maintenance officers and senior NCOs (7-skill level or higher) may downgrade Red X conditions.
4.	All Systems IPI (no egress, welding, munitions, fuel cell (in-tank work))	Maintenance officers and SNCOs (7-skill level or higher) may clear and perform "all systems" IPIs.
5.	Installed Engine Run Certifier. (refer to **Chapter 14**)	Qualified 7- or 9-level 2A6X1A/B, 2A5X1/2, 2A3X3X, holding the rank of MSgt or above or engine AFETS. Minimum of 1 year engine-run experience on the applicable MDS and engine TMSM. The MXG/CC may waive highly qualified TSgts.
6.	Aircraft Inlet/Intake/Exhaust Certifier (refer to **Chapter 14**)	7- and 9-level technicians with AFSCs 2A3X3, 2A5X1X, 2A5X2, and 2A6X1X. Successful completion of formal training and practical evaluation by a certifier.
7.	Flexible/Rigid Borescope Certifier (refer to **Chapter 14**)	7- and 9-level technicians with AFSCs 2A3X3, 2A5X1/2, and 2A6X1X.
8.	Blade Blending Certifier (refer to **Chapter 14**)	Must have completed appropriate training. 7- and 9-level 2A6X1X, 2A3X3X, 2A5X1X and 2A5X2.
9.	Blade Blending Instructor	Must have completed appropriate training. 7- and 9-level 2A6X1X, 2A5X1X and 2A5X2.
10	Red-X-by Primary AFSC (PAFSC) and MDS (e.g., Clear Red X F-16 PAFSC)	NCOs (7-skill level or higher). Selected 5-level personnel in the rank of SRA or higher may be authorized clear Red X conditions when the Squadron/flight commander requests the 7-skill level requirement be waived. (See Notes 2 and 3).
11.	IPI - by PAFSC and MDS (eg, Sign IPI F-16 Electro/environ, Sign IPI F-16 Avionics)	NCOs (7-skill level or higher). Selected 5-level personnel in the rank of SRA or higher may be authorized to perform IPIs when the Squadron/flight commander requests the 7-skill level requirement be waived. (See Notes 2 and 3).
12.	Red-X and/or IPI - limited (per each MDS), for tasks outside PAFSC through cross-utilization training or limited tasks within the PAFSC	NCOs (7-skill level or higher) may be authorized to perform these tasks outside their PAFSC only when specific CUT task qualification is documented.

Item	Mandatory SCR Item Titles	Prerequisites
13.	MICAP Approval	TSgt or higher, minimum 7-level.
14.	CANN Authority (refer to **Chapter 14**)	MSgt or higher, minimum 7-level.
15.	NRTS and Serviceability Tag	NCOs (7-skill level or higher). Selected 5-level personnel in the rank of SRA or higher may be authorized to sign NRTS and serviceability tags when the Squadron/flight commander requests the 7-skill level requirement be waived. (See Notes 1 and 2).
16	Installed Engine run by MDS and engine type; indicate power settings, as applicable (refer to **Chapter 14**)	SrA or higher, minimum 5-skill level with a minimum of 6 months time on weapon system. Successful completion of all three phases of the engine run certification program.
17	Engine Blade Blending (refer to **Chapter 14**)	5-, 7-, and 9-level personnel with AFSCs 2A3X3, 2A5X1/2, and 2A6X1X.
18.	Hot Refuel PAD supervisor "A" member (refer to **Chapter 14**)	Minimum 5-skill level. Individual shall be a refuel task qualified, capable of supervising hot refuel crew, possess an aircraft maintenance AFSC (2AXXX) and one year of flightline aircraft maintenance experience. Successfully complete all three phases of "HOT" training.
19.	Hot Refuel crew "B" or "D" member.	Minimum 5-skill level. . Individual shall be refuel task qualified, possess an aircraft maintenance AFSC (2AXXX), and one year of flightline aircraft maintenance experience. Successfully complete all three phases of "HOT" training.
20.	Aircraft to aircraft ground refueling Supervisor	Minimum 5 - skill level with a minimum of one year weapon system experience.
21	Uninstalled Engine Operations (Test Stand and Test Cell) Run by MDS and Engine Type (refer to **Chapter 14**)	SSgt or higher 7-skill level 2A6X1A/B. MXG/CC may waive 5-skill level SrA with minimum of 6 months time on MDS.
22	Uninstalled Engine Run Certifier by MDS and Engine Type (refer to **Chapter 14**)	TSgt or higher 2A671A/B AFSC or AFETS representatives.
23.	Aircraft inlet/intake/exhaust inspections. (refer para **14.4.**)	Only certified 2A3X1/2/3, 2A5X1/2, and 2A6X1X 5, 7-, and 9-skill level technicians may perform these inspections. Successful completion of appropriate training and practical evaluation by a certifier. See note 6

Item	Mandatory SCR Item Titles	Prerequisites
24.	Engine Flexible/rigid borescope inspections.	5-, 7-, and 9-level technicians with AFSCs 2A3X3, 2A5X1/2, and 2A6X1X.
25.	Concurrent servicing operations-Chief Servicing Supervisor. (Heavy aircraft).	Minimum 5-skill level with a minimum of one year weapon system experience.
26.	Concurrent Servicing Supervisor for CSO (Fighter Aircraft)	(A-10, F-15, F-16) Minimum 7-skill level 2AXXX or 2WXXX AFSC with a minimum of one-year experience on the MDS.
27.	Weight and Balance (W&B) Certified	SSgt or higher 2AXXX or 2WXXX AFSC with a minimum of one year time on weapon system. Completed training requirements IAW 1-1B-50. Recommendation from the W&B Authority.
28	Impoundment Authority (refer to **Chapter 9**)	Delegation of this authority will be limited and appointed by the MXG/CC.
29	Impoundment Release Authority. (refer to **Chapter 9**)	Delegation of this authority will be extremely limited and no lower than Maintenance Superintendents to include the QA Superintendent.
30	APU/GTC Operation (refer to **Chapter 14**)	Successful completion of an aircraft APU/GTC course.
31	Engine Trim Certifier. Refer to **Chapter 14**.	2A671A or above.
32	Engine Trim Box Operator. Refer to **Chapter 14**.	SrA or higher, 2A651A MXG/CC may waive qualified 5-skill level A1Cs for critical manpower shortages
33.	Calibration Limitation Approval. (refer to TO 00-20-14)	SSgt or higher, minimum 7-skill level aircraft maintenance personnel only
34.	CDDAR Team Chief (refer to **Chapter 14**)	Be a SNCO (MXG/CC may waive grade requirement).
35.	WTQM-Weapons Task Qualification Training Manager	Minimum 7-skill level 2AX7X, or 2WX7X.
36.	Tow Team Supervisor	SSgt or higher (includes MXG/CC-appointed exceptional SrA as an FCC), minimum 7-skill level, AFSC 2AXXX with a minimum of 6 months weapons systems experience.
37	WTQC-Weapons Task Qualification Crew	Minimum 5-skill level 2A1X7 or 2AXXX, generally a 2A1X7.
38.	Hush House and T-9/T-10/T-11/ T-20 sound suppressor Fire Control Panel. (refer to **Chapter 14**).	Be at least a SrA with AFSC 2A6X1A/B. Must have a minimum of 6 months' experience on assigned equipment. AFSC 2A3X3 (fire control panel only)
39	F100 Eddy Current Inspection	2A7X2 5-level or higher

Item	Mandatory SCR Item Titles	Prerequisites
40	Aircraft Rapid/Hot DefuelingSupervisor (Tanker Aircraft) (refer to **Chapter 14**)	Minimum 5-skill level, 1 year of flightline experience, with 6 months weapon system experience
41	Weapons Supervisory Postload Inspection	Minimum 7 – skill level 2W1X1. Limited to certified weapons load crew chiefs, expediters, shift supervisors, section NCOICs, etc.
42	Clear Red-X when a lost tool/item cannot be located (refer to **Chapter 10**)	Operations Officer/MX Supt or above
43	APU/GTC Operation Certifier	MSgt or higher, AFSC 2A675/76 2A671A/B, 2A571/2, 2A373X, 1 year minimum APU/GTC run experience on applicable MDS. MXG/CC may waive qualified TSgts.
44	Hydrazine Response Team Member	AFSC 2A6X4 or as appointed by the MXG/CC and must have task certification.
45.	Hot Pad supervisor.	Individual shall possess a 5-level or higher qualification in an aircraft maintenance AFSC and is hot/ aircraft-to-aircraft refueling supervisor "A" member qualified. Successfully complete all three phases of 'HOT" training.
46	Clear CND/Repeat/Recur discrepancies in primary AFSC	Minimum 7 – skill level or higher see note 5

NOTES:

1. Munitions inspectors who are trained and certified may annotate serviceability tags for munitions items (TO 11A-1-10, *General Instruction-Munitions Serviceability Procedures*).
2. Waived 5-level personnel may perform the assigned certification only in their primary AFSC. The number of waived 5-skill level personnel should be closely monitored and kept to the minimum required to accomplish the maintenance mission.
3. For Egress only, additional requirements contained in AFI 21-112, must also be satisfied prior to certification.
4. If local conditions require assignment of other than maintenance officers and senior enlisted to sign aircraft Exceptional Releases/Conditional Releases, the MXG/CC must request a waiver from NGB/A4MM. In accordance with provisions in TO 00-20-1, waiver requests must: (1) Fully justify need for the waiver; and (2) Identify actions being taken (or planned) to resolve the problem.
5. The MXG/CC may appoint 5-skill level SrA assigned as a FCC to clear these CND/repeat/recur discrepancies when off station.
6. MXG/CC may approve other AFSCs IAW para **14.4.1.**

14.37. WRM External Nestable Fuel Tank Build-Up (NFTBU).

14.37.1. External NFTBU is a wartime capability through a UTC to provide a critical wartime skill that compensates for the expenditure of aircraft fuel tanks (refer to **Chapter 5** of this instruction). With exception of the core 2A6X4 personnel, augmentees may come from any Group or Squadron within the Wing. Units must adhere to the direction outlined in their particular MISCAP statement and DOC statement governing the quantity, size, and composition of fuel tank build-up teams. Refer to AFI 90-201 for additional evaluation/inspection guidance. (PACAF Only: Korean Peninsula bases are not required to maintain standing tank buildup teams with augmentees and are relieved of the requirement to demonstrate fuel tank build-up. These bases are still responsible for maintaining the equipment/tools required to perform tank build-up, developing a plan/capability to form/train tank build-up teams, and maintain built-up/nested WRM tanks).

14.37.2. All UDM must ensure personnel tasked/selected for WRM NFTBU team augmentees are not tasked for other wartime UTCs. The UDM responsible for deploying 2A6X4 personnel is the focal point for team assembly and must maintain a written plan. The plan must be kept current, reviewed annually and must contain the following:

14.37.2.1. Specific manning positions across the wing to be tasked as NFTBU team augmentees. (The applicable independent NFTBU UTC MANFOR shall be used as a guide to construct the teams)

14.37.2.2. Guidelines for activation of the tank build-up teams.

14.38. 406 MHz Emergency Locator Transmitter (ELT) Systems

14.38.1. Aircraft maintenance functions must register and track status of fixed-mounted aircraft 406 MHz Emergency Locator Transmitter (ELT) systems.

14.38.1.1. Ensure all 406 MHz ELT systems in service are registered in a Search and Rescue Satellite Aided Tracking (SARSAT) database system readily accessible to Air Force Rescue Coordination Center (AFRCC) authorities.

14.38.1.1.1. In accordance with DoD policy, USAF 406 MHz ELT systems should normally be registered in the DoD Joint SARSAT Electronic Tracking System (JSETS) database. Use of an alternate registration database must be approved by the AFRCC.

14.38.1.2. ELT information shall be registered in the database system. Registration information must include, as a minimum, accurate point of contact information for the appropriate command post/command and control (C2) functions responsible for response to beacon alert messages. Refer to AFI 10-207, *Command Posts* for Command Post or C2 function responsibilities regarding 406 MHz ELT and Personal Locator Beacon (PLB) systems.

14.38.1.3. Ensure procedures are established to update the ELT registration database whenever 406 MHz ELT–equipped aircraft are transferred to other commands/wings, ELTs that are taken out of service, removed for maintenance or destroyed.

14.38.1.4. Ensure 406 MHz ELT system tracking procedures are established to provide readily accessible, accurate ELT status (including aircraft assignment and, when able, location) to the responsible command post/C2 functions.

Section 14B—ALC/AMARC Only

14.39. Dropped Object Prevention (DOP) Program. A dropped object is any aircraft part, component, surface, or other item lost during aircrew operations, unless intentionally jettisoned from engine start to engine shutdown. Inadvertently released munitions or munitions released in excess of the quantity selected by the aircrew, or a multiple release, are not considered dropped objects and will be reported IAW AFI 91-204.

14.39.1. Responsibilities. All units, which fly, service, or maintain aircraft develop a DOP program with the following provisions:

14.39.1.1. HQ AFMC/A4MM will act as OPR for all dropped object field inquiries. The center CV serves as the DOP program manager. The center CV will appoint a FOD/DOP monitor. See para **14.41.7.1.** for FOD/DOP monitor requirments. The center FOD/DOP monitor may be physically located in the QA office.

14.39.1.2. Training. The center FOD/DOP monitor will identify and develop local training standards to supplement the command standard course, if applicable. Commanders will ensure all maintenance personnel involved in on-equipment maintenance receive adequate DOP training.

14.39.1.3. Prevention. Effective prevention of dropped objects starts when an aircraft door, panel, or cowling is opened for maintenance and during munitions build-up, loading, and arming. Maintenance personnel will ensure the serviceability of fasteners and the proper fit of doors, panels, connectors, etc. Place special attention on the correct length of fasteners and condition of nut plates and other securing devices. Supervisors place special emphasis on these areas during the inspection of completed maintenance actions.

14.39.1.4. Investigation. The DOP monitor will coordinate an investigation for each dropped object incident. Every effort will be made to determine the precise cause to ensure positive corrective action is accomplished. Anytime a materiel or design deficiency is the cause, or suspected cause, a DR will be submitted IAW TO 00-35D-54, even when an exhibit is not available. Investigation results will be distributed to each appropriate work center for inclusion in personnel training and education programs.

14.39.1.5. Reporting. Units will follow DOP program reporting procedures below:

14.39.1.5.1. Initial dropped object report will be made to the HQ AFMC/A4MM via telephone, e-mail, or message within 24 hours of occurance. If it involves casualties, property damage, or if adverse publicity is likely, report IAW AFMAN 10-206, *Operational Reporting*. The center DOP monitor notifies the center safety office of all dropped objects. Units will maintain reports for a minimum of 24 months (may be electronic).

14.39.1.5.2. Follow-up formal report will be made to HQ AFMC/A4MM within 3 duty days after the occurrence. The formal format will be used as listed below:

14.39.1.5.2.1. DOP program report number (unit, year, and month, followed by sequence number -- example, 301FW-010501).

14.39.1.5.2.2. MDS.

14.39.1.5.2.3. Type mission and mission profile.

14.39.1.5.2.4. Aircraft tail number.

14.39.1.5.2.5. Owning organization and base.

14.39.1.5.2.6. Origin of sortie.

14.39.1.5.2.7. Date of incident and discovery location (if different than origin of sortie).

14.39.1.5.2.8. Geographical location of object, if known.

14.39.1.5.2.9. Item, noun, and description (use information from the applicable aircraft -4 series TOs).

14.39.1.5.2.10. TO, figure, and index.

14.39.1.5.2.11. Part number.

14.39.1.5.2.12. Correct WUC (full five-digit).

14.39.1.5.2.13. Last PH, PE, PDM, HSC, or ISO inspection.

14.39.1.5.2.14. Last maintenance performed in the area and date.

14.39.1.5.2.15. Investigation findings (cause).

14.39.1.5.2.16. Costs in dollars to repair or replace as appropriate and cost in man-hours to repair.

14.39.1.5.2.17. Actions to prevent recurrence.

14.39.1.5.2.18. DR Control Number (if submitted)

14.39.1.5.2.19. Unit POC information.

14.39.1.5.2.20. Other pertinent information.

14.39.1.5.3. Transient Aircraft. The local center DOP monitor will be responsible to investigate dropped objects from a transient aircraft. The center DOP monitor will provide the home station DOP monitor with sufficient data to generate a report for trending and tracking purposes.

14.40. End-of-Runway (EOR) Inspection.

14.40.1. The EOR inspection is a final visual and/or operational check of designated aircraft systems and components. It applies to aircraft designated in joint agreement between the MAJCOMs and appropriate PM. The PM will list minimum inspection requirements in the applicable Dash 6 and publish requirements in Dash 6 work cards.

14.40.2. This inspection is performed immediately prior to take-off at a designated location usually near the end of the runway.

14.40.3. The purpose of the inspection is to detect critical defects that may have developed or have become apparent during ground operation of the aircraft after departing the aircraft parking spot.

14.40.4. Perform this inspection when any applicable aircraft is launched from either home station or a transient USAF base.

14.40.5. If local requirements dictate, publish additional guidance to TOs for EOR inspections IAW TO 00-20-1 and TO 00-5-1.

14.40.6. The team chief (identified by a reflective vest) carries an EOR checklist and ensures each item is inspected as required. On aircraft with a ground intercom system, units are only required to

establish verbal communications with the pilot when communication beyond the standard EOR marshalling hand signals is required unless otherwise directed by MDS specific technical data. If the aircraft is not equipped with a ground intercom system, ground control talker cards will be used when communication with the aircrew becomes necessary.

14.40.7. Marshaling signals will be IAW AFI 11-218.

14.40.8. Units will develop procedures to ensure discrepancies discovered during EOR are entered in the AFTO IMTs 781A and MIS. Units will also develop procedures to ensure Red X discrepancies discovered during time-sensitive (Red Ball) maintenance are accomplished and cleared from the forms prior to flight.

14.41. Foreign Object Damage (FOD). The Center CV is responsible for ensuring an effective FOD prevention program is established. All personnel (military, civilian, and contractors) working in, on, around, or traveling through areas near aircraft, missiles, munitions, AGE, engines, or components thereof will comply with FOD prevention. This section establishes minimum requirements for a FOD prevention program.

14.41.1. Definition. FOD: Any damage to an aircraft, missile, engine, aircraft system, missile systems, component, tire, munitions, or SE caused by a foreign object(s) (FO) which may or may not degrade the required safety and/or operational characteristics of the aforementioned items.

14.41.2. FOD Prevention.

14.41.2.1. While maintenance is being performed on aircraft, missiles, uninstalled engines, and AGE, openings, ports, lines, hoses, electrical connections, and ducts will be properly plugged or capped to prevent FO from entering the systems both installed or when removed for storage. **At no time will items, (e.g., aircraft forms binders, VTR tapes, checklists, tools.), be placed in or on engine intakes.** ***NOTE:*** Does not apply to technicians performing maintenance, inlet inspections and blade blending requiring lights, files, or other tools inside aircraft inlets. Inventory all items prior to entering the inlet and immediately upon exiting the inlet.

14.41.2.2. Install intake plugs, or tape and barrier paper (as required by technical data) prior to performing maintenance in or around engine intakes. Ensure engine inlet run-up screens and anti-personnel guards are used IAW applicable weapon system TOs.

14.41.2.3. Prior to engine start and after engine shutdown on maintenance and test cell runs, and after any engine intake maintenance, each affected engine intake and exhaust will receive a FOD (intake/inlet/exhaust) inspection. The FOD inspection will be documented with a Red X symbol in the applicable form (AFTO Form/IMT 781A and the MIS). FOD inspections performed on uninstalled test cell engines will be documented on the test cell worksheet.

14.41.2.4. Covers (e.g., engine, pitot tube(s) to include ejection seat) will remain installed on aircraft as close to crew show as possible to prevent FOD, based on MDS and local MXG/CC guidance.

14.41.2.5. Use a light source of sufficient illumination to inspect the aircraft intakes and exhaust for FO/FOD. A pocketless, zipperless, buttonless bunny-suit, (***NOTE***: Cloth over-boots or stocking feet, boots removed, for intakes only), will be worn whenever physical entry into an aircraft intake or exhaust is required. Suits are not required to be worn if personnel do not physically enter these areas. ***NOTE***: A rubber mat may be used instead of cloth over-booties, or boots removed if

MDS tech data directs. When performing intake inspections while wearing a chemical ensemble (CWE), ensure all pockets are emptied and accessories removed. ***NOTE***: If CWE metal zippers are exposed, cover them with any type of tape and account for the tape upon completion of the inspection.

14.41.2.6. All personnel will remove the restricted area badge when performing intake/inlet/exhaust inspections if they physically enter these areas. Restricted area badges will be secured with a subdued nylon/cotton cord or plastic armband.

14.41.2.7. Each base will develop a local flightline clothing policy aimed at FOD prevention. Specific attention will be given to the wearing of hats on the flightline and the wearing of badges and passes. Climate and safety will be considered.

14.41.2.7.1. Metal insignias/badges will not be worn on the flightline.

14.41.2.7.2. Hats/berets will not be worn within the danger areas of an operating jet engine (IAW applicable aircraft-specific TO).

14.41.2.7.3. Wigs, hairpieces, metal hair fasteners, earrings, or any other jewelry that may fall off without notice, are not authorized on the flightline.

14.41.2.7.4. Escorts of visiting personnel will ensure FOD prevention measures are taken.

14.41.2.8. Discard readily removable (slide or pressure fit) pocket clips from tools (e.g., flashlights, continuity testers, small screwdrivers) prior to placement in tool kits. Do not disassemble/damage tools for sole purpose of removing clips, rubber switch guards, etc.

14.41.2.9. All maintenance production areas must have locally approved FO containers readily accessible to workers. All vehicles normally driven on the flightline must be equipped with secured and lidded FO containers and stenciled with the word “FOD” in contrasting letters no smaller than two inches. Back shops may locally manufacture small FO containers that can be used when an area collection can is not feasible. These containers must be stenciled with the word “FOD” in contrasting letters no smaller than two inches. All FOD containers, regardless of location, will be emptied when full or once a day, whichever comes first.

14.41.2.10. Control all work order residue used on or around aircraft, missiles, uninstalled engines, and AGE.

14.41.2.11. Rags will be controlled and accounted for IAW **Chapter 10**. Rag control applies to all organizations and personnel performing aircraft, missile, munitions, and equipment maintenance.

14.41.2.12. FOD walks are mandatory to remove FO from ramps, runways, and access roads; in addition vacuum/magnetic sweepers or sweeping by hand are highly encouraged to supplement FOD walks.

14.41.2.13. When FOD is discovered on a transient aircraft, depot input/output, or a “Queen Bee, ERRC, or CIRF” engine, the host FOD monitor or aircrew must notify the owning organization immediately. An informational copy of the FOD report must be provided to the owning organization’s safety office to ensure compliance with AFI 91-204. Aircrews must ensure proper documentation in the AFTO Form/IMT 781A has been completed.

14.41.2.14. Personal tools not controlled through CTK/ITK procedures are NOT authorized on the flightline, or in any maintenance area. (e.g., Mini-Mag type flashlights, Leatherman type

multi-tools, buck knives). Mark and control tools or equipment that a work center assigns/issues to an individual IAW AFMC supplement. Personally-purchased tools are not authorized.

14.41.2.15. Pilots and aircrew members must account for all equipment and personnel items after each flight and ensure any items that become lost during flight are documented in the aircraft AFTO Form/IMT 781A. Follow the guidelines IAW this instruction for items unaccounted for after flight.

14.41.2.16. Ensure local FOD prevention programs address the elimination of FOs in aircraft cockpits and flight decks prior to flight.

14.41.2.17. Use extreme care during engine ground runs. Jet blast areas must be free of debris that could cause FOD.

14.41.2.18. Special emphasis is required for items such as: remove before flight streamer attachment, safing pin condition, hinge pin security, dust and FO prevention cover condition/security, and aircraft forms binder condition. Periodically check these types of items for FO prevention compliance. Units will account for Dash 21 equipment and covers IAW AFI 21-103.

14.41.3. Grounding wires/points:

14.41.3.1. Two allen head screws, or equivalent, will be utilized to secure cable to grounding clip. Coat screws with RTV sealant to prevent screws from backing out. Unused screws will be removed.

14.41.3.2. All grounding points will be kept clean of debris at all times and should be a high interest item for FOD walks.

14.41.4. Use of magnetic bars on the flightline is optional. If used, the magnetic bars will be towed by or attached to vehicles primarily used on the flightline. Magnetic bars will be inspected and made FOD free prior to the beginning of each shift. A locally manufactured tool for removing debris from tire treads is authorized for use and will be identified to the vehicle by using the vehicle ID number.

14.41.5. Remove metal identification bands from all tubing, (except aircraft installed egress system components and cargo straps and chains that have ID tags attached) and cables on the aircraft and from cargo tie-down chains/devices prior to use around aircraft. Do not remove manufacturer installed metal identification bands from hydraulic hoses. Hydraulic lines will be marked IAW TO 42E1-1-1, *Aerospace Hose Assembly.*

14.41.6. Use X-ray, borescope, and other equipment to locate FO in inaccessible areas.

14.41.7. FOD Prevention Responsibilities.

14.41.7.1. The Center CV will be assigned as the FOD Prevention Program Manager and appoint a qualified TSgt (or above), or civilian equivalent, or contractor if designated by PWS, with at least 1 year experience in the maintenance field to the position of FOD monitor and their name will be posted in a prominent place within the unit on a locally developed visual aid.

14.41.7.2. The Center CV will:

14.41.7.2.1. Ensure unit commanders and first line supervisors actively support the FOD Prevention Program.

14.41.7.2.2. Provide local guidance to ensure each FOD mishap is investigated and action taken to solve any underlying problems.

14.41.7.2.3. Review all unit FOD mishap reports and analyze the reports and other data for trends identifing areas requiring management action.

14.41.7.2.4. Coordinate FOD prevention needs with the airfield manager and other agencies when construction is in progress on or near the flightline, or other areas where FOD incidents could occur.

14.41.7.2.5. Ensure FOD prevention is part of QA inspections.

14.41.8. FOD Monitor: The location of the FOD Monitor is at the discretion of the Center CV and is normally located within QA. The minimum responsibilities of the center FOD monitor are:

14.41.8.1. Inform all center agencies of FOD hazards.

14.41.8.2. Develop center procedures to document and perform spot checks of selected areas weekly.

14.41.8.3. Be involved in each FOD investigation and help ensure corrective actions are sound.

14.41.8.4. Monitor and recommend changes to FOD prevention training. Those units having several types of aircraft assigned will have their FOD prevention training incorporated into one center training program. Additionally, ensure an initial FOD awareness and responsibilities briefing is given to all newly assigned personnel.

14.41.8.5. Periodically inspect and report damaged pavement, flightline construction, or other hazards in or near aircraft parking ramps or taxiways to the airfield manager and monitor status to ensure timely repairs.

14.41.9. FOD Investigation and Reporting.

14.41.9.1. When suspected or confirmed FOD is discovered, the ALC/AMARC mantenance control function will be immediately notified. The maintenance control function will notify QA and the center FOD/DOP monitor. All aircraft sustaining FOD damage from an unknown cause will be considered for impoundment. If internal engine FOD is confirmed, the engine will be impounded IAW **Chapter 9** of this instruction.

14.41.9.2. FOD incidents are classified as preventable and non-preventable. Only preventable FOD over $20K (parts and labor) will be chargeable. FODs are considered preventable except those listed below:

14.41.9.2.1. Caused by natural environment or wildlife. This includes hail, ice, animals, insects, sand, and birds. Report this type of damage IAW AFI 91-204. Do not include these in the FOD rates.

14.41.9.2.2. From internal engine materiel failure, as long as damage is confined to the engine.

14.41.9.2.3. Caused by materiel failure of an aircraft component if the component failure is reported as a DR using the combined mishap DR reporting procedures of AFI 91-204 and TO 00-35D-54.

14.41.9.2.4. Found during depot overhaul for maximum operating time.

14.41.9.3. Additionally, the following apply:

14.41.9.3.1. Engine damage caused by improper anti-ice/de-ice procedures by either flight or ground crews are considered preventable.

14.41.9.3.2. FOD incidences leading to blade blending are reported IAW procedures below.

14.41.9.3.2.1. Notify the center FOD/DOP monitor prior to blade blending anytime FOD is identified, other than for minor sand nicks or scratches. Ensure evaluated or repaired FOD is documented in the AFTO IMT 95 (automated or manual) and CEMS, IAW TO 00-20-1.

14.41.9.3.2.2. Notify EM section with the following information for input into engine historical records; engine serial number, stage number, number of blades blended, depth of damage before and after blend, area of damage and employee stamp number of maintenance personnel.

14.41.9.3.2.3. Blade blending procedures for uninstalled engines/modules:

14.41.9.3.2.3.1. Notify center FOD/DOP monitor prior to blade blending anytime FOD is identified, other than for minor sand nicks or scratches. Ensure evaluated or repaired FOD is documented in the AFTO IMT 95 (automated or manual) and CEMS IAW TO 00-20-1.

14.41.9.3.2.3.2. Fill out Blade Blending/FOD Damage worksheet or applicable form; file in engine/module work package.

14.41.9.3.2.3.3. EM section document following information for input into engine historical records; engine serial number, stage number, number of blades blended, depth of damage before and after blend, area of damage and employee stamp number of maintenance personnel.

14.41.9.4. Preventable FOD incurred at test cell or on trim pad will be chargeable.

14.41.9.5. HQ AFMC/A4MM and A4D will assist in resolving any questionable FOD issues, i.e., preventable or non-preventable.

14.41.9.6. Center FOD/DOP monitor will report all FOD incidents to MAJCOM FOD manager by telephone, fax or e-mail as soon as the damage is known, but NLT 24 hours after occurrence.

14.41.10. FOD Prevention Committee Meeting. The Center CV is the committee chairperson. The MXW/CC will chair the meeting in the absence of the Center CV. Minimum attendee representation is all group commanders, director(s), commanders of units with maintenance personnel, safety (center and base), CE, Airfield Manager, and security forces. The chairperson designates additional attendees (e.g., agencies, detachments) as required. The host base FOD prevention committee chairperson will incorporate tenant units in the host unit program. Tenant units should establish their own unit FOD committee, but will still participate in the host program and comply with host program requirements. Meetings will be conducted monthly when the unit exceeds the MAJCOM-established standard and quarterly if the unit FOD rate is less than the established standard. The meeting will identify negative trends and develop action plans to resolve them. The meeting should also be used to recognize personnel making significant contributions to FOD prevention (e.g. golden bolt program, FOD poster contests, or other FOD recognition programs locally developed at each unit).

14.41.10.1. Suggested agenda items include:

14.41.10.1.1. Total number of airframe, engine, and tire FOD incidents during the reporting period. Indicate quantity and cause. Current status of all other pending incidents will be discussed.

14.41.10.1.2. Mechanical/vacuum sweeper status.

14.41.10.1.3. Review and refinement of the existing FOD prevention program.

14.41.10.1.4. New directives/actions established to minimize FOD.

14.41.10.1.5. Status and condition of engine run-up screens as applicable.

14.41.10.1.6. Results of X-rays for FOs during engine bay inspections, acceptance inspections and phase inspections. Maintenance trends should be discussed when an increase in FO is discovered during these X-rays.

14.41.10.1.7. Identification of potential FOD sources.

14.41.10.1.8. Lost tools/items.

14.41.10.1.9. Increased potential for FOD within the next 30-60 days.

14.41.10.1.10. Dropped objects. Pay particular attention to those that result in downstream FOD.

14.41.10.1.11. Breakdown of FOD inspections/assessments.

14.41.10.1.12. Cockpit FO incidents.

14.41.10.1.13. Commanders comments.

14.42. Forms Documentation

14.42.1. Aircraft forms documentation will be done IAW TOs 00-20-1 and 00-20-2. All Red X discrepancies will be cleared from the aircraft forms prior to flight. HQ AFMC will supplement this instruction with procedures to document all maintenance actions performed during programed depot maintenance.

14.43. Retention Management of Active Duty Enlisted Maintenance Personnel

14.43.1. Keep Enlisted Experience Program (KEEP). The USAF/A4M KEEP provides commanders and supervisors maintenance-specific tools for retention of Airmen. The KEEP was developed by maintenance experts for maintainers. Wing, Group, and Squadron commanders must make retention of enlisted maintenance personnel one of their top priorities. More information is available at the USAF/A4M KEEP web site, URL: **https://www.il.hq.af.mil/ilm/keep/index.cfm**

14.43.2. Duties and Responsibilities.

14.43.2.1. SQ/CCs or equivalant will conduct “Maintenance Retention Calls.” The agenda should concentrate on the benefits of AF service, selective reenlistment bonus, pay, medical care, education, tuition assistance, as well as career opportunities including maintenance assignment information, Career Job Reservations, Quality Force Management, Airframe and Powerplant licenses, etc. Commanders will target those airmen (and their spouses as invitees) who are eligible to separate within 12 months. Retention calls may be conducted in conjunction with regularly scheduled “Commander’s Calls.”

14.43.2.2. Supervisors play a vital role in maintenance unit retention efforts. Supervisors will:

14.43.2.2.1. Consider the professional development of their subordinates as a primary responsibility.

14.43.2.2.2. Provide career counseling to subordinates on benefits, entitlements, and opportunities available in an AF career.

14.43.2.2.3. Ensure counseling occurs in conjunction with performance feedback or when an individual comes up for quality review under the Selective Reenlistment Program.

14.43.2.2.4. Review with each individual the AF Benefits Fact Sheet, and provide each individuala copy at the end of each counseling session located at **https://www.afpc.randolph.af.mil/enlskills/currentfacts.htm**

14.43.2.2.5. Keep unit leadership abreast of adverse trends.

14.43.2.3. Key Decision Points**.** SQ/CCs or equivelant must ensure supervisors counsel first- and second-term airmen at critical points prior to reenlistment to make sure members get the most current information in order to make the right decisions. Leadership at all levels must be involved.

14.43.2.4. 18-Month Point. Supervisors will ensure members are scheduled to attend a mandatory base wide “Right Decision” type briefing, hosted by the WG/CC and CAA 18-months prior to date of separation.

14.43.2.5. 13-/12-Month Point

14.43.2.5.1. Member meets with supervisor to discuss Selective Reenlistment Program (SRP), career options, and include the following:

14.43.2.5.1.1. Member's status regarding reenlistment.

14.43.2.5.1.2. Member’s intentions regarding retention. Determine and address reasons affecting separation decision.

14.43.2.5.1.3. Review PIF with member.

14.43.2.5.1.4. Provide and discuss AF Facts and Benefits Sheet.

14.43.2.5.1.5. Counsel member regarding Career Job Reservation or cross training options.

14.43.2.5.1.6. Refer issues regarding assignment or job opportunities for SQ/CC engagement.

14.43.2.5.2. Supervisor forwards SRP package to SQ/CC or equivelant for endorsement.

14.43.2.5.3. The SQ/CC or equivelant meets with individual before signing the SRP recommendation.

14.43.2.6. 6-Month Point

14.43.2.6.1. Member meets with the supervisor to determine current intentions.

14.43.2.6.2. If unsuccessful in retaining on active duty, encourage the member to meet with ANG/AFRC recruiters or consider civil service option.

14.43.2.6.3. Make member aware of Palace Chase/Palace Front Programs.

14.43.2.6.4. Brief airman on the Extended Prior Service Program.

14.43.2.6.5. Discuss airmen's options for reentering the AF if they decide to separate.

14.44. Land Mobile Radio (LMR) Management.

14.44.1. Maintenance Communications. Reliable, redundant, and effective communications systems are essential for efficient maintenance operations. These systems should provide accurate, timely, secure, programmable frequency and jam resistant communications needed to accomplish the maintenance mission in a fully deployed isolated mode. MXW/CC designated OPR has the overall responsibility to ensure adequate communications are available and manage the non-tactical radio program. Personnel will receive initial radio operating training before assuming duties involving radio operation AFI 33-106, AFMAN 33-120, AFI 33-118, and AFI 33-202V1. For effective flightline operation, more non-tactical radio nets are authorized when large numbers or different types of weapon systems are assigned or when SAs so specify. The following general guidelines apply:

14.44.2. Allowance for specific radios are shown in AS 660, *Equipment Allowances for Non-Weapon Systems Communications Requirements*, *Repair Cycle Data Listing*. Process requests for specific radio equipment to support maintenance activities IAW AFMAN 23-110, and AFI 33-106,AFMAN 33-120, AFI 33-118, and AFI 33-202.

14.44.3. A VHF/UHF radio is authorized to provide communications between aircraft and maintenance. Aircrews may relay advance status information. Coordinate procedures for use of these radio communications with operations.

14.45. Senior Leaders' Maintenance Course (SLMC).

14.45.1. General. The AF Senior Leaders' Maintenance Course (SLMC) is a Chief of Staff initiative developed to educate wing leadership on aircraft maintenance, operations, and flightline support in both expeditionary and home station environments. Its objectives include: strengthen the relationship and teamwork between operations, maintenance, and support; deepen insight into unit operations, maintenance, and support activities; and focus attention on policy, procedures, training, discipline, and enforcement.

14.45.2. Course Policies. SLMC implementation instructions are as follows:

14.45.2.1. Mandatory for Wing CC/CV, OG/CC/CD, MXG/CC/CD, and MSG/CC/CD.

14.45.2.1.1. MAJCOM/CV may approve attendance waivers for those who have already attended SLMC in a different MAJCOM. The waiver should not be automatic and consideration should be given to the unique maintenance operations of the new MAJCOM.

14.45.2.2. Must complete SLMC within 6 months of assignment.

14.45.2.2.1. MAJCOM/CV is the approval authority for cancellations once an officer is given a course date. If cancellation is approved, the officer must still attend SLMC within 6 months of assignment.

14.45.3. Each MAJCOM will hold at least two SLMCs annually.

14.45.4. Letter signed by CSAF must either be sent to attendees in advance or included in the welcome package.

14.45.5. MAJCOM/CC sponsors the course.

14.45.6. MAJCOM/A4 (or equivalent) will normally plan and host the course, attend throughout, and present key briefings.

14.45.7. Other briefings may be conducted by a SME. The briefer should be at least a colonel or civilian equivalent. A lower-ranking SME may brief by exception.

14.45.8. Course length is capped at 3 days.

14.45.9. MAJCOM/CC (or CV in absence) is expected to open the course.

14.45.10. Functional SMEs are expected to attend to answer functional questions.

14.45.11. Required topics must be presented (but may be adapted to each MAJCOM's mission): CSAF video, wing organization evolution, CWO team (wing organization evolution and CWO team can be combined), SORTS and ART, WG/CC standup, using analysis, QA, flying hour program, planning and scheduling, deployment and AEF support issues, force sustainment/reachback, maintenance discipline, aircraft & flying goals/standards/productivity, scheduled maintenance inspections, CANN and Hangar Queen management, training, safety, base repair cycle, supply issues, and financial management.

14.45.12. Optional topics: LSEP/MSEP, Base X case study, FOD/DOP, aircraft appearance, maintenance manning and retention, workforce management, propulsion, weapons system teams and roadmap, AF munitions, DCC Program.

14.45.13. Feedback: Critques will be used to improve and adapt the course to better serve senior leaders' needs.

14.45.14. Designating an OPR: The MAJCOM/A4 (or equivalent) will designate an OPR for the overall course and the action officer will be responsible for maintaining and updating MAJCOM adaptations and optional topics. These briefings should be reviewed and updated prior to each class.

14.45.15. Attendance and Scheduling: The MAJCOM OPR will identify and schedule wing leaders and will work with the MAJCOM/A1 to track attendance. The annual frequency of the course will be determined by MAJCOMs based on the population of senior leaders. Personnel from ARC units can attend another MAJCOM's course.

14.45.16. Course Materials: MAJCOMs may provide a paper or electronic copy of unclassified material. The electronic copy will provide briefings for presentation within their unit.

14.46. Product Improvement Programs. This section describes specific programs the MXW/CC must assign individuals to manage.

14.46.1. Product Improvement Program (PIP). The MXW/CC will assign Product Improvement Manager (PIM) duties within their organizations. The PIM promotes deficiency reporting and provides a sound PIP based on inputs from maintenance activities. The PIM emphasizes and promotes product improvement and ensures maintenance personnel are familiar with them by circulating flyers/newsletters, visiting commanders calls, presenting the program at maintenance orientation briefings and making routine visits to maintenance areas. Combined with daily maintenance data reporting, the PIP provides an effective means to improve the R&M and support PIWG of aircraft and equipment. PIP includes the following programs:

14.46.1.1. Deficiency Reporting.

14.46.1.2. AFTO IMT 22.

14.46.1.3. R&M as applicable.

14.46.2. The PIM responsibilities include the following:

14.46.2.1. Deficiency Reporting . DR is the process of reporting prescribed by TO 00-35D-54, DREAMS and TO 00-5-1.

14.46.2.2. AFTO IMT 22. Submit AFTO IMT 22 (or electronic means for digital TOs) to correct and improve TOs. The PIM will:

14.46.2.2.1. Ensure proper evaluation is performed and forms are properly filled out and processed IAW TO 00-5-1 and MAJCOM supplements.

14.46.2.3. Reliability and Maintainability (R&M). At the core of AF R&M efforts are technical working groups (e.g., PIWG, MDS maintainers conferences). PIMs must forward inputs IAW AFI 21-118. Assessing unit R&M concerns is a twofold process. First, review all reported R&M deficiencies and determine those caused by unit factors and local conditions versus those beyond the unit's control. Second, review available maintenance and supply trends and high work hour consuming repairs. Analysis provides the majority of this information. The PIM will:

14.46.2.3.1. Consolidate functional area reports for each system (e.g., AGE, weapons, PMEL, avionics, engines, commodities and airframe) and prioritize proposed items for a particular system IAW weighted factors in AFI 21-118.

14.47. Technical Order Distribution Office (TODO). The TODO ensures TOs are managed IAW TO 00-5-1, TO 00-5-17, TO 00-20-17, AFI 21-303 and AFPD 21-3, *Technical Orders*. Establish the PMEL TODO under the control of the TMDE Flight. TO 00-5-1 provides criteria for establishing levels of TO distribution activities. Additionally, wing TODO offices shall control electronic technical data configuration IAW **Chapter 10** of this instruction. Sub-functions of the TODO are described below.

14.47.1. The TODO shall:

14.47.1.1. Coordinate with the appropriate production planning team or QA subject matter expert (SME) for each incoming TCTO to determine applicability.

14.47.1.2. Date stamp TCTOs to reflect the date the hard copy is received. The compliance period start date for an inspection TCTO is upon receipt of the TCTO itself and it must be completed entirely within the stated time frame or the affected system/equipment must be removed from service. Determine applicability by aircraft serial number for aircraft TCTOs, engine serial number for engine TCTOs and by part number or other specific criteria for commodity TCTOs. Date stamping all TCTOs with the date received indicates QA has reviewed the TCTO and that it is applicable. Only date stamped TCTOs are authorized for use. All TCTOs received from outside agencies must be routed through the production planning team or QA for the review process.

14.47.1.3. Provide copies of the TCTO to the work centers doing the work. Mark these TCTOs as “working copy/destroy when complete”. Do not place these working copies in a formal TO file. Provide a file copy of the TCTO to the weapons system support center.

14.47.1.4. To ensure effective distribution, TODOs must ensure their office is a member of the appropriate Defense Message System (DMS)/mail distribution list to receive interim TCTOs. The TODO must establish DMS requirements with the DMS owner as well as the local base distribution center IAW TO 00-5-1 and AFMAN 33-326, *Preparing Official Communications*.

14.47.1.5. Ensure personnel assigned as a TODO/TODA meet requirements set forth in TO 00-5-1, AFI 21-303 and applicable directives.

14.47.1.6. Maintain records of Automated Computer Program Identification Number System (ACPINS) using Technical Orders 00-5-1, 00-5-16, and 00-5-17. TODOs shall set up software sub-accounts with each appropriate shop/section and ensure each shop/section has the most current software on hand. Additionally, TODOs shall include ACPINs in the routine and annual checks required by Technical Orders 00-5-1.

14.47.2. TODOs on-line with JCALS must use JCALS as the primary TO management system. All TODOs not on-line with JCALS must use ATOMS to establish and maintain records for all TOs required and distributed by organization shops and offices serviced by the TODO IAW TO 00-5-1.

14.47.3. Local Work Cards, Job Guides, Page Supplements and Checklists. Limit use of local work cards (LWC), local job guides (LJG), local page supplements (LPS) or local checklists (LCL) to accomplish maintenance on AF equipment. Locally prepared technical instructions must not be used to circumvent AFMCs inherent responsibility for technical data (see TO 00-5-1). The TODO must review and manage all locally developed products IAW TO 00-5-1 and MAJCOM supplements for safety and adequacy of procedures. Ensure LWCs, LJGs, LPSs and LCLs are reviewed for currency when source reference data changes. Develop OIs to comply with these policies.

14.47.4. DMS Maintenance. To ensure effective and timely TO and TCTO distribution, TODOs are responsible for identifying the proper addressees for message distribution to receive interim Operational/Safety supplement TCTOs. TODOs must establish distribution requirements per TO 00-5-1 and AFMAN 33-326.

14.47.5. TO Change Notification. The TODO must prepare a list of all changes and revisions to indexes, TOs, inspection work cards and checklists. This list must include TO number and date received. This list must be included in the wing's weekly maintenance plan and flying schedule or electronically linked. Supervisors must review the list of changes and ensure all personnel are aware a change or revision has been received. Additionally, "Immediate" action TCTOs must be dealt with upon receipt, and "Urgent Action" TCTOs, safety supplements and interim supplements must be brought to the attention of supervisors within 24 hours of receipt.

14.47.6. TO File Inspections. The QA TODO shall inspect other maintenance TODOs/TODAs in the maintenance complex at least annually along with performing spot checks of TO files. As a minimum, the TODO must use the "TODO and TO Account Checklist" provided in TO 00-5-1. As part of this inspection, the TODO should evaluate and ensure whether the TODO/TODA has received the proper training.

14.48. Functional Check Flights (FCFs).

14.48.1. FCFs, to include OCFs, are performed to ensure an aircraft is airworthy and capable of accomplishing its mission. However, FCFs are not normally flown when the airworthiness of the aircraft can be determined by maintenance operational checks prescribed by a technical directive. Additional guidance may be found in AFI 11-401, *Aviation Management*; AFI 11-202V3*, General Flight*

Rules; AFI 13-201, *Air Force Airspace Management*; TO 1-1-300, *Acceptance/Functional Check Flight and Maintenance Operational Checks*; TO 00-20-1; and applicable Dash 6 and Dash 1 TOs. The OG/CC is responsible for appointing an OIC to manage and administer the program. The AMXG/CC and OG/CC must establish and implement local FCF procedures.

14.48.2. The FCF OIC and Functional Test Flight FCF manager will:

14.48.2.1. Establish local FCF procedures and checklists for any specific local aircraft requirements to include configuration, administration, control, and documentation of the FCF, OCF, and high-speed taxi check programs. Coordinate them with OG Standardization/Evaluation.

14.48.2.2. Establish an FCF training and certification program.

14.48.2.3. Review FCF results on a continuing basis and recommend modified FCF criteria and procedures.

14.48.2.4. Work with maintenance and operations in areas of flying safety, standardization and operational maintenance priorities with respect to the FCF program.

14.48.2.5. Maintain an information file for briefing aircrews. As a minimum, this file must contain unit directives concerning FCF procedures, authorization lists for FCF crews and an FCF checklist for each MDS assigned.

14.48.2.6. An FCF checklist must be used for each FCF. During debriefing, the FCF checklist and aircraft forms must be reviewed to determine if all requirements have been accomplished. Each discrepancy discovered during the FCF must be documented on AFTO Form/IMT 781A. After completing the review, the checklist must be sent to aircraft records section for inclusion in the aircraft jacket file.

14.48.2.7. Maintain a copy of the AF IMT 2400 or equivalent automated product for deficiency and trend analysis.

14.48.3. The Functional Test Flight FCF manager will:

14.48.3.1. Ensure the FCF aircrew is briefed (for all FCFs to include OCFs) on the purpose and extent of the flight, previous maintenance problems and discrepancies recorded on the aircraft or engines related to the FCF.

14.48.3.2. Ensure aircraft W&B documents are reviewed.

14.48.3.3. Ensure AF IMT 2400**, Functional Check Flight Log**, or an equivalent automated product is maintained to provide information for evaluation and analysis. Include the date and time of the FCF, aircraft serial number, reason for FCF, name of debriefer and name of aircraft commander. The FCF Log also indicates if the aircraft was released for flight, reasons for any non-release, action taken and date completed and the date maintenance documents were forwarded to records section.

14.48.3.4. The Functional Test Flight accomplishes the following:

14.48.3.4.1. Configure the aircraft for FCF/OCF IAW technical data and local directives.

14.48.3.4.2. Ensure all maintenance actions are completed and all AFTO IMTs 781 are documented IAW Dash 6 and 00-series TOs.

14.48.3.4.3. Flight Requirements. The mandatory requirements for FCF are outlined in TO 1-1-300 and the applicable Dash 6 TO. FCF profiles are normally determined by and tailored for the maintenance requirement causing the FCF. The decision to fly a full profile FCF is the AMXG/CC's (AMARC/MA) and OG/CC's discretion. Tailor the FCF profile for the discrepancy causing the FCF applying the following guidance:

14.48.3.4.3.1. Require a clean configuration whenever FCFs are flown for flight controls, fuel controls or engine changes. Do not remove fixed wing pylons, fixed wing tip tanks and fixed external stores unless they interfere with fuel scheduling, aerodynamic reaction, air loading, signal propagation, etc.

14.48.3.4.3.2. Do not fly FCFs in conjunction with other missions or training requirements, unless authorized in TO 1-1-300.

14.48.3.4.3.3. Comply with weather condition requirements IAW TO 1-1-300 at all times unless aircraft are urgently required for operational commitments. Waiver provisions are outlined in TO 1-1-300 for the MDS involved.

14.48.3.4.3.4. FCF Release. An FCF release occurs upon the successful completion of all requirements as determined by the FCF aircrew. The final decision to release rests solely with the aircraft commander. An FCF conditional release may occur when the aircraft does not successfully complete FCF requirements, due to a specific system malfunction, if the FCF aircrew (in consultation with maintenance) determines the malfunction may be corrected without generating another FCF. If on review of the corrective action the FCF aircrew accepts the maintenance action as a satisfactory repair of the malfunction, they may release the aircraft from FCF.

14.48.3.4.3.5. FCF Aborts. All ground aborts result in a non-release. An aircraft may be released for flight if a malfunction occurs during an FCF, which is not related to the condition generating the FCF and the original condition checks good.

14.48.3.5. Units must refer to MAJCOM instructions for FCF procedures away from home station.

14.49. High Speed Taxi Checks. High speed taxi checks may be utilized IAW TO 1-1-300 instead of FCFs with AMXG/CC and OG/CC authorization, when a maintenance ground operational check requires aircraft movement at higher than normal taxi speeds to operationally check completed maintenance. This procedure should rarely be used due to the potential for aircraft damage; FCFs are preferred over high speed taxi checks. Perform high speed taxi checks with qualified FCF aircrews. Process aircraft forms through QA using FCF procedures. QA develops an aircrew briefing checklist specifically for high speed taxi checks, to include the required FCF briefing items and pertinent warnings, cautions, etc.

14.49.1. To minimize brake and tire wear, configure aircraft with the minimum fuel practical to accomplish the high-speed taxi check. Ensure aircraft is prepared for flight and the Exceptional Release (ER) is signed off. Do not conduct high speed taxi tests, self-propelled movement of the aircraft or any operation where the possibility of becoming airborne exists, with less than the Dash 1 (aircraft flight manual) operational fuel minimums onboard.

14.49.2. Aircrew performing high-speed taxi checks must complete a take-off data card to indicate the highest speed expected to ensure sufficient stopping distance is available for existing runway conditions without exceeding normal brake energy limits. For aircraft equipped with an arresting hook,

taxi checks of speeds 100 knots or above require the hook to be lowered once the pilot begins to initiate braking action. For taxi checks below 100 knots, the pilot lowers the hook if there is any doubt about stopping the aircraft within the bounds of the remaining runway.

14.50. Weight and Balance (W&B) Program. Maintain strict accounting of aircraft W&B for safe flight and ground operations. Each unit manages a W&B program, ensuring accurate inventories of aircraft weight. As the W&B authority, the AMXG/CC or MA shall appoint an individual to be the unit W&B program manager.

14.50.1. W&B Program Manager Responsibilities. The W&B Program manager must ensure compliance with appropriate TO procedures for weighing aircraft. The W&B Program manager carries out their responsibilities with assistance of W&B technicians. The W&B technician must verify scale readings and accomplishes or oversees the actual computations. The W&B technician supervises the preparation, leveling and weighing of the aircraft IAW TO 1-1B-50, *Basic Technical Order for USAF Aircraft Weight and Balance*. W&B Program technicians are not required to participate in aircraft preparation, but are responsible for ensuring preparation is properly accomplished. The W&B program manager ensures:

14.50.1.1. Sufficient personnel are qualified on assigned aircraft IAW TO 1-1B-50.

14.50.1.2. W&B inventories are accomplished IAW applicable directives.

14.50.1.3. All assigned aircraft are weighed IAW applicable directives. Keep W&B documents required by TO 1-1B-50 for each assigned aircraft. Use the Automated Weight and Balance System (AWBS), and keep a back-up copy of all W&B documents.

14.50.1.4. Procedures are written by the W&B manager for routing completed TCTO and modification information for W&B changes.

14.50.1.5. A W&B qualified technician inspects W&B documents before flight when locally accomplished modifications affect the basic aircraft weight and moment. Review computations for accuracy.

14.50.1.6. Essential W&B data and changes to the basic weight and moment are available for appropriate mission planning (e.g., Standard Configuration Loads, updates to supplemental handbook).

14.50.1.7. QA periodically inspects unit-stored/maintained W&B equipment for serviceability (as applicable).

14.50.1.8. QA and Functional Test Flight Supervisor work together in developing a W&B Preparation Checklist if the aircraft Dash 5 TO is not comprehensive enough for the task.

14.50.1.9. W&B manuals are maintained for Class I and II aircraft in a central file. Maintain and store Class I and Class II aircraft W&B handbooks IAW TO 1-1B-50. The method of supplemental handbook storage and physical location must be standardized by the lead command for like MDS. ***NOTE:*** Manage commercial derivative aircraft IAW FAA procedures, contract specifications and the manufacturer's maintenance manuals. The contract logistics support (CLS) contractor is normally responsible for managing W&B programs on these aircraft.

14.50.1.10. W&B certified technicians will be documented on an appointment letter.

Chapter 15

AIR AND SPACE EXPEDITIONARY FORCES (AEF) MAINTENANCE POLICY

15.1. AEF Effectiveness. An AEF is one of 10 force packages of trained and ready Total Force capabilities. These capabilities are designed to deploy as part of an Air and Space Expeditionary Task Force (AETF) providing the war fighting combatant commander with air and space combat power. Agile Combat Support (ACS) is key to the success of the war fighter, and Centralized Intermediate Repair Facilities (CIRFs) represent an important logistics capability in the process of sustaining mission operation that is a major subset of ACS. ACS is an AF distinctive capability, which encompasses the process of creating, sustaining, and protecting all air and space capabilities to accomplish mission objectives across the spectrum of operations.

15.2. AEF Processes. At the highest level, ACS is the product of six master processes that can be measured to describe the levels of preparedness and sustainment capacity of combat support capability. As our combat support capability depends on aircraft maintenance effectiveness, these six main processes form the structure for this AEF maintenance policy.

15.2.1. Readying the force – organizing, training, equipping, providing, and planning for the use of forces to produce combat capability.

15.2.2. Preparing the battle space – assessing, base support planning, posturing capabilities and their inherent resources in UTCs for employment, executing prepositioning strategy, and executing agreements.

15.2.3. Positioning the force – tailoring and preparing to deploy, deployment, and beddown of forces.

15.2.4. Employing the force – generating immediate launch and/or strike capability, providing right-sized essential support, and ensuring regeneration.

15.2.5. Sustaining the force – maintaining effective levels of support for operations worldwide beginning on day one of employment operations.

15.2.6. Recovering the force – redeployment and reconstitution, ensuring that the instrument of Air and Space Power is a tool that can effectively be applied repeatedly.

15.3. Readying the Force. Organizing, training, and equipping for the use of forces to produce combat capability.

15.3.1. Organizing for combat capability.

15.3.1.1. MAJCOMs shall establish maintenance UTC using War Mobilization Plan, Volume 5 (WMP-5) rates or the most stringent scenario to support Major Theater War (MTW) requirements; MAJCOMs may tailor 10 percent of flightline personnel and zero percent of backshop personnel in UTCs at execution if required to support deployment requirements. Ensure proper coordination with host unit.

15.3.1.1. **(ANG)** Refer to ANGI 10-401, *Air National Guard Unit Type Code Management.*

15.3.1.2. MAJCOMs will develop modular (stackable) and scalable UTCs that, in total, represent the unit's deployable equipment and personnel requirements. Personnel requirements will be identified using Logistics Composite Model (LCOM). Functional Area Managers (FAMs) will refer to

AFI 10-401 and Air Staff Functional Area Management guidance for specific UTC development, management, and maintenance of UTCs.

15.3.1.3. MAJCOM Aircraft Maintenance FAMs and MAJCOM Functional Managers (MFM) will ensure that all maintenance manpower requirements are documented and submitted to the AF Corporate Structure using the POM process IAW AFI 38-201, *Manpower and Organization.*

15.3.1.3.1. The Aircraft Maintenance Career Field Manager and/or Air Staff Aircraft Maintenance FAM will support the MAJCOM FAM and MFM throughout each POM cycle.

15.3.1.3.2. LCOM is the aircraft maintenance manpower determinant and as such should be fully funded. As maintenance positions become funded, they will be placed in the appropriate UTC.

15.3.1.3.3. Total Force UTCs will be used to the maximum extent possible where AD and ARC manpower supports the effort. This will reduce the total number of aircraft maintenance UTCs currently postured. For example, an AFRC C-130 unit could posture to a UTC being used by AD C-130 units. AD and ARC authorizations should not be mixed in like UTCs unless they are assigned to the same unit.

15.3.1.4. MAJCOM FAMs must maximize use of standard UTCs and limit line remarks.

15.3.1.5. Sourcing conferences are the primary means of matching requirements to capabilities. The AEF Center (AEFC) shall organize and chair a sourcing conference, as required, prior to each AEF cycle. Attendance for planning conference will include: action officers from units to deploying aircraft, Mx/Muns representatives from the AOR (if operations are already in place), combatant component command representatives, MAJCOM FAMs, AF/A4M representatives and AEFC representatives.

15.3.1.5. **(ANG)** ANG Deployments Division (NGB/A3) conducts ANG Aviation Maintenance and ECS sourcing conferences for all AEF pairs.

15.3.1.5.1. The primary purpose of the AEF sourcing conferences is to determine which bases shall provide personnel to fill ULNs in Expeditionary Combat Support (ECS) UTCs. The conference may also include informational briefings, but these must be kept to a minimum.

15.3.1.5.1. **(ANG)** NGB/A3 conducts ANG Aviation Maintenance and ECS sourcing conferences for all AEF pairs.

15.3.1.5.2. Air Staff Maintenance and Munitions Policy Divisions (AF/A4MM and AF/A4MW) shall chair a one-day meeting in conjunction with each sourcing conference to resolve sourcing conflicts and plan for the next AEF rotation or contingency.

15.3.1.6. Every AF maintenance member shall be assigned to a UTC (deployable or in-place).

15.3.1.7. MAJCOMs shall source maintenance personnel to fill AEF vacancies after the AEFC accomplishes the nomination process in the following order:

15.3.1.7.1. Lead wing.

15.3.1.7.2. Sister wing.

15.3.1.7.3. Lead AEF.

15.3.1.7.4. Paired AEF.

15.3.1.7.5. Alternate MAJCOM.

15.3.1.7.6. Air Reserve Component (ARC).

15.3.1.8. Quarterly, units must validate and document wing UTCs and AEF taskings against wing/squadron Designated Operational Capability (DOC) statements. Specifically, units must ensure no shortfalls exist by aligning required skill level, grade, line remarks, and CFETP qualifications against UTCs, to include AEF taskings, for all assigned personnel. If a shortfall exists, the unit must immediately start an aggressive training program to eliminate shortfall.

15.3.2. Training for combat capability.

15.3.2.1. Commanders must ensure personnel are trained to meet taskings inclucding special requirements based on line remarks, MISCAP, SEI and job descriptions, as applicable.

15.3.2.2. At Utilization and Training Workshops (U&TW), MAJCOM functional managers must work collectively with AF career field managers to establish/update minimum wartime skills training requirements by AFSC and MDS. These training requirements must be incorporated in personnel training folders as core tasks.

15.3.2.3. Supervisors must ensure their subordinates are adequately trained and qualified before allowing them to work unassisted on aircraft or equipment. Supervisors must place emphasis on upgrade and proficiency training by providing hands-on demonstration and over-the-shoulder evaluations of their subordinates.

15.3.2.4. To the greatest extent possible, without affecting safety, conduct recurring training to align with AEF cycles.

15.3.3. Equipping for combat capability.

15.3.3.1. Maintenance commanders must provide tools, facilities, and environmental protection equipment to ensure a safe working environment and mission capable workforce.

15.3.3.2. Maintenance commanders must establish minimum essential equipment levels to measure and report the unit's mission readiness through the SORTS. Readiness must also be reported using the AEF UTC Reporting Tool (ART).

15.3.3.3. Total Asset Visibility (TAV). The combatant and supporting-commands need accurate and timely information management systems (i.e., AF Portal CIRF Logistics Information Network, CEMS, IMDS-CDB, G081, RAMPOD, SBSS, and REMIS) for all locations with TAV to make swift and accurate logistics command & control decisions. Deployed units, CIRFs and LRCs must report deployed aircraft and asset status by tail/serial number daily.

15.3.4. Establishing Quality of Life.

15.3.4.1. Maintenance commanders shall review site surveys from all deployed locations to ensure living and working conditions are adequate for deploying personnel and notify appropriate base agencies or MAJCOMs as necessary to correct deficiencies.

15.3.4.2. Maintenance commanders must ensure all maintainers are notified of their deployment vulnerability period to allow them to plan personal affairs.

15.3.5. Monitoring the world situation.

15.3.5.1. Based on Threat Working Group recommendations, the maintenance commander, as appropriate, shall inform maintenance personnel of potential threats and direct specific actions be taken to avoid terrorist attack, to prepare for short-notice deployment, to accommodate changes in working hours (shifts, extensions, etc.), to adjust aircraft scheduled maintenance priorities, etc.

15.3.6. Support training for Operations Tempo (OPTEMPO).

15.3.6.1. Operations Officer/MX SUPT must ensure work force training requirements and overall maintenance capabilities are considered in the weekly flying and maintenance schedule. MXG/CC must ensure scheduled maintenance and training events are balanced against sortie production requirements.

15.3.7. Accomplish strategic capability assessments.

15.3.7.1. Units must coordinate with deploying lead wing communications personnel or host base communications personnel to ensure reachback capability is available at the deployed location for maintenance operations.

15.3.7.2. The lead wing must coordinate with participating units prior to deployment to identify communication/information system requirements and ensure all radios are keyed with appropriate frequencies for the deployed location.

15.3.7.3. Unless otherwise directed, units should plan to provide their own flightline communication capabilities and hardware at the deployed location to support maintenance operations. Units should contact the lead wing or host base communications to ensure compatibility of hardware and software.

15.3.7.4. Units must prepare to deploy all critical equipment.

15.3.7.5. Whenever deployed locations are identified, the owning MAJCOMs must posture appropriate UTCs at the Forward Support Locations (FSLs). The FSL must be used to store munitions for WRM or at sites for consolidated maintenance activities (such as CIRFs).

15.3.8. Establish procedures to ensure core security of forces.

15.3.8.1. Maintenance commanders must ensure all deploying personnel have completed all training and Unit Personnel Readiness requirements prior to deployment.

15.3.8.2. Flight chiefs must ensure maintenance technicians are aware of their responsibilities to detain/report unidentified persons discovered in restricted or sensitive areas.

15.4. Preparing the Battle Space. Assessing, base support planning, posturing capabilities and their inherent resources in UTCs for employment, executing prepositioning strategy, and executing agreements.

15.4.1. Monitor theater situations.

15.4.1.1. Maintenance commanders and supervisors must closely monitor theater situations, and take preemptive measures to avoid degradation of lines of communication.

15.4.1.2. The lead maintenance person must stay abreast of security concerns and intelligence updates and brief subordinates as necessary.

15.4.2. Define employment requirements.

15.4.2.1. Incoming units must coordinate with the AOR deployed commander, departing units and supporting CIRFs (where applicable) to develop, maintain, and utilize site survey maintenance planning to pare and tailor UTCs to minimize personnel and equipment footprint at the deployed location. When applicable, units must ensure spare ECM and navigation and targeting pod containers are available for shipping spare pods to the AOR as these containers will be required to transport unserviceable assets to and from CIRF locations.

15.4.2.2. Units planning to deploy to the same location must coordinate with each other prior to requesting airlift to ensure each unit knows what support equipment, test equipment, tools, technical data, spare parts, etc., the other is bringing so as to leverage economies of scale and minimize footprint at deployed location. ***NOTE:*** The lead wing has ultimate responsibility for ensuring proper personnel and equipment deploy to support the mission.

15.4.2.3. Maintenance commanders are responsible for ensuring assigned personnel are identified for AEF rotations and briefed concerning their AEF schedules.

15.4.2.4. Maintenance commanders must ensure to the greatest extent possible that supervisors schedule personnel leave, training, and Professional Military Education around the personnel deployment vulnerability window.

15.4.3. Conduct Agile Combat Support feasibility/capability assessments.

15.4.3.1. The lead wing MXG/CC determine maintenance ACS requirements to include CIRFs, utilize smallest UTCs to meet capability, tailor them as required, identify deploying personnel and alternates by name, and take any necessary actions to acquire additional support or equipment as required prior to deployment.

15.4.3.2. Operational mission requirements at deployed locations take precedence over routine home station requirements. Units must take necessary actions to preclude submitting reclama or shortfall of requirements.

15.4.3.3. AEF wings and CIRFs shall report personnel and equipment shortfalls/Limiting Factors (LIMFAC) to the owning MAJCOM FAM who, after review and concurrence, shall in turn forward to the AEF Center for action.

15.4.3.4. Commanders must ensure deploying units plan to use existing CIRFs, and submit to the CIRF-supporting command's RSS the appropriate AF IMT 616, Fund Cite Authorizations, to repair CIRF commodities no later than 30 days prior to deployment or as soon as possible if deployment is within 30 days. AF IMT 616 will cover CIRF supplies, parts and fuel required to repair unit assets. For engines, two AF IMT 616s will be required, one for parts and one for fuel.

15.4.3.5. Prior to deployment, the lead wing's senior maintainer must coordinate efforts with the wing LRS/LRF to gather base support capabilities and site survey information (e.g., physical layout, facilities, equipment, local capabilities, etc.) from host nation and/or coalition maintenance liaison.

15.4.3.6. Operations Officer/MX Supt shall coordinate with wing plans section to review Expeditionary Site Plans (ESP), Joint Operations Planning and Execution System (JOPES), and SIPRNET (classified) sites.

15.4.4. Acquire, assess, and update deployment destination information.

15.4.4.1. Upon arrival, each aircraft maintenance section must create/update base capabilities and site survey information to reflect current situation in the Security Awareness Training and Education (SATE) database. The lead aircraft maintainer must forward this information to their MAJCOM logisitics plans, who will forwared the information to follow-on units so they may better prepare for deployment to that location. MAJCOMs must ensure this information is provided to their Logisitcs Plans function so that Base Support and Expeditionary Site Plans can be updated as required.

15.4.5. Define deployment assets.

15.4.5.1. Based on review of BSP, ACS concepts, and assets available at the deployed location, supported commands in conjunction with supporting-commands shall determine deployment and mobility assets needed for maintenance operations. The combatant command must source assets for beddown and sustainment. Deploying units must deliberately plan to use CIRFs to reduce deployment airlift, force protection, and footprint at the Forward Operating Location (FOL).

15.4.6. Pre-positioned assets.

15.4.6.1. Prior to deploying, LRS personnel must review available assets loaded in the pre-positioned Consumable High Priority Mission Support Kit (CHPMSK), along with home station RSPs, to determine overall support requirements. MAJCOMs must determine RSP and CHPMSK authorizations, while the supporting RSS provides remaining supply support, including RSP and CHPMSK replenishment.

15.4.6.2. To reduce footprint and airlift requirements, common equipment, such as AGE, materiel handling equipment (MHE), and/or munitions trailers, should be pre-positioned at AEF sites or at centralized facilities in the AOR.

15.4.6.3. The in-place lead wing must maintain an accurate list of equipment on site and report status and inventory to MAJCOMs and AEF-vulnerable units.

15.4.6.4. MAJCOM WRM Managers must maintain lists of WRM available in the AOR.

15.4.6.5. Supporting-command CIRFs must review CIRF CHPMSK levels to determine if they are sufficient to support the deploying unit and adjust the amount of parts as required. The RSS and MAJCOM providing supply support to the CIRF are responsible for CHPMSK management to include replenishment.

15.4.7. Establish and maintain deployment capability.

15.4.7.1. Units, to include CIRFs, must maintain accurate inventories and status of deployed or deployable equipment, keep SCRs current, and manage personnel training and scheduled aircraft maintenance priorities.

15.4.8. Protection of resources.

15.4.8.1. Ensure security considerations and actions taken to protect aircraft, personnel, and equipment are consistent with intelligence assessments. For example, if intelligence reports indicate the threats to property or personnel are highest near the perimeter of the airfield, commanders and maintenance supervisors may direct aircraft parking and maintenance areas to be located a safe distance away.

15.4.9. Prepare employment security actions.

15.4.9.1. All AEF wings should review and become familiar with theater AEF CONOPS for planning purposes.

15.5. Positioning the Force. Tailoring and preparing to deploy, deployment, and beddown of forces.

15.5.1. Account for pre-positioned assets.

15.5.1.1. Lead wings must coordinate with supporting units to ensure only required equipment is deployed and pre-positioned assets, to include CIRF pooled assets, are used to the greatest extent possible.

15.5.1.2. If accurate status of pre-positioned equipment is unavailable prior to deployment, the lead wing must send a team of qualified equipment technicians in the advanced echelon (ADVON) of the main deployment, if possible, to evaluate/report status of pre-positioned assets in theater.

15.5.2. Account for host-nation and coalition assets and support.

15.5.2.1. Deploying units shall estimate the level of maintenance required to be performed at FOL based on the organic repair capability, CIRF, and host nation support (HNS) availability. Tailor the personnel equipment and spares in the deploying UTCs to reduce the footprint while ensuring 100 percent task coverage.

15.5.3. Tailor and prepare deploying assets.

15.5.3.1. AMUs must utilize CIRFs to the greatest extent possible. To that end, MAJCOMs must source personnel and equipment for CIRFs whenever feasible to reduce their footprint at the deployed location and to improve repair efficiencies of units operating in the same AOR. Units shall tailor UTCs appropriately to account for utilization of CIRFs.

15.5.3.1.1. All MAJCOMs must address the use of CIRFs in their feasibility plans to support AEF operations.

15.5.3.2. Deploying units that rely on CIRF support must contact the appropriate CIRF to coordinate support feasibility prior to deployment.

15.5.3.2.1. After validating support by a CIRF activity, deploying units must segregate deploying RSP to remove items that support a “remove, repair, & replace” capability at the deployed location. The removed items may be required, if the mission dictates, to be deployed to the CIRF location.

15.5.3.3. Prior to deployment sourcing, tasked CIRFs shall:

15.5.3.3.1. Determine maximum surge production capability (without and with augmentation) and forward that information through the MAJCOM CIRF manager to the lead wing. The augmentation portion needs to have established trigger points to determine when augmentation will be required (“X” number of aircraft requires “X” amount of augmentation).

15.5.3.4. Identify additional requirements needed to support CIRF maintenance operations for assigned and gained units and forward that information through the MAJCOM CIRF manager to the lead wing.

15.5.3.5. All available options to resolve RSP shortages should be taken prior to on-call status. Depot support must be coordinated through the respective MAJCOM crisis action teams and functional managers as needed.

15.5.4. MAJCOM headquarters shall:

15.5.4.1. Maintain appropriate AEF time phased force deployment document (TPFDD) libraries.

15.5.4.2. Ensure AEF UTCs are appropriately postured.

15.5.4.3. Generate a "prepare to deploy order" (PTDO) when required.

15.5.5. Deploy en route support force.

15.5.5.1. The lead wing is responsible to assess the need to deploy an en route support force based on length of flight legs of deploying aircraft; expected delays of aircraft, personnel, or equipment entering the AOR; or requirements for en route support for mission sorties.

15.5.5.2. Commanders must ensure appropriate level of supervision, expertise of technicians, and necessary equipment and facilities are available at the en route location to provide adequate en route support.

15.5.6. Deploy employment elements.

15.5.6.1. MAJCOMs shall develop and deploy modular, scalable UTCs to support typical basic fighting elements (BFE) for combat aircraft. Tailor UTCs as required for non-standard BFEs.

15.5.6.2. Normally deployed airlift and tanker elements will be centrally managed by the TACC to ensure units receive reachback support IAW priorities in the AOR.

15.5.6.3. If the Joint Forces Air Component Commander (JFACC) requests additional aircraft at the deployed location, units should be prepared to utilize modular/scalable UTCs for follow-on deployment. For example, if a unit has 24 aircraft and deploys 12, the unit shouldhave two remaining 6-ship UTCs already built which represent the remainder of the aircraft, personnel, and equipment available within that unit. Using this method, one or both of the 6-ship UTCs may be tailored quickly and deployed. The same applies to Intermediate Level Maintenance (ILM) support for CIRFs. UTCs should be developed that allow partial deployment of ILM capabilities to augment CIRF operations at a FSL, or the full capability to establish ILM at the FOL.

15.5.6.4. Deploying units must bring minimum TMDE to support essential maintenance actions anticipated under the concept of this plan and utilize procedures in TO 00-20-14 for CIRF support. Units must make every effort to ensure all deployed TMDE will not require calibration during the scheduled deployment period.

15.5.6.5. Deploying units must ensure personnel deploy with proper skill level training, particularly focusing on specialized tasks (e.g., welding of engine flame-holders, fan blade NDIs, hydrazine response team, etc.). Additionally, units will deploy the capability for traditional non-direct sortie production functions of maintenance, to include, but not limited to QA, PS&D, Analysis, etc..

15.5.6.6. Aircraft should not normally deploy with Phase or Isochronal Inspections or engine time changes due immediately upon AOR arrival. To the greatest extent possible, units shall forward Phase/ISO plans to owning Air Force Forces (AFFOR) staff within 2 weeks of arrival in AOR. Additionally, units must not deploy ECM pods to the AOR due periodic maintenance inspection

(PMI) during their scheduled deployment. If units cannot avoid deploying pods due PMI, they must coordinate this additional PMI requirement with the CIRF-supporting command.

15.5.7. Establish initial operational cadre in the AOR.

15.5.7.1. Lead wing shall deploy ADVON as required and arrive prior to aircraft arrival.

15.5.7.2. Deploying units shall deploy CIRF augmentation personnel, equipment, spares and CHPMSK/RSP as required to the CIRF facility.

15.5.8. Establish initial reachback connectivity.

15.5.8.1. MAJCOM/AFFOR must coordinate reachback requirements for units assigned to their AOR. Reachback requirements may include, but not limited to the following: procedures for arranging transportation or movement of people, equipment, or supplies; use of CIRFs; and standard information management systems to be used by deployed units.

15.5.8.2. Units must contact their MAJCOM and/or AFFOR Command and Control (C2) cell to request maintenance assistance en route to and from the deployed location to coordinate repair actions.

15.5.8.3. Supply support shall be processed through the supporting RSS. Units requiring supply support from Outside Continental United States (OCONUS) and non-USAF base locations must contact the RSS supporting the AOR.

15.5.8.4. MAJCOM policy shall specify the method to determine closure of a request (write procedures to instruct units and resource coordinators regarding how a request will be worked, completed, and what follow-up actions are required).

15.5.8.5. CIRF support shall be coordinated with the MAJCOM/AFFOR who, in-turn, shall coordinate support from the CIRF-supporting command.

15.5.8.6. Units must establish a MOC as soon as possible upon arrival at the deployed location to serve as a single point of information for maintenance operations and higher headquarters reporting. The MOC needs to contact the combatant command/A4 maintenance staff with contact information (i.e., phone numbers, e-mail and SIPR net).

15.5.9. Receive forces.

15.5.9.1. Whenever possible, the lead wing shall send an ADVON team to validate site survey information, revise beddown plans (as required), ensure operating/living sites and facilities are prepared for use/habitation; identify deficiencies and coordinate with combatant commander to fill unmet mission needs (e.g., aircraft parking, security, hangars, taxiway, marshalling areas, equipment storage areas, maintenance back shops and munitions support functions) prior to main aircraft arrival.

15.5.9.2. Commanders must ensure their personnel have adequate facilities, equipment, workspace, vehicles, living quarters, food/water, and supplies to conduct the mission as soon as they arrive at the deployed location.

15.5.10. Recover the force and prepare for combat/operational capability.

15.5.10.1. Operations Officer/MX SUPT must effectively plan and manage scheduled maintenance priorities and personnel shifts to meet sortie production requirements.

15.5.10.1.1. Operations Officer/MX SUPT must prioritize maintenance actions, to balance sortie production requirements with fleet health considerations and must communicate and coordinate with operations counterparts as required.

15.5.10.1.2. Surges in sortie production may be necessary to support wartime/contingency operations; however, Operations Officer/MX SUPT must communicate the impact of long-term surge operations have on personnel, fleet health, and overall sortie production capability.

15.5.11. Secure the operating location.

15.5.11.1. Operations Officer/MX SUPT must ensure all sensitive and classified equipment is properly secured and protected in accordance with applicable directives. In addition, deployed units must implement procedures to reduce the possibility of theft or damage of unit equipment or supplies.

15.5.11.2. Operations Officer/MX SUPT must coordinate with airfield managers and security forces to ensure aircraft with sensitive or classified components or cargo are adequately protected while parked or maintained.

15.5.12. Begin reachback operations.

15.5.12.1. When parts are required for mission essential equipment, maintenance technicians must utilize deployed supply procedures. If not responsive, Operations Officer/MX SUPT must contact the appropriate functional manager in the MAJCOM/AFFOR for assistance.

15.5.12.1.1. If expedited delivery and supply priority warrant, MAJCOM/AFFOR shall source in-theater (lateral) units to support deployed units with parts. Otherwise, deployed units must utilize normal supply ordering procedures for MICAP and lower priority parts.

15.5.12.2. When ILM CIRF support is required or CIRF issues exist, Operations Officer/MX SUPT shall contact the appropriate functional manager in the MAJCOM/AFFOR for assistance.

15.5.12.3. For CIRF operations to be successful and meet deployed unit expected customer wait times, units must prepare unserviceable assets for shipment as soon as possible (no longer than one day) after CIRF repair is deemed to be warranted.

15.6. Employing the Force. Providing immediate launch and/or strike capability, providing right-sized essential support, and ensuring regeneration.

15.6.1. Structure the deployed combat support contingent to accomplish necessary operations (reference *AFDD* 2, Organization and Employment of Aerospace Power.

15.6.1.1. If deploying into an established Air Expeditionary Group, every attempt will be made to ensure that maintenance personnel work for a maintainer. Flightline and backshop maintenance may be separated to fulfill the mission at the discretion of the senior maintainer at the location. Units deploying to locations with established infrastructures (i.e., U.S. installations or presence at OCONUS locations) shall, with host wing and lead wing coordination, organize in the CWO. Maintenance squadrons shall deploy into existing MXG. AMUs shall deploy into the established AMXS structure. Back shop personnel shall deploy into the established MXS structure or augment CIRF locations as appropriate. Munitions Squadrons (MUNS) and flights shall integrate into existing munitions structure. Additionally, MOC, PS&D, QA and Analysis personnel shall deploy

into the existing MOS structure. AMU personnel shall remain tied to the same operations squadron they support in garrison. All deployed maintenance organizations shall coordinate maintenance actions through the host wing as well as attend appropriate maintenance meetings scheduled by the host wing.

15.6.1.2. Deployments to bare-base locations. Units deploying to bare-base locations where there is not an established wing structure, shall organize with all maintenance personnel working directly for the senior detachment commander, usually the operations squadron commander. The deployed wing leadership shall provide the command structure/key leadership personnel at the deployed location. All accompanying/supporting units shall subordinate to the lead wing by folding its personnel into the command structure of the lead unit. (Numbers of supervisors may be reduced through consolidation.)

15.6.1.2.1. The AF commander at the deployed location may separate flightline and back shop and munitions maintenance technicians into separate squadrons or flights under the supervision of officers or SNCOs.

15.6.1.3. An EMXG shall be established IAW the CWO when an Air Expeditionary Wing (AEW) is established.

15.6.1.4. Serious consideration must be given to establishing an expeditionary maintenance group, if one of the following criteria exists:

15.6.1.4.1. A steady-state deployment exists or is envisioned and the size and scope of the operation warrants a group structure.

15.6.1.4.2. The total number of AF maintenance personnel exceeds 500, the threshold for a group manpower guidelines established in AFI 38-101.

15.6.1.4.3. Multiple MDS aircraft or multiple squadrons are deployed at the same location.

15.6.1.4.4. The deployed location supports a joint or combined air operation.

15.6.1.4.5. If the major MXS (EMS, CMS) functions are being performed at the deployed location.

15.6.1.5. If size does not warrant multiple squadrons within an established maintenance group, maintenance personnel shall be organized into specialized flights or sections and report directly to the MXG/CC.

15.6.1.6. Tailor Operations Officer/MX SUPT to deployed requirements. If a maintenance group leadership is in place, task the lead unit to provide the Operations Officer/MX SUPT package.

15.6.2. Generate the force to combat/operational capability.

15.6.2.1. Maintenance personnel and support equipment to recover and regenerate aircraft should be in place prior to aircraft arriving.

15.6.2.2. WRM Fuel Tank build-up shall deploy if required/tasked by the combatant command.

15.6.2.3. Organizational aircraft engine maintenance shall be performed to the maximum extent possible. Once the unit determines an engine requires maintenance beyond their capability, the engine will be shipped to a pre-determined CIRF or to home station. Units shall deploy with the minimum number of spare engines to support the steady-state operations when a centralized pool is established and with full WRE spare levels for operations above steady-state.

15.6.2.4. ILM of LRUs shall be primarily confined to CND screening (if test stations are deployed). Otherwise, deployed maintenance shall be performed under the "remove & replace" concept, utilizing the RSP and CIRF operations to maximum extent possible.

15.6.3. Accomplish force support for continuing operations.

15.6.3.1. During high tempo operations with increased personnel tempo, commanders and supervisors must be aware that performance degradation can occur with increased mission demands under wartime conditions. Commanders must monitor increases in maintenance demands to ensure personnel safety is not jeopardized and that the mission is not adversely affected.

15.6.3.2. Operations Officer/MX SUPT must update operations officers and commanders regarding aircraft and personnel status as required.

15.6.3.3. Operations Officer/MX SUPT must establish requirements for battle damage assessment teams, crash damage recovery teams, and end-of-runway teams. AFMC CLSS Depot Maintenance/ABDR teams need to be deployed within the AOR early in the operation to provide timely support.

15.6.4. Employ reachback operations.

15.6.4.1. Maintenance and/or supply technicians shall order replenishment spares and consumables IAW standard supply ordering procedures and priorities.

15.6.4.1.1. Deployed units must use reachback procedures to obtain products, services, and applications or forces, equipment or materiel from AF organizations that are not forward deployed (AFDD 2, AFDD 1-2). This capability allows commanders to obtain or coordinate support from units not physically located with the forward force. By leveraging advances in communications technology, reachback capabilities make it possible to utilize CIRFs and/or rear-based assets and organizations to perform various functions in support of AEF operations.

15.6.4.1.2. Units must contact their MAJCOM and/or AFFOR to request maintenance assistance en route to and from the deployed location to coordinate repair actions. If requested, units must provide consumption/expenditure information, supply prioritization, projected sortie rates, and fleet mission capable status.

15.6.4.1.3. If RSPs are to be left for a follow-on unit, the departing unit must continue to order all replenishment parts, making every effort to completely fill it for the follow-on unit. Departing and incoming units must also conduct a joint inventory of the RSPs.

15.6.4.1.4. For replacement of in-place or pre-positioned equipment, deployed units must notify the MAJCOM/AFFOR who will in turn notify the FAM. The theater FAM shall validate the requirement and, if possible, source the asset from within theater.

15.6.4.1.5. The organization supplying the equipment shall forward information required for the parent MAJCOM/AFFOR to build the level-4 detail TPFDD in Global Command and Control System (GCCS)/JOPES.

15.7. Sustaining the Force. Maintaining effective levels of support for operations worldwide beginning day one of employment operations.

15.7.1. Transition the initial force to mature, steady-state operation.

15.7.1.1. The plan to utilize follow-on maintenance UTCs for sustainment (greater than 30 days) must consider support requirements of the aircraft maintenance complex at the deployed location, not separate AEF unit requirements. Use of CIRFs should be considered first, and planning to employ ILM to the FOL should be avoided whenever possible. Any shortfalls and/or LIMFACs that prevent using CIRFs should be identified to the appropriate combatant command and CIRF-supporting command.

15.7.2. Optimize communication and resource flows.

15.7.2.1. The lead unit shall consolidate maintenance operations (personnel, facilities, and equipment) when two or more AMUs are collocated at the deployed location. This action shall be taken to maximize operational and communications efficiency and to minimize the logistics footprint and redundancy of operations.

15.7.2.2. To the greatest extent possible, collocate other maintenance related operations at the deployed location. Centralized management of scarce resources is directed; however, optimal staging locations may be driven by security considerations.

15.7.3. Maintain operational security.

15.7.3.1. Commanders and Maintenance Operations (Operations Officer/MX SUPT) must communicate maintenance security priorities not only to security forces personnel, but also to flightline and shop personnel. Ensure all personnel are verbally briefed what the duress word is and how to use it.

15.7.3.1.1. Personnel must declare a Helping Hand if an unauthorized person is discovered in a restricted area and notify the MOC and/or the security forces.

15.7.3.1.2. Flightline and shop technicians must follow and enforce security procedures, including exercising constant vigilance in the work place, performing end-of-day security checks, and when possible, vary routes and times to and from work.

15.8. Recovering the Force. Redeployment and reconstitution, ensuring that the instrument of Air and Space Power is a tool that can effectively be applied repeatedly.

15.8.1. The objective of recovery/redeployment is to ensure a coordinated withdrawal of forces while maintaining Theater integrity. Redeployment is the phase of a mission that involves the transferring a unit, individual(s), and/or supplies deployed in one area to another area for the purpose of further employment. Redeployment includes forward deployment to another FOL, as well as return to home station. Recovery is the phase of a redeployment mission, which returns aircraft and support resources to home base. Contingency plans should be developed in advance for redeployment and/or recovery.

15.8.2. Reduce number of people and amount of equipment/supply to support redeployment.

15.8.2.1. Deployed units must identify preliminary redeployment team members. Unit moves are normally classified and redeployment information should be controlled and provided on a strictly need-to-know basis.

15.8.2.2. A redeployment assistance team (RAT) may be requested by the deployed unit. They are the overall coordinators for accomplishing actions at the deployed site (e.g., redeploying troops, equipment, and supplies back to home station or a forward location). Suggested team composition

is as follows: maintenance support, transportation (both air and ground), vehicle management operations, logistics plans, supply, services, personnel, and civil engineering representatives.

15.8.2.3. In the event a RAT team is activated, the deployed maintenance commander must identify the equipment custodians for appropriate items to assist the RAT. The RAT is not responsible to prepare, pack, and palletize equipment loads.

15.8.2.4. Utilize packing/load lists/manifests or CA/CRLs to track assets when forward deployed. Equipment custodians must also track the assets' redeployment status (i.e., destroyed, captured, excessive restoration costs, and reorder information).

15.8.2.5. Units must maintain these documents at the deployed location and must account for equipment, including cargo manifests, load plans, hazardous cargo documentation, etc. Knowing where assets are located, whether they are re-deployable, and where the deployment documentation is, will reduce labor-intensive efforts when the redeployment order is received.

15.8.2.6. Maintain accurate inventories to ensure you know what equipment remains or needs to be returned to other units. This knowledge aids build-up teams when repackaging. Unit should use the deployment documents to aid in estimating actual weights when creating the return load plans and manifests. All unit equipment (CTKs, TMDE, bench stock, RSP, support equipment, and technical data) must be inventoried and prepared for shipment. The lead wing must ensure any changes to airlift requirements have been identified and provided to the logistics-planning cell.

15.8.2.7. The accountable officer at the deployed location has overall responsibility for the inventory and accountability of supply assets. He/she shall work with deployed property custodians to ensure reconciliation of all system transactions before redeployment, and ship property, properly configured with inventory lists attached to designated reconstitution sites, WRM pre-position sites, or home station. The MASO at the deployed location has overall responsibility for the inventory and accountability of munitions assets within their possession and control. The MASO must reconcile all CAS transactions prior to redeployment and coordinate shipment of all munitions through the Regional/Theater Ammunition Control Point (R/TACP). At locations where munitions stockpile management is performed by contractor activities, the government MASO is responsible to ensure proper munitions accountability and disposition. The MASO is also the QAE.

15.8.2.8. Units utilizing CIRFs for ILM support shall coordinate repair and return/replacement actions with the combatant command A4 cell and the CIRF location to ensure assets are not left behind. Unserviceable assets that cannot be transported to the CIRF in time to make turnaround repair times should be held at the deployed location to redeploy with the unit or shipped to home station. When necessary, case-by-case situations can be coordinated with the CIRF-supporting command to have repaired engines shipped from the CIRF to the unit's home station.

15.8.3. Protect dynamic reduction in force structure. Commanders shall stage personnel and equipment out of the theater while ensuring complete tasks coverage for all aircraft until the last aircraft is redeployed.

15.8.4. Deploy en route support forces as required. As part of the redeployment plan, Operations Officer/MX SUPT must coordinate with operations schedulers to deploy en route support forces, as required.

15.8.5. Launch redeployment forces. Operations Officer/MX SUPT shall manage the redeployment of aircraft maintenance technicians along with the redeployment of the aircraft. Sufficient personnel and equipment must remain to close accounts and ship equipment/supplies as necessary.

15.8.6. Redeploy remaining Agile Combat Support resources. Maintenance commanders must ensure personnel are properly trained to prepare equipment for shipment by air, ground, or rail. Personnel must know how to properly fill out the hazardous declaration and shipment forms, build cargo pallets, and who to contact to coordinate shipment method.

15.8.7. Recover forces. Commanders must ensure sortie production requirements are balanced against the fleet health priorities (such as scheduled maintenance inspections and time changes). Additionally, training requirements of both aircrew and maintenance personnel must be balanced to achieve training objectives.

15.8.8. Reconstitute the force.

15.8.8.1. Once the unit returns to home station or is redeployed to another location, actions must be taken to re-attain operational readiness as soon as practical.

15.8.8.2. Commanders must ensure that personnel training and aircraft maintenance requirements are given priority management attention to ensure the unit returns to operational capability quickly.

15.8.8.3. Depleted bench and operating stocks must be replenished. All unit equipment (CTKs, TMDE, bench stock, RSP, support equipment, and technical data) must be inventoried, inspected, tested, or serviced as necessary.

15.8.8.4. Units must ensure that all paperwork associated with replacement of assets due to CIRF replenishment is correct and complete.

15.9. Centralized Intermediate Repair Facilities (CIRF). Refer to **Chapter 16** of this instruction.

15.10. Governing directives.

15.10.1. The AOR A4 staff shall develop guidance in coordination with MAJCOMs for maintenance operations at deployed locations. The following at a minimum will be addressed:

15.10.1.1. Flightline operations.

15.10.1.2. Back shop operations.

15.10.1.3. Special programs as applicable.

15.10.2. Address guidance for working with Joint Services.

Chapter 16

CENTRALIZED INTERMEDIATE REPAIR FACILITIES (CIRFS)

16.1. Introduction. CIRFs regionalize intermediate-level maintenance (ILM) for commodities such as aircraft engines, electronic warfare pods, avionics line replaceable units, wheel and tire assemblies, and other aircraft components. Management and control procedures will vary depending on the specific logistics characteristics of the asset/commodity being repaired as well as the type of aircraft and geographic region supported. The benefits of overseas CIRFs should include: reduced airlift; reduced FOL force protection and base support requirements; and pooling of assets to optimally balance logistics resources against requirements. The benefits of CONUS CIRFs include: train like we fight; production smoothing and workload-leveling; efficiency through economies of scale; improved reliability-centered maintenance; and enhanced opportunities for on-the-job training. CIRFs also provide opportunity for Smart Ops 21improvements to large-scale workcenters.

16.2. Organization. CIRFs are normally established within existing maintenance organizations (EMS, CMS, MXS) to minimize requirements for overhead and support.

16.3. Command Authority. Command relationships will be specified in governing operating instructions. CIRF production control is provided by a CIRF Command and Control (C2) Cell within the Supporting Command (CAF or MAF) Logistics Support Center (LSC). This cell will:

16.3.1. Monitor CIRF production.

16.3.2. Manage and prioritize CIRF activities based on established weapon system support goals (e.g., spare levels) for CIRF-supported units.

16.3.3. Allocate serviceable assets to supported units.

16.3.4. Coordinate and track retrograde and sustainment assets between supported units and the CIRF, to include reparables, repair parts, cannibalized parts, TCIs, TCTO kits, etc.

16.4. CIRF. Common Operating Picture (COP). Logistics and maintenance managers need accurate and timely information to make command and control decisions over CIRF activities. To provide this information, a CIRF COP must be established to integrate numerous legacy data systems with CIRF decision support tools. Machine-to-machine interface should be maximized to reduce duplicate manual data entry and the opportunity for induced errors. The AF Portal, rather than direct office-to-office e-mail will be used to communicate COP information to all CIRF stakeholders.

16.5. Rotable Pools. Customer wait time (CWT) and transportation constraints may drive the establishment of a centralized rotable pool (CRP) for Stock Class VII end items such as engines and pods. Use of a CRP reduces CWT by maximizing timely placement of serviceable assets where they are needed most, in lieu of waiting for the same item to be received, repaired, and shipped back to the originating supported unit. CRP rules will be defined in the CIRF governing operating instruction and mutually agreed upon by the supported and supporting commands. Rotable pool size, compared to support unit spare levels, will be determined during deliberate planning. CRPs may be generated from spare assets shipped from supported units or may be built up at the CIRF from unserviceable assets, modules, SRUs, etc. CIRF CRP “holdings” will be no greater than the difference between network-wide serviceables and network-wide

requirements. The intent is to keep the supported unit spare levels near 100 percent so that the backfill of an O-level requirement is satisfied from local assets to the maximum extent possible.

16.6. Retained Tasks. Units supported by CIRFs may retain a limited capability to perform ILM. These retained tasks and the resources required to perform them (personnel, equipment, etc.) will be specified in the CIRF governing operating instruction. For constrained assets, retained tasks may include those performed within the expected turnaround time of the CIRF pipeline and repair times. Retained task resources also provide capability for cannot-duplicate screening and provide a local "first line of defense" to handle immediate or urgent-action TCTOs otherwise requiring a dispatched CIRF team or the return of all affected assets to the CIRF.

16.6.1. Cannibalization Assets. When commodity LRU local retail stocks fall below mission requirements, retention of CIRF-repaired end-items as "CANN assets" at the supported unit may be necessary. However, this should be the exception, and must be approved by the supported command Functional Manager. Timely reparable return to the CIRF is essential to sustaining a healthy network-wide asset posture.

16.7. Documentation. The CIRF and supported units will maintain all required status, inventory, and historical record documentation on CIRF-repaired assets, including manual methods, IMDS-CDB, G081, CEMS, RAMPOD, etc.

16.8. Metrics. CIRFs will report performance against various customer and production metrics specified in the CIRF governing operating instruction. These may include customer wait time; spare status; MICAP incidents/hours; average time on wing; production versus requirement; throughput; supply status; flow time; test station/test cell status, pipeline segment times, and others as required.

16.9. Liaison with LRS. CIRF operations rely on a robust relationship between maintenance, supply, and transportation. CIRF pipeline velocity must be sustained at a level supporting unit requirements. The host maintenance organization (EMS, CMS, MXS) and LRS will jointly establish written procedures to ensure the rapid movement of retrograde and sustainment assets between the CIRF and supported units. These shall include providing the LRS with a regular forecast schedule of assets projected for movement.

16.10. Repair Funding. Until repair funding is centralized under a single AF agent, units's repair dollars are recouped at the CIRF via the funding document (AF IMT 616, Fund Cite Authorization (FCA)). The supporting LSC and LRS will coordinate establishment of AF IMT 616 accounts to charge and credit supported unit funds accordingly. In order to be charged and credited properly, identical accounts will need to be established at the deployed or supported location and at the host CIRF. Units should provide funding documents to both locations 30 days prior to using CIRF activities.

16.11. ACS Planning. Deployed CIRFs are highly scenario-dependent. Considerations include: allocated deployment airlift; number of aircraft deploying; number of forward operating locations; available CIRF throughput and surge capacity; spare levels; transportation modes and nodes; and force protection and other FOL factors. The availability of intra- and inter-theater transportation will play a major role in determining the feasibility of arranging CIRF support.

16.11.1. CIRFs do not replace deployable intermediate-level maintenance, but work in concert with it. Depending on the scenario, a unit may be tasked to deploy all, some, or none of its ILM capability to the FOL or to the CIRF at a forward support location (FSL) or CONUS support location (CSL).

16.11.2. CIRFs may be established to repair virtually any commodity. This may include minor or major maintenance. Definitions of CIRF support and retained tasks may vary from CONUS arrangements. All options should be considered to arrive at the best support concept for the supported commander.

16.11.3. Modular, Scalable Organization. Lead commands will establish modular, scalable UTCs for CIRF commodities to provide a tailored response for various deployment trigger points. UTC capabilities will range from CIRF augmentation to establishing a new CIRF at bare base locations. These support levels will be documented in the CIRF governing operating instruction. When CIRFs are established by consolidating intermediate-level maintenance from several supported units, those units' UTC requirements will transfer (devolve) to the CIRF maintenance organization (EMS, CMS, MXS). Supported unit (flying unit) DOC statements and UTC MISCAP statements may need to be revised to accurately reflect mobility-tasked direct support units and their capabilities.

16.11.4. AEF Planning and Execution. The lead wing MXG/CC will determine maintenance ACS requirements, to include CIRFs. Except for extenuating circumstances, CIRFs should be utilized to the maximum practical extent. Deploying ILM to the FOL should be avoided when possible. To minimize airlift requirements, the lead wing MXG/CC should ensure deploying units tailor their UTCs with respect to supporting CIRF capabilities and prepositioned assets.

16.11.4.1. CIRF support requirements identified prior to unit deployment should be forwarded to the MAJCOM and CIRF-supporting command and discussed at the AEF Planning Conference. Requirements identified after unit deployment should be forwarded through the Commander Air Force Forces (COMAFFOR)/A4 staff to the supporting command.

16.11.4.2. The CIRF supporting command will determine the best location for the CIRF, appropriate spare levels, equipment, personnel, and CONOPS for each type of asset. These requirements and CONOPS should be reviewed and coordinated with supported commands every AEF cycle or as requirements dictate to ensure the best utilization of AF/DoD resources.

16.11.4.3. The supporting LSC will establish a CIRF C2 Cell consisting of maintenance, transportation, and supply functional experts to perform C2 functions in a supported/supporting relationship over applicable CIRFs. The AF Portal should be used to report, track, monitor, and measure CIRF commodities and operations.

16.11.4.4. The supported COMAFFOR/A4 staff may designate a Liaison Element to coordinate with the CIRF supporting command and applicable LSC to determine the most expedient means to satisfy supported unit requirements. The supported COMAFFOR/A4 has final authority on asset distribution to units under its OPCON. Where two or more COMAFFORs compete for CIRF-repaired assets, the A4 staffs and supporting command will reach agreement on distribution of serviceable assets to balance competing operational requirements.

16.11.4.5. Gaining CIRF Requirements. Gaining CIRFs will analyze their maintenance capability against supported unit expected sortie and utilization rates to determine maximum surge production capability, with and without augmentation. Augmentation requirements for various trigger points (e.g., PAA deployed), along with any projected personnel and equipment shortfalls or LIMFACs should be reported to the supported (owning) MAJCOM FAM. The FAM will review and

forward requirements to the lead wing and AEF Center for tasking/resolution at the Planning Conference. If during execution CIRF performance or other factors (e.g., lack of sufficient timely intra- or inter-theater airlift) prevent fulfillment of combatant command support requirements, the supported and supporting commands will explore other options to support the FOL.

16.11.4.5.1. Gaining CIRFs will review their CHPMSK levels to determine if they are adequate to support deploying units and will request appropriate adjustments, as necessary. The supporting command LSC will assist with kit management and replenishment.

16.11.4.5.2. Gaining CIRFs will closely monitor distribution of serviceable assets among CRPs. Spare assets should be pushed to the FOLs so the CIRF is continually backfilling the FOL spare lines, not holes in aircraft.

16.11.4.5.3. Gaining CIRFs will compile data necessary to support CIRF metrics and take appropriate action when indicators fall below standard or command goals.

16.11.4.6. Deploying Unit Requirements. Deploying units will submit appropriate AF IMT 616s to the CIRF-supporting command no later than 30 days prior to deployment, or as soon as practical for short-notice taskings. AF IMT 616s will authorize funding for supplies, repair parts, and fuel required to repair and operationally check repair assets. For engines, two AF IMT 616s may be required; one for parts and one for fuel.

16.11.4.6.1. Deploying units will segregate RSP items supporting a "remove, repair, and replace" capability. Depending on the supporting CIRF asset posture, these items may need to be deployed to the CIRF in addition to any tasked CIRF-augmenting personnel or equipment.

16.11.4.6.2. Deploying units will deploy with the minimum number of spare engines to support steady state operations when a CRP is established and with full War Reserve Engine (WRE) spare levels for operations above steady state. ***NOTE:*** Lead commands will periodically assess CIRF effects on WRE requirements via the Propulsion Requirements System (PRS) to make adjustments for deployed spare level requirements agreed upon at AEF planning conferences.

16.11.4.6.3. Deploying units operating CIRF-repaired pods will tailor spare asset packages to match the expected CIRF level of support.

16.11.4.6.4. Except for approved retained tasks, deploying units will operate under the "remove and replace" concept, maximizing use of the RSP and CIRF support. For CIRF operations to be successful and meet deployed unit expected customer wait times, units must prepare unserviceable assets for shipment as soon as repair at the CIRF is deemed warranted. Retention of "CANN assets" at supported units must be approved by the COMAFFOR/A4 staff.

16.11.4.6.5. Shipping Containers. CIRF support relationships require assets to be shipped between deployed locations and the CIRF FSL or CSL. Deploying units will deploy with sufficient reusable containers to transport assets to and from the CIRF.

16.11.4.6.6. Redeploying supported units will coordinate closely with the COMAFFOR/A4 staff to ensure assets are not left behind. Unserviceable assets unable to be transported to the CIRF in time to be received back for the redeployment should be held at the FOL. For asset shortages reflecting CIRF due-outs, redeploying units should coordinate shipment of serviceable assets from the CIRF to the unit's home station or as directed by the MAJCOM.

16.12. (Added-ANG) ANG CONUS Centralized Intermediate Repair Facilities (CIRFs). An ANG CONUS CIRF may be implemented for any active duty or Air Reserve Component intermediate repair asset within the United States and territories if approved by Air National Guard Director of Logistics (NGB/A4). A CONUS CIRF is different from an Air Logistics Center operating location that supports depot throughput or OCONUS CIRF that supports wartime or contingency units overseas.

16.12.1. **(Added-ANG)** The purpose of ANG CONUS CIRF operations is to maintain or improve readiness. NGB/A4 shall approve ANG CONUS CIRF operations and where these operations will occur. CONUS CIRF is optimum for systems that have constrained equipment, experienced personnel, or repair part availability. CONUS CIRFs should be deployable to meet wartime and contingency needs. Improved asset management, such as Engine Reliability Centered Maintenance, and reduced equipment needs are primary benefits to CONUS CIRF.

16.12.2. **(Added-ANG)** The maintenance concept for each item must be IAW ANG guidance. The supported wing may retain some repair capability to optimize the benefits of CIRF. These wing retained tasks shall be approved and defined by NGB/A4M.

16.12.3. **(Added-ANG)** The supply concept should mirror normal supply concepts and procedures. Pipeline spare and repair parts requirements must be evaluated and adjusted before CONUS CIRF operations are authorized. CIRF operations shall not commence until these initial spares are available.

16.12.4. **(Added-ANG)** The transportation concept should mirror normal transportation concepts and procedures. As a rule, transportation costs shall be paid by the shipping agency. Units shall fund shipments to the CIRF as part of their normal Second Destination Transportation funding line and the ANG CIRF operating locations shall request funding from ANG Transportation Division (NGB/A4RT) for shipments to ANG units. Transportation costs for customers outside the ANG must be in accordance with the support agreement and approved by NGB/A4RT and ANG Logistics Resources Division (NGB/A4PE).

16.12.5. **(Added-ANG)** All appropriate costs for repair shall be charged to the customer that sends the part to the CIRF. Utility costs shall be charged as agreed upon in the support agreement and approved by ANG Director of Civil Engineering (NGB/A7). Credit generating assets such as avionics items and wheel/tire build-up require special attention. These credits shall be documented and distributed to the customer.

16.12.6. **(Added-ANG)** Items repaired by the CIRF can be sent to any unit to fill a MICAP or other shortage. Items that have different modifications between Commands require special consideration.

16.12.7. **(Added-ANG)** Facility square footage authorizations should be adjusted for CIRF locations. Units should identify this additional or reduced requirement to NGB/A7.

16.12.8. **(Added-ANG)** Personnel requirements must be approved by NGB/A4PE and ANG Manpower and Organization Directorate (NGB/A4P). When supporting a unit outside the ANG, these requirements should be funded by the customer. NGB/A4PE shall approve redistribution of full and part time personnel authorizations within the ANG.

16.12.9. **(Added-ANG)** TCTO procedures shall be defined in the agreement between all organizations.

16.12.10. **(Added-ANG)** Operating procedures, support agreements and other written guidance shall be coordinated with all units involved and approved by NGB/A4. As a minimum, financial, personnel,

TCTO, equipment, transportation, supply, facility, asset distribution, bench stock, and management processes and procedures shall be documented and approved.

Chapter 17

LOGISTICS PROGRAM MANAGEMENT FOR PERFORMANCE-BASED ACTIVITIES

17.1. Introduction. The objective of logistics program management is to integrate the performance-based operation into the supported AF mission, monitor the life-cycle management of government property, and execute the business end of the AF programs. This chapter establishes guidelines for performance management and surveillance of performance-based activities performing aircraft maintenance (organizational and intermediate), to include on-equipment maintenance/repair and off-equipment maintenance/repair functions.

17.2. Pre-Contract Award and Pre-Planning for Management Plan Requirements. The requirements of this paragraph are applicable solely to the functional commander/functional director (FC/FD). These requirements shall be considered for incorporation into all solicitations, initial and follow-on (e.g., recompetitions), and MEO/HPO management plans containing maintenance functions. The guidance in this paragraph is authoritative, but not directive except where noted as mandatory because of Public Law, executive orders, DOD directives, or AFIs. Existing contracts need not change until recompetition of the function.

17.2.1. Contract / MEO / HPO Documentation.

17.2.1.1. Contract Format. The procuring contracting officer (PCO) is the OPR for contract preparation. The Uniform Contract format has 13 sections, alphabetized from A to M. The maintainer's primary concern will be with Section C, *Description/Specification/Statement of Work*, because this section details the service (outputs) the offeror is required to perform and the go/no-go checklist (services summary (SS)) for accepting the service (outputs). The FC/FD is the OPR for Section C and the SS.

17.2.1.2. MEO Format. See AFI 38-203.

17.2.1.3. HPO Format. Use same format as the MEO management plan, see AFI 38-203.

17.2.2. Solicitation, MEO, and HPO Provisions.

17.2.2.1. Applicability of AFIs and TOs. The Section C requirements document and HPO management plan shall include AFI and TO requirements. TOs are mandatory and will be cited in their entirety. Cite mandatory AFI paragraph(s) or cut and paste text from the AFI into the Section C requirements document and HPO management plan. Contact MAJCOM/A4 staff and HQ USAF/A4MM, in turn, for assistance when there is disagreement over applicability and use of TOs or 21-Series AFIs.

17.2.2.2. Government Property (FAR Part 45).

17.2.2.2.1. Facilities. When performance-based activity (contractor, MEO, and HPO) performance is required on base, then facilities are government owned and contractor operated (GOCO). When performance is required off base, then facilities are contractor owned and contractor operated (COCO).

17.2.2.2.2. Equipment. The Section C requirements document and HPO management plan shall include a requirement to use AFEMS and IMPS for reportable property. Offerors and HPO shall propose the best commercial practices for managing non-EAID reportable property.

17.2.2.3. Use of Government Sources of Supply (FAR Part 51). The Section C requirements document and HPO management plan shall include a requirement to use government sources of supply (SBSS, GPC, CAS, etc.) on a fill or kill basis. Best commercial practices are approved and authorized when government sources of supply cannot satisfy the requirement in a timely manner. Offerors shall use government sources of supply to obtain ammunition IAW AFI 21-201.

17.2.2.4. Support Agreements. The Section C technical exhibits and HPO management plan shall include workload requirements supported via support agreement (see AFI 25-201).

17.2.2.5. Organization. Contractors and MEOs are exempt IAW AFI 38-203 from organizing their operations as defined in AFI 38-101; however, the Section C requirements document shall include a requirement mandating use of the AF standardized mailing address format (e.g., 412 CMS/MXMD) to facilitate uniform communication between organic and non-organic activities. HPOs opting not to comply with AFI 38-101 shall submit a waiver request through their MXG/CC, WG/CC, and MAJCOM/A1M/to HQ USAF/A1M.

17.2.2.6. Contingency Planning. The FC/FD shall ensure that the Section C requirements document includes the following:

17.2.2.6.1. Continuation of Essential Services/Strike Plan. Offerors shall develop and maintain contingency plans for tasks identified as essential IAW DoDI 3020.37, *Continuation of Essential DoD Contractor Services During Crisis*.

17.2.2.6.2. Time-Phased Force and Deployment Data (TPFDD). Offerors shall identify their requirements, employee and equipment, to deploy with the force for inclusion into the TPFDD process IAW CJCSM 3122.02B.

17.2.2.6.3. Medical Preparation. Offerors deploying with the force shall meet the minimum medical standards IAW DODI 3020.37, DODD 6485.1, and 48-Series instructions.

17.2.2.6.4. Administrative Preparation. The Government will provide offerors (US Citizens only) deploying with the force Geneva Convention Cards, civilian ID cards, and DD Form 93 **Record of Emergency Data** IAW DODI 3020.37, DODI 1000.1, DODI 1000.13, and commensurate AFIs.

17.2.2.6.5. Equipment. The Government will provide offerors deploying with the force personnel protective equipment, e.g. chemical defensive gear, as determined by the combatant commander IAW DODI 3020.37 and commensurate AFIs.

17.2.2.6.6. Weapons and Ammunition. Offerors deploying with the force shall not carry personal owned firearms and ammunition. The Government will authorize issue of standard military side arm (9mm) to selected offerors for self-defense. When applicable, the Government will provide weapons familiarization training, qualification training, and briefings on rules of engagement. Offerors shall use government sources of supply to obtain ammunition for side arms IAW AFI 21-201.

17.2.2.6.7. Uniforms. Offerors deploying with the force shall wear uniforms required by the combatant commander or COMAFFOR.

17.2.3. Contract Data Requirements. The Section C requirements document and HPO management plan shall not require data deliverables except when required IAW an AFI or TO. Data deliverables created as a natural consequence of complying with AFIs or TOs shall not be cited in a contract data

requirements list (CDRL) or contract line item number. For example, report data collected IAW an AFI or TO and documented on the appropriate AF Form/IMT or equivalent.

17.2.4. Special Solicitation Requirements. See Air Force Knowledge Know CoP AF Maintenance Templates for Performance-Based Functions.

17.3. Post-Contract Award And MEO/HPO Implementation Procedures. MAJCOMs shall designate a centralized (MAJCOM-level) or decentralized (wing/group-level) program management function, i.e., government program management office, to oversee and manage the tasks of following paragraphs for each contract and MEO/HPO management plan. For the purposes of this instruction the Continuing Government Organization (CGO) required IAW OMB Circular A-76 is synonymous with government program management office. The government program office is the single focal point for the performance-based activity (contractor, MEO, and HPO) to communicate performance results, , identify issues beyond their control, and solicit guidance and interpretations. The office may consist of subject matter experts from various functional areas (e.g., CE, communications, contracting, finance, plans, logistics).

17.3. (ANG) This is managed by NGB/A4M.

17.3.1. Contract Administration. See FAR Part 42. The contracting officer, PCO or ACO is the OPR for contract administration. The government program management office is the office of collateral responsibility (OCR) for executing the contract administration tasks as determined by the PCO/ACO.

17.3.2. Financial Management. The government program management office shall annually (usually in March) ensure that the MAJCOM/FM Budget Office includes contract funding requirements in the FYDP. The government program management office shall identify MEO and HPO personnel requirements for inclusion in the FYDP. Also, the government program management office shall establish procedures to collect reimbursements when a performance-based activity (contractor, MEO, or HPO) provides support as a support agreement supplier (host).

17.3.3. Support Agreement Management. See AFI 25-201. Performance-based activities (contractor, MEO, and HPO) cannot negotiate and sign support agreements. The government program management office shall negotiate, coordinate and control support agreements for supported workloads. MEOs and HPOs are authorized to negotiate, coordinate, and control support agreements pertinent to their functional area, but shall not without written approval of the government program management office.

17.3.4. Change Management for Performance-Based Activities (contract, MEO, and HPO). See FAR Part 43 for contracts. The PCO/ACO, is the OPR for issuing contract modifications; making changes, correcting errors, executing options, adding new requirements, etc. The government program management office is the OCR for issuing and identifying the need for contract modifications. The government program management office is the OPR for changing MEO and HPO management plans. The FC/FD and the quality assurance personnel are the best sources for inputs on the need for making changes, correcting errors, executing options, adding new requirements, etc.

17.3.5. Management of Government Property. See FAR Part 45. AFEMS and IPMS shall be used to manage government property possessed by performance-based activities (contractor, MEO, and HPO) to the maximum extent possible. AFEMS shall be used to manage EAID accountable property only. Manage non-EAID accountable property IAW procedures in the contract or MEO/HPO management plan. Property management is a joint responsibility of the performance-based activity (contractor, MEO, and HPO), PCO/ACO, and government program management office.

17.3.6. Government Contract Quality Assurance. See FAR Part 46. Successful contract performance is dependent upon positive open communication between the PCO/ACO, quality assurance evaluator, and the performance-based activity (contractor, MEO, and HPO). It is imperative that all parties strive to achieve and maintain an atmosphere of mutual understanding and cooperation. Successful strategies may include regularly scheduled meetings between the government program management office personnel and the performance-based activity (contractor, MEO, and HPO) to discuss inspection results, trends, and other items of mutual interest. The QAE and performance-based activity (contractor, MEO, and HPO) are not adversaries; they are partners who share the same goal - successful mission accomplishment. ***NOTE:*** for the purposes of this instruction QAE is synonymous with quality assurance representative (QAR), contracting officers technical representative (COTR), and contracting officers representative (COR).

17.3.6.1. Lead MAJCOM. The lead MAJCOM shall supplement this instruction with guidance and procedures for administering weapon specific government contract quality assurance programs, e.g., mandatory government inspections (MGIs), surveillance requirements for CLS aircraft, QAE qualifications, etc. Exception: if a MAJCOM owns full CLS aircraft and the lead command does not, the owning command will develop the PMAP.

17.3.6.2. FC/FD Role. The FC/FD is the government's functional authority for the contracted function. The FC/FD retains all responsibility for the success or failure of the contracted function, the same as if the contracted function was an organic activity. The functional area includes all maintenance activities as defined in the contract Section C requirements document or MEO/HPO management plan. In addition to the duties and responsibilities outlined in AFI 63-124, the FC/FD shall:

17.3.6.2.1. Keep up-to-date on mission changes that could affect creation of a contract modification.

17.3.6.2.2. Ensure the development of a PMAP that effectively measures and evaluates contractor, MEO, or HPO performance throughout the life of the contract or management plan.

17.3.6.2.3. Review problem areas identified by the government program management office, and when applicable coordinate with the PCO/ACO to resolve the problems. If the problem cannot be resolved, request assistance through command channels.

17.3.6.2.4. Review documents related to default/recompete prior to scheduled recompetition; contract Section C requirements document or scope of work modifications; changes to award fee plan (if applicable); contractor, MEO, or HPO proposals to new or revised DoD, AF, MAJCOM, and local directives.

17.3.6.2.5. Coordinate waiver requests with the MAJCOM/A4 staff when initiated by the contractor, MEO, or HPO.

17.3.6.2.6. Ensure that the government program office uses performance-based contract assessment tools (e.g. process and systems audits, compliance checklists, random sampling or other frequency-based inspection methods, etc.)to monitor contractor, MEO, or HPO submission of required reports according to the contract Section C requirements document, management plan, AFI, or MAJCOM publication.

17.3.6.2.7. Ensure that the government program office uses surveillance methods to monitor contractor, MEO, or HPO performance IAW federal, state, and local environmental laws and AF directives.

17.3.6.2.8. Ensure development of a contingency plan/strike plan for tasks identified as essential IAW DoDI 3020.37, *Continuation of Essential DoD Contractor Services During Crisis*, and annually coordinate with government program office and PCO/ACO to revise, update, or change it.

17.3.6.2.9. Establish procedures for technical evaluation of contractor-submitted value engineering change proposals.

17.3.6.2.10. Participate as a voting member of the award fee/term review board, as applicable.

17.3.6.2.11. Designate QAEs for CLS/CFT contracts using lead MAJCOM procedures, consult applicable lead MAJCOM/A4M for further guidance.

17.3.6.2.12. Review and approve monthly surveillance schedules submitted by the government program office.

17.3.6.2.13. Ensure QAEs are not assigned additional duties that interfere with their ability to fully meet the time requirements of contract surveillance and other QAE duties.

17.3.6.2.14. Ensure the government program office reviews publications for acceptance (when contractor generated) (e.g.,, wing-level instructions and group OIs) developed by the performance-based activity (contractor, MEO, or HPO) prior to final signature and implementation.

17.3.6.2.15. Ensure that any traditional responsibilities (i.e. Propulsion Flight Chief acting as the wing 2A6X1 AFSC functional manager, providing technical guidance to maintain propulsion systems to support the wing mission) normally performed by military personnel are identified. If those duties are required and are not appropriate for the MEO/HPO to accomplish, identify those requirements to the responsible Commander for appointment of the most qualified personnel.

17.3.6.3. Contracting Officer. The PCO/ACO is responsible for overseeing the administration of a contract and is the only individual with the legal authority to act as an agent between the government and the contractor. This legal authority, provided under federal law, gives an PCO/ACO the power to enter into, modify, interpret, and terminate a contract on behalf of the government. The greatest responsibility of the PCO/ACO is to ensure the contractor's performance satisfactorily meets contractually agreed upon standards as stated in the contract Section C requirements document.

17.3.6.4. Government Program Office. The government program office (which may include the government QAE function) is an inherently governmental activity. The responsibility of this office is to ensure the performance-based activity, MEO's and HPO's performance satisfactorily meets the performance standards documented in the management plan.

17.3.6.5. Chief QAE. The chief QAE (synonymous with Flight Chief, QAE or Superintendent, QAE) is tasked with the responsibility to ensure that performance-based activity (contractor, MEO, and HPO) performance is surveilled IAW criteria outlined in the PWS and performance plan. They are also responsible for reporting all performance assessment results through the FC/

FD to the PCO/ACO, for disposition. The chief QAE fulfills these responsibilities by overseeing the QAEs that have been delegated inspection and acceptance authority by the PCO/ACO.

17.3.6.5.1. Responsibilities. Organizations with a single QAE position shall utilize this individual as both the Chief QAE and QAE. Initial certification and annual evaluations shall be accomplished by the FC/FD. Chief QAEs shall perform the following:

17.3.6.5.1.1. Review performance-based activity's (contractor, MEO, or HPO) inspection system, quality program, or other means employed to control quality and comply with contract Section C requirements document or management plan. Submit comments through FC/FD to PCO/ACO for disposition.

17.3.6.5.1.2. Annually review and revise checklists, performance requirements document, evaluation guides, etc. for currency and completeness.

17.3.6.5.1.3. Ensure that each area surveilled has a primary and alternate QAE assigned to ensure contract surveillance is accomplished. ***NOTE:*** Alternate QAEs must possess a maintenance-related AFSC, or applicable civilian series, if they are responsible for surveilling aircraft or aircraft trainer maintenance functions or tasks.

17.3.6.5.1.4. Ensure QAE positions are filled via applicable MAJCOM procedures when they become vacant.

17.3.6.5.1.5. Perform an initial evaluation on each QAE to determine past qualifications, experience, and ability to accomplish technical inspections and contract surveillance functions. Each evaluator must be qualified in the appropriate area before performing evaluations, inspections, or surveillance duties unsupervised. Document initial evaluations for all QAEs (primary and alternates) in the individuals' training records or MIS.

17.3.6.5.1.6. Perform over-the-shoulder (OTS) evaluations of each primary and alternate QAE in the performance of surveillance activities. Evaluate annually at a minimum. The purpose of this evaluation is to ensure proficiency in surveillance techniques. Document the results of the evaluation in the QAE's training records. In large units, this responsibility may be delegated to the QAE superintendent, or equivalent.

17.3.6.5.1.7. Develop and publish a monthly schedule of QAE surveillance activities(label as FOUO). Distribute the schedule to the FC/FD and contracting officer for approval no later than the 5 duty days before the beginning of the period it covers or as required by MAJCOM or unit level procedures. Maintain copies of all schedules on file for the life of the contract.

17.3.6.5.1.8. Collect, analyze and report award fee data at the end of each award fee period, using applicable award fee evaluation plan.

17.3.6.5.1.9. Supplement and perform surveillance activities as required.

17.3.6.5.1.10. Develop and maintain the PMAP and associated contract performance assessment documentation IAW ACO/PCO guidelines.

17.3.6.5.1.11. Provide assistance to the wing safety office, or equivalent, in mishap and incident reporting, if required.

17.3.6.5.1.12. Review performance-based activity (contractor, MEO, and HPO) developed publications (wing/group instructions) prior to acceptance and publication. Careful reviews are critical to ensure they meet all contractual requirements and do not conflict with local, MAJCOM, or AF instructions.

17.3.6.5.1.13. Ensure that discrepancies discovered by QAEs are documented in the appropriate aircraft or equipment forms, and in MIS (where applicable, the performance-based activity will make the MIS entries). QAEs will follow-up to ensure the performance-based activity (contractor, MEO, and HPO) takes corrective action and preventive actions.

17.3.6.5.1.14. Evaluate performance-based activity (contractor, MEO, and HPO) proposals and provide comments and recommendations to the FC/FD and contracting officer.

17.3.6.5.1.15. Develop a QAE training program.

17.3.6.5.1.16. Verify and validate contractor submitted performance indicators.

17.3.6.5.1.17. Assist the ACO in managing GFE.

17.3.6.6. QAE. The QAE role is to observe, then document the overall performance of the performance-based activity (contractor, MEO, and HPO) without duplicating or augmenting the performance-based activity's QC function. The QAE is not part of the performance-based activity's (contractor, MEO, and HPO) QC function. Additionally, QAE protect the government’s interest by being the eyes and ears of the FC/FD and PCO/ACO concerning performance-based activity (contractor, MEO, and HPO) performance. QAE also provides technical support to the FC/FD and PCO/ACO.

17.3.6.6.1. Responsibilities. The QAE is responsible for a wide range of surveillance requirements related to the surveillance of maintenance contracts. Specifically, the QAE will:

17.3.6.6.1.1. Know and understand the specifications and requirements of the contract.

17.3.6.6.1.2. Know and maintain proficiency in performance based contract assessment methods.

17.3.6.6.1.3. Know and apply the procedures for documenting surveillance.

17.3.6.6.1.4. Perform surveillance according to the PMAP.

17.3.6.6.1.5. Attain qualification in the appropriate areas before performing evaluations, inspections, or surveillance duties unsupervised.

17.3.6.6.1.6. Maintain technical competency in their assigned surveillance area.

17.3.6.6.1.7. Review incoming and outgoing official government and performance-based activity (contractor, MEO, and HPO) correspondence, as applicable.

17.3.6.6.1.8. Review deficiencies, TCTO, and mishap performance-based activity (contractor, MEO, and HPO) reports for accuracy, adverse trends, and mission accomplishment. Additionally, review performance-based activity (contractor, MEO, and HPO) logistics reports to the MAJCOM for possible indicators of performance trends.

17.3.6.6.1.9. Evaluate the effectiveness of the contractor's involvement in mishap investigations IAW AFI 91-204.

17.3.6.6.1.10. Serve as a member of the source selection team when required.

17.3.6.6.1.11. Develop monthly surveillance schedules

17.3.6.6.1.12. Perform MASO duties, if required.

17.3.6.6.1.13. Maintain proficiency in the use of the MIS for use in surveillance activities.

17.3.6.7. QAE/FC/FD/PCO/ACO training requirements. The FC/FD and chief QAE are responsible for ensuring QAEs receive required training. The following training requirements apply to all QAEs:

17.3.6.7.1. QAE initial contract surveillance related training. Initial QAE contract surveillance related training consists of formal training conducted in two phases. QAEs will complete this training prior to performing surveillance duties. QAEs may also be required to complete additional MAJCOM directed training.

17.3.6.7.1.1. Phase I, General QAE Training. The Quality Assurance Program Coordinator (QAPC) shall provide the training IAW AFFARS Mandatory Procedure 5346.103.

17.3.6.7.1.2. Phase II, Contract Specific Training. Training must be completed for each contract to which the FC/FD and QAE is assigned. The FC/FD ensures the PCO/ACO provides this training as required by AFFARS Mandatory Procedure 5346.103, The Quality Assurance Program, paragraph 2.b.(2).

17.3.6.7.1.3. Refresher Training. Refresher training must be completed at least annually for the purpose of staying current on all contract and performance management assessment plan changes.

17.3.6.7.2. MAJCOM Training. MAJCOMs will determine recurring QAE training requirements as needed to ensure QAEs remain current on new or changed contract surveillance concepts.

17.3.6.7.3. QAE Qualification Training. To ensure that all contract Section C requirements document performance elements are comprehensively and competently surveilled without interruption due to lack of QAE qualification, the chief QAE must use a mixture of CUT and OJT training.

17.3.6.7.3.1. CUT training. The FC/FD and/or chief QAE and alternate QAEs will use CUT training to the extent necessary to ensure all contract requirements are surveilled by qualified QAEs.17.3.3.6.7.3.2. OJT training. The FC/FD and/or chief QAE ensures that QAEs are familiar with surveillance and documentation methods/procedures, development of surveillance schedules, and familiarization with emergency procedures if performance-based activity (contractor, MEO, and HPO) performance is interrupted by default or strike.

17.3.6.7.4. QAE training certification. QAEs will be knowledgeable of the tasks they surveil. QAEs are not required to be certified on specific tasks; rather, they are duty-position qualified to inspect, surveil, and observe according to the requirements in this instruction and other applicable directives. (***NOTE:*** Special emphasis will be placed on knowledge and surveillance requirements for tasks requiring special certification.)

17.3.6.7.4.1. QAEs requiring special certification authority (Red X, IPI, etc.) shall comply with the requirements in **Chapter 14**.

17.3.6.7.5. QAEs performing surveillance on fuel systems or fuel maintenance facilities are familiar with all associated safety requirements prior to performing the surveillance (see TO 1-1-3).

17.3.6.7.6. QAEs performing surveillance of munitions activities are familiar with the requirements of AFI 21-201 prior to performing munitions activity surveillance. QAEs performing surveillance activities of civilian contractors performing MQ-1/MQ-9 munitions loading/unloading operations will comply with weapons academic training per **Chapter 12** of this AFI.

17.3.6.7.7. QAEs responsible for surveilling egress operations at contract organizations receive familiarization training per AFI 21-112.

17.3.6.8. QAE training records. Training records documenting QAE training shall be maintained IAW AFI 36-2201 and the CFETP. As a minimum, all QAEs must maintain an AF IMT 797, regardless of grade or skill level that identifies specific responsibilities required by this instruction or other applicable directives. File and maintain the AF IMT 797 in the QAE work center or is maintained by immediate supervisor when immediate supervisor is geographically separated from QAE work center. Units may elect to use a locally developed automated product in place of the AF IMT 797. If this option is used, the product must contain, as a minimum, all the same data elements as the AF IMT 797.

17.3.6.9. FC/FD contract surveillance related training. All FC/FD must successfully complete MAJCOM training within 30 days of assignment, if applicable.

17.3.6.10. Contracting Officer, PCO or ACO, Training. PCO/ACOs assigned to aircraft maintenance, trainer maintenance, transient alert maintenance contracts will successfully complete MAJCOM training within 30 days of contract assignment, if applicable.

17.3.6.11. PMAP. The purpose of a PMAP is to provide a planned process for surveilling the contractor's actual performance, and comparing that performance against the contractual requirements to determine conformity with the technical requirements of the contract. The PMAP shall identify and describe the roles and responsibilities for implementing and maintaining the following key elements of managing and executing a contract performance management assessment program:

i. Performance Assessment Planning & Preparation

ii. Performance Assessment

iii. Performance Assessment Results Analysis

iv. Performance Assessment Reporting

v. Performance Assessment Follow-up

vi. Performance Assessment Report Closure

17.3.6.11.1. PMAP development. PMAP development is mandatory for all AF units that fall under the purview of this instruction. It is the responsibility of the FC/FD and Chief QAE to ensure that a PMAP effectively measures and evaluates a performance-based activity (contrac-

tor, MEO, and HPO). When properly developed the PMAP provides QAEs with information to identify acceptable performance and potential reasons for any nonconforming performance.

17.3.6.11.2. Required PMAP inspection elements. Only items included in the applicable contract Section C requirements document or MEO/HPO management plan.

17.3.6.11.2.1. Identify contract surveillance requirements in the PMAP. PMAP surveillance will be based on the minimum surveillance necessary to assess effective and efficient contractor compliance to performance work statement requirements. Surveillance methods shall be based on performance-based contract assessment methods and techniques. The PMAP shall avoid using traditional legacy system methods such as stove-pipe checklists and constant inspection.

17.3.6.11.2.2. Identify and describe performance-based contract assessment techniques and their application. The PMAP shall also describe how to document and report exceptional and unacceptable performance.

17.3.6.11.2.3. Establish and assign responsibilities in the PMAP for verifying costs of reimbursable items, to include items purchased through the micro-purchase program, when applicable.

17.3.6.11.2.4. Establish procedures to review, evaluate, and provide comments and recommendations to performance-based activity (contractor, MEO, and HPO) proposals.

17.3.6.11.2.5. Include procedures for development, and coordination of monthly surveillance schedules.

17.3.6.11.2.6. Ensure all performance-based activity (contractor, MEO, and HPO) hours of operation are surveilled on a random basis to include all shifts, weekends, nights, and holidays, as applicable.

17.3.6.11.2.7. The scope of contract performance assessment or inspection shall be based on past performance, mandatory, statutory, and regulatory requirements. Performance assessment planning shall consider use operational risk, service complexity and criticality as factors in deciding the performance assessment plan from month to month.

17.3.6.11.3. PMAP format. The PMAP is developed IAW requirements of AFI 63-124, this instruction, and applicable MAJCOM guidance.

17.3.6.12. Surveillance Scheduling. The QAE will develop a monthly schedule of surveillance activities based on PMAP requirements. The schedule must be completed not later than five duty days prior to the beginning of the period it covers and a final schedule no later than three duty days into the period it covers. The FC/FD must review and return the schedule to the QAE no later than the last day of the month preceding the scheduled month. The QAE must provide a copy of the schedule to the PCO/ACO before the start of the surveillance period. *The surveillance schedule is FOR OFFICIAL USE ONLY. Do not release to anyone other than authorized government personnel. These records are exempt from release under FOIA Exemption High b2.* Post changes to scheduled observations as they occur and send copies to the PCO/ACO and FC/FD or FD, as requested.

17.3.6.12.1. If minimum monthly surveillance requirements cannot be met due to equipment nonavailability or special circumstances, include an explanation on the summary for each

missed area and/or inspection category. In such cases, a statement from the FC/FD and PCO/ACO approval for the variance is required.

17.3.6.12.2. The chief QAE shall adjust surveillance activities commensurate with contractor's performance and level of risk to the government should the contractor not perform in an acceptable manner. If a particular function of the contractor's performance has a continuing record of acceptable performance and unacceptable performance would not likely result in loss of life to AF personnel or damage to government property, surveillance of that function should be reduced. If contractor performance of a function is less than satisfactory, surveillance of that function should be increased. When this is determined to be appropriate, the chief QAE, with FC/FD and PCO/ACO approval, will adjust the surveillance schedule.

17.3.6.12.3. Inspections (technical or observation area) may be either scheduled, unscheduled, or as observed; however, only scheduled inspections required by the PMAP may be used to determine or apply a rating for acceptable performance according to contract standards.

17.3.6.12.4. Unscheduled inspections are specific inspections QAEs perform outside or above the inspections listed in the schedule.

17.3.6.12.5. As-observed inspections are also considered as unscheduled inspections. They are discrepancies that are observed by QAEs but are not part of the specific inspection performed, whether it is scheduled or unscheduled. They occur when discrepancies or deficiencies are observed or discovered that are not directly associated with another inspection. Document and report as-observed deficiencies.

17.3.6.13. Inspections.

17.3.6.13.1. Technical inspections. Technical requirements of a contract are surveilled by performing technical inspections. Any maintenance task accomplished in accordance with technical guidance, (TO, work-card, etc.) qualifies for QAE surveillance under the technical inspection concept. Inspections may be performed while maintenance is being performed (concurrently) or after the fact. QAEs surveilling contracts that do not have technical inspections specifically addressed in this instruction will use the procedures in this paragraph to perform technical inspections included in the PMAP. QAE accomplish technical inspections by evaluating the following:

17.3.6.13.1.1. Checking a minimum of 50 percent of the required inspection items. Normally, disassembly of a part, removal of a stress panel, or similar actions are not necessary to accomplish a technical inspection.

17.3.6.13.1.2. Review of the aircraft or equipment forms and the MIS for proper documentation (applicable to the job being surveilled); checking for proper and current technical data usage; proper tool usage; and after maintenance FO checks of the area in which the task was performed. Discrepancies found in these categories are normally applied to the technical inspection; however, if the QAE's judgment and experience determines it is inappropriate to include them, they may be documented separately as an "as-observed" unscheduled inspection.

17.3.6.13.1.3. Minimum technical inspection surveillance requirements/frequencies for applicable aircraft, trainer transient aircraft, will be determined by each Lead MAJCOM.

The FC/FD, PCO/ACO and chief QAE, using MAJCOM guidance will jointly determine any additional surveillance requirements associated with maintenance contracts.

17.3.6.13.1.4. QAE activities surveilling AF maintenance contracts not specifically addressed in this chapter will use the contract Section C requirements document to determine technical area surveillance requirements. As a minimum, include a percentage of each technical inspection in the contractor's QC/QA program requirements outlined in the contract Section C requirements document.

17.3.6.13.1.5. Technical Inspection ratings. Technical inspections will be rated as either acceptable or unacceptable. Assign unacceptable ratings when one of the following conditions occurs:

17.3.6.13.1.5.1. A step serious enough to adversely affect the performance of the equipment involved is omitted or improperly completed.

17.3.6.13.1.5.2. A major or Red X discrepancy is detected.

17.3.6.13.1.5.3. The number of minor discrepancies exceeds the baseline or AQL of a like inspection contained in the QC/QA baselines or AQLs outlined in the contract. If no like inspection exists then assign an unacceptable rating when the number of minor discrepancies exceeds 3. (***NOTE:*** If the baseline for a like inspection is 3 or less then the like inspection baseline or AQL will apply.)

17.3.6.13.1.5.4. Assign a technical rating inspection as acceptable when the total number of minor discrepancies does not exceed the applicable baseline or AQL contained in the quality control/assurance requirements of the contract.

17.3.6.13.1.5.5. QAEs at units operating from a contract Section C requirements document with a SDS will ensure that applicable standards identified in the SDS are considered during the development of technical inspection requirements.

17.3.6.13.2. Follow-up technical inspections. Follow-up technical inspections are inspections accomplished that follow behind the contractor’s QC for the purpose of verifying the contractor’s quality program. All units, to include CLS contracts, will identify select technical inspections contained in their PMAP. The chief QAE schedules a sufficient percentage of technical inspections as follow-up technical inspections. These inspections may be performed in conjunction with other inspection requirements. If this option is used, document each inspection is documented separately.

17.3.6.13.2.1. As with technical inspections, follow-up technical inspections may also be performed concurrently or after performance-based activity (contractor, MEO, and HPO) QC/QA inspections. Include these requirements in the PMAP and the monthly surveillance schedule. ***NOTE:*** The chief QAE may elect to do QC follow-up inspection on observation work areas as well.

17.3.6.13.2.2. Follow-up technical inspection ratings. Follow-up technical inspections will be rated the same as technical inspections.

17.3.6.13.3. Observation area inspections. Observation area inspections are similar to IG inspections, where QAEs assess work center’s/areas ability to manage program areas they are

contractually responsible for. Minimum observation work area surveillance requirements will be determined by each MAJCOM.

17.3.6.13.4. Safety. Document violations of OSHA or AFOSHSTDs that clearly present a potential to damage or injure government resources as part of the inspection being performed or, if appropriate, "as observed." The documentation should clearly indicate the potential to damage or injure government resources. QAEs do not document violations of OSHA or AFOSHSTDs that do not present the potential to damage or injure government resources; rather they will informally notify the site supervisor and PCO/ACO.

17.3.6.13.5. Documentation File Inspections. Rate documentation file inspections for aircraft, support equipment, and engines. The inspections include review of the status and historical documents (include documents in the MIS). Send discrepancies found in the historical documents file to the performance-based activity (contractor, MEO, and HPO) for corrective action. Actual discrepancies are not corrected except for items of a historical nature, including automated documents that can be verified from other sources. Specifically:

17.3.6.13.5.1. Each incorrect clearing of a Red X symbol, erasures of symbols, overdue TCIs, and overdue inspections caused by improper documentation are considered major discrepancies. The correct use and clearance of Red X symbols are items of special attention during documentation file inspections. QAEs must ensure unsafe or unfit for operation conditions are represented by Red X entries and these entries are properly cleared.

17.3.7. Functional Check Flight (FCF) Pilot Responsibilities. FCF pilots assigned to the QAE activity may assist the FC/FD and chief QAE as necessary. Additionally, FCF pilots after completing QAE training requirements, may perform no-notice installed engine operation inspections and training IAW AFI 21-101. FCF pilots will inform the chief QAE of problems or adverse trends in performance-based activity (contractor, MEO, and HPO) performance noted when performing FCFs.

17.3.8. Documenting/correcting performance-based activity (contractor, MEO, and HPO) performance. QAE technical, observation area, or as observed inspections will be documented using applicable AF IMTs/forms or electronic equivalent. Document any discrepancies as soon as they are discovered, and notify the performance-based activity (contractor, MEO, and HPO) as soon as the surveillance is completed. After the surveillance form is completed, QAEs must also request a performance-based activity (contractor, MEO, and HPO) representative to initial the document on which the inspection is recorded to acknowledge receipt of performance assessment results and not necessarily concurrence with the findings.

If the performance-based activity (contractor, MEO, and HPO) representative refuses to initial, it is so noted by the QAE. A date and time the discrepancy is discovered is also annotated, and the contract representative is asked to correct the problem. Document and bring to the attention of the performance-based activity (contractor, MEO, and HPO) errors found in services not scheduled for observation, but do not use unscheduled or as observed inspections to determine performance acceptability for the contractors monthly rating.

17.3.9. End of monthly surveillance summary. At the end of each month the chief QAE compiles a monthly summary of all QAE surveillance activities for the month. The content, format and routing of the end of month surveillance summary will be determined by each MAJCOM.

17.3.10. Performance-based activity (contractor, MEO, and HPO) non-conformance. If at any time during the surveillance rating period (typically monthly or quarterly as specified by the contract Sec-

tion C requirements document), the results of surveillance required by the PMAP show that the number of unacceptable observations do not meet contract standards or performance requirements, and the chief QAE determines it is not government caused, the QAE organization initiates a corrective action request specified by the applicable contract or a form specified by the MAJCOM.

17.3.10.1. Forward the completed report to the PCO/ACO for evaluation. If the PCO/ACO determines it is appropriate, send the report to the contractor, with return receipt requested. The performance-based activity (contractor, MEO, and HPO) normally has 15 calendar days from date of receipt to return the report to the PCO/ACO with a response as to cause, corrective action, and actions taken to prevent recurrence. The PCO/ACO, in consultation with the QAE, evaluates the contractor's response and takes appropriate action.

17.3.10.2. If the contractor's actions cited by the performance-based activity (contractor, MEO, and HPO) in their response to the report fail to correct the area of non-conformance, the chief QAE ensures another corrective action request is initiated for any subsequent surveillance rating periods in the same non-conforming area.

17.3.10.3. If any areas of non-conformance are not corrected using previous guidance, it is the responsibility of the FC/FD to contact the PCO/ACO or government program office to initiate discussion with corporate headquarters or issue a cure notice. In extreme circumstances a show cause notice or even notice contract termination may be required as determined by the FC/FD and PCO.

17.3.11. Past Performance Reporting. QAE organizations in coordination with the FC/FD and PCO/ACO will accomplish annual contractor performance reporting using the Contractor Performance Assessment Reporting System (CPARS) as identified in the May 2002 AF CPARS guide.

17.3.12. Acceptance of services will be accomplished utilizing DD Form 250 or the wide area work flow system (WAWF). It is the chief QAE's responsibility to validate the accuracy of financial figures submitted by the contractor prior to the government paying for services. ***NOTE:*** Not applicable to MEO/HPO organizations.

17.3.13. Award fee administration. Award fee management procedures will be determined by the applicable contract award fee evaluation plan or MAJCOM determined procedures. ***NOTE:*** Not applicable to MEO/HPO organizations.

17.3.14. Transition administration (FAR Part 49). During the transition period of a contract, the QAE organization is responsible to ensure the performance-based activity (contractor, MEO, and HPO) meets all criteria outlined in the performance-based activity (contractor, MEO, and HPO) proposed transition plan.

17.4. Forms Prescribed.

17.4.1. Forms Prescribed. AF IMT 596, **Quick Engine Change Kit Inventory**, AF IMT 726, **Transient Aircraft Service Record**, AF IMT 861, **Base/Transient Job Control Number Register**, AF IMT 2400, **Functional Check Flight Log**, AF Form 2401, **Equipment Utilization/Maintenance Schedule**, AF IMT 2406, **Maintenance Preplan**, AF IMT 2407, **Weekly/Daily Flying Schedule Coordination,** AF IMT 2408, **Generation Maintenance Plan**, AF IMT 2409, **Generation Sequence Action Schedule**, AF IMT 2410, **Inspection/TCTO Planning Checklist**, AF IMT 2419, **Routing and Review of Quality Control Reports**, AF IMT 2420, **Quality Assurance Inspection Summary**, AF IMT 2426, **Training Request and Completion Notification**, AF IMT 2434, **Munitions Configuration and Expenditure Document** AF IMT 2521, **Turn-Around Transaction Log.**

17.4.2. Forms or IMTs Adopted. AF IMT 3, **Hazard Abatement Plan,** AF IMT 55, **Employee Safety and Health Record**, AF IMT 457, **USAF Hazard Report**, AF IMT 601, **Equipment Action Request**, AF Form 623, **Individual Training Record**, AF IMT 623A, **On-the-Job Training Record Continuation Sheet,** AF IMT 797, **Job Qualification Standard Continuation**, AF IMT 898, **Field Training Requirements Scheduling Document**, AF Form 979, **Danger Tag**, AF Form 1032, **WRM Spare List**, AF IMT 1067, **Modification Proposal**, AF IMT 1098, **Special Tasks Certification and Recurring Training**, AF Form 1118, **Notice of Hazard**, AF Form 1199, **USAF Restricted Area Badge,** AF IMT 1297, **Temporary Issue Receipt**, AF Form 1492, **Warning Tag**, AF IMT 1800, **Operators Inspection Guide and Trouble Report (General Purpose Vehicles)**, AF IMT 1815, **Difficulty Report Worksheet**, AF IMT 1996, **Adjusted Stock Level,** AF IMT 2001, **Notification of TCTO Kit Requirements**, AF IMT 2005, **Issue/Turn-In Request,** AF IMT 2096, **Classification/On The Job Training Action**, AF IMT 2402, **Weekly Equipment Utilization and Maintenance Scheduler**, AF IMT 2403, **Weekly Aircraft Utilization/Maintenance Schedule**, AF IMT 2411, **Inspection Document**, AF Form 2413, **Supply Control Log,** AF IMT 3215, **Communications-Computer Systems Requirements Document**, AFTO IMT 20, **Repair Cost and Reparable Value Statement**, AFTO IMT 22, **Technical Manual (TM) Change Recommendation and Reply**, AFTO IMT 45, **Request for Calibration Responsibility Determination**, AFTO IMT 82, **Certificate-Proofing TCTOs/Kits**, AFTO IMT 95, **Significant Historical Data**, AFTO IMT 103, **Aircraft/Missile Condition Data**, AFTO IMT 158, **TO Review Comment Shee**t, AFTO IMT 244, **Industrial/Support Equipment Record,** AFTO IMT 349, **Maintenance Data Collection Record**, AFTO Form 350, **Reparable Item Processing Tag**, AFTO Form 391, **Parachute Log**, AFTO Form 392, **Parachute Repack, Inspection and Component Record**, AFTO Form/IMT 781, **AFORMS Aircrew/Mission Flight Data Document**, AFTO Form/IMT 781A, **Maintenance Discrepancy and Work Document**, AFTO Form/IMT 781C, **Avionics, Configuration and Load Status Document,** AFTO Form/IMT 781D, **Calendar and Hourly Item Inspection Document**, AFTO Form/IMT 781F, **Aerospace Vehicle Flight Report and Maintenance Document**, AFTO Form/IMT 781H, **Aerospace Vehicle Flight Status and Maintenance Document**, AFTO Form/IMT 781J, **Aerospace Vehicle - Engine Flight Document**, AFTO Form/IMT 781K, **Aerospace Vehicle Inspection, Engine Data, Calendar Inspection and Delayed Discrepancy Document**, DD Form 1149, **Requisition and Invoice or Shipping Document**, DD Form 1348-1A, **DoD Single Line Item Release/Receipt Document**, DD Form 1348-6, **DoD Single Line Item Requisition System Document**, DD Form 1610, **Request and Authorization for TDY Travel of DoD Personnel**, SF 364, **Report of Discrepancy**, SF 368, **Product Quality Deficiency Report.**

Chapter 18 (Added-ANG)

AIR NATIONAL GUARD ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS (ADDED).

18.1. (Added-ANG) NGB Technical Support, Single Point of Contact (SPOC), and Advisory Committees/Teams. When established, the purpose of the SPOC, advisory committee/team is to augment and advise NGB/A4 staff personnel and is also responsible to the respective weapon system or maintenance council. A committee/team must be sanctioned by the ANG in order for it to be recognized. The need to form a team or SPOC shall be initiated by NGB/A4 or by the various weapon system councils. Appointment to the team must be by recommendation through the individuals MXG/CC to the weapons system council president for approval and to the respective ANG functional OPR for appointment. Team/SPOC members can only be removed by NGB/A4. Notification of the team/SPOC members to the field must be by message or e-mail. Duties of the team/SPOC include, but are not limited to:

18.1.1. **(Added-ANG)** Act as the functional expert for specific aircraft maintenance related issues.

18.1.2. **(Added-ANG)** Coordinate with all other agencies/units as required to establish a consensus on issues.

18.1.3. **(Added-ANG)** Provide technical guidance on specific areas of expertise.

18.1.4. **(Added-ANG)** Provide technical assistance to the ANG and respective weapon system council for policy creation.

18.1.5. **(Added-ANG)** Execute specific technical tasks as assigned IAW existing ANG policy.

18.1.6. **(Added-ANG)** Attend meetings pertaining to assigned subjects.

18.1.7. **(Added-ANG)** Maintain close communications with ANG functional OPR.

18.1.8. **(Added-ANG)** Provide trip reports, point papers, background papers, and general information when required.

18.1.9. **(Added-ANG)** Provide updates to units.

18.1.10. **(Added-ANG)** Generate informational/tasking message, as required, after coordination with ANG functional OPR.

18.1.11. **(Added-ANG)** SPOCs shall not set policy.

18.1.12. **(Added-ANG)** For Bureau Directed Travel (BDT) it is imperative that a copy of pay documents and computations (Advice of Payment) is provided to NGB POC without delay.

18.2. (Added-ANG) KC-135 OPLAN 8044 If KC-135 units have a requirement for OPLAN 8044 duties, they shall establish a written plan or OI outlining as a minimum:

18.2.1. **(Added-ANG)** Crew Chief qualifications.

18.2.2. **(Added-ANG)** Minimum “alert bag” contents.

18.3. (Added-ANG) Alert Detachment.

18.3.1. **(Added-ANG) Detached Alert:**

18.3.1.1. **(Added-ANG)** Maintenance Organization. Detachment manning is based on workload, aircraft type, and location of alert detachments. Each detachment maintenance organization shall have a CEM who shall ensure its efficient operation. Management latitude is given to the CEM in recognition of the factors affecting each alert detachment.

18.3.1.2. **(Added-ANG)** Detachment provides for immediate launch, recovery, repair, and service of alert aircraft; on/off support equipment maintenance within capability of assigned personnel, equipment, and facilities.

18.3.1.3. **(Added-ANG)** CEM manages detachment maintenance complex. CEM shall plan, schedule, control, and direct use of all maintenance resources through the development and use of OIs for the following:

18.3.1.3.1. **(Added-ANG)** MSEP and a Self-inspection Program.

18.3.1.3.2. **(Added-ANG)** Safety Program.

18.3.1.3.3. **(Added-ANG)** FOD Program.

18.3.1.3.4. **(Added-ANG)** Munitions Employment/Re-supply Plan.

18.3.1.3.5. **(Added-ANG)** Supply Management

18.3.1.3.6. **(Added-ANG)** Maintenance Training Program

18.3.1.3.7. **(Added-ANG)** Load Crew/Personnel Certification/Qualification Program.

18.3.1.3.8. **(Added-ANG)** Oil Analysis Program

18.3.1.3.9. **(Added-ANG)** Debriefing Program.

18.3.1.3.10. **(Added-ANG)** Calibration Requirements Program

18.3.1.3.11. **(Added-ANG)** Security Programs.

18.3.1.3.12. **(Added-ANG)** Tool and Equipment Control.

18.3.1.3.13. **(Added-ANG)** Impoundment Procedures.

18.3.1.3.14. **(Added-ANG)** EOR Procedures.

18.3.1.3.15. **(Added-ANG)** Emergency Action Procedures.

18.3.1.4. **(Added-ANG)** Additionally, the CEM is responsible for the following:

18.3.1.4.1. **(Added-ANG)** Control assignment and use of maintenance personnel. Ensure all shifts are adequately supervised.

18.3.1.4.2. **(Added-ANG)** Coordinate with detachment Operation activities in establishing maintenance requirements.

18.3.1.4.3. **(Added-ANG)** Ensure requirements to support mission are included in plans, programs, and host-tenant agreements.

18.3.1.4.4. **(Added-ANG)** Control assignment and use of maintenance facilities and equipment.

18.3.1.4.5. **(Added-ANG)** Designate production inspectors.

18.3.1.4.6. **(Added-ANG)** Manage financial program.

18.3.1.4.7. **(Added-ANG)** Liaison between detachment and parent unit.

18.3.1.4.8. **(Added-ANG)** Ensure detachment has required support equipment.

18.3.1.4.9. **(Added-ANG)** If tasked by the MXG/CC, the CEM may serve as the Impoundment Release Authority.

18.3.1.4.10. **(Added-ANG)** Designate an alert training manager.

18.3.1.4.11. **(Added-ANG)** Ensure detachment has required tools and equipment and are controlled IAW **Chapter 10** of this publication.

18.3.1.4.12. **(Added-ANG)** Develop Emergency Action Procedures, e.g. severe weather, hydrazine, hot brakes, hung ordinance.

18.3.1.5. **(Added-ANG)** The Alert section shall consist of selected personnel who have received training to perform preflight, postflight, servicing, launch/recovery, to include arm/dearm of missiles provided the following conditions are met:

18.3.1.5.1. **(Added-ANG)** Complete initial and annual weapons academics and weapons task qualification training using the applicable MDS 33-1-2 procedures and track training in the MIS or WLCMP.

18.3.1.6. **(Added-ANG)** Weapons Training Responsibilities and Load Crew Requirements:

18.3.1.6.1. **(Added-ANG)** Senior most qualified 2W171 at detachment shall be designated by WWM in writing as a member of the parent LSC and must be initially certified/evaluated as a load crew chief by the WWM or designated official.

18.3.1.6.2. **(Added-ANG)** Certification and training of 2W1X1 load crewmembers must be the same as home station standards.

18.3.1.6.3. **(Added-ANG)** Load crew training and certification must be documented and routed to parent unit LSC and returned to the detachment for filing.

18.3.1.6.4. **(Added-ANG)** Initial certification of other crewmembers may be accomplished by parent unit LSC/lead team member. Crewmembers may be used to load in other positions at discretion of load crew chief. Dual certification is authorized.

18.3.1.7. **(Added-ANG)** Other aircraft maintenance personnel may be certified as augmentee loaders IAW **Chapter 12**.

18.3.1.8. **(Added-ANG)** Load crewmembers/load augmentees may accomplish captive missile inspections provided they are qualified to perform these inspections.

18.3.1.9. **(Added-ANG)** At least two assigned 2W1X1s shall be certified as load crew chiefs.

18.3.1.10. **(Added-ANG)** During launch/recovery, alert workcards must be readily available for reference. Readily available means at a minimum, the workcards are on top of the tool box (may be inside for safety/FOD prevention as long as the box is not locked). The work cards will be checked prior to launch and after performance of the Recovery inspection to insure that all items have been accomplished. If transition is made to Thru-Flight, the work cards must be referred to as the Thru-Flight inspection is conducted.

18.3.2. **(Added-ANG)** Home station Alert**.**

18.3.2.1. **(Added-ANG)** Maintenance Organization. Alert manning is based on workload, aircraft type, and location of alert areas. Each maintenance organization shall have an Alert Supervisor who shall ensure its efficient operation. Management latitude is given to the Alert Supervisor in recognition of the factors affecting the alert area.

18.3.2.2. **(Added-ANG)** Alert area provides for immediate launch, recovery, repair, and service of alert aircraft; on/off equipment and support equipment maintenance within the capability of assigned personnel, equipment, and facilities.

18.3.2.3. **(Added-ANG)** Alert Supervisor manages the alert maintenance complex. This shall be the sole responsibility of the Alert Supervisor. Alert Supervisor plans and schedules use of maintenance resources and is responsible for the following:

18.3.2.3.1. **(Added-ANG)** With coordination through the parent unit, QA, ensure alert is included and participates in MSEP and self-inspection program.

18.3.2.3.2. **(Added-ANG)** Control assignment and use of maintenance personnel. Ensure all shifts are adequately supervised.

18.3.2.3.3. **(Added-ANG)** Ensure compliance with established wing safety program.

18.3.2.3.4. **(Added-ANG)** Ensure compliance with established wing FOD program.

18.3.2.3.5. **(Added-ANG)** Ensure requirements to support mission are included in parent unit plans and programs.

18.3.2.3.6. **(Added-ANG)** Establish OIs as required.

18.3.2.3.7. **(Added-ANG)** Develop a munitions Employment/Re-supply Plan.

18.3.2.3.8. **(Added-ANG)** Establish a maintenance training program and designate an alert training manager.

18.3.2.3.9. **(Added-ANG)** Ensure supply management procedures are accomplished.

18.3.2.3.10. **(Added-ANG)** Monitor the load crew/personnel certification/qualification program.

18.3.2.3.11. **(Added-ANG)** Ensure compliance with established wing Oil Analysis Program for assigned equipment.

18.3.2.3.12. **(Added-ANG)** Ensure compliance with established wing debriefing program.

18.3.2.3.13. **(Added-ANG)** Ensure compliance with established wing calibration requirements.

18.3.2.3.14. **(Added-ANG)** Ensure necessary security programs are implemented and followed.

18.3.2.3.15. **(Added-ANG)** Ensure required tools and equipment and are controlled IAW **Chapter 10** of this publication and applicable group OIs.

18.3.2.3.16. **(Added-ANG)** Ensure required support equipment is available.

18.3.2.4. **(Added-ANG)** The Alert section shall consist of selected personnel who have received training to perform preflight, postflight, servicing, launch/recovery, to include arm/dearm of missiles provided the following conditions are met:

18.3.2.4.1. **(Added-ANG)** Complete initial and annual weapons academics and weapons task qualification training using the applicable MDS 33-1-2 procedures and track training in the MIS or WLCMP.

18.3.2.4.2. **(Added-ANG)** During launch/recovery, alert workcards must be readily available for reference. Readily available means at a minimum, the workcards are on top of the tool box (may be inside for safety/FOD prevention as long as the box is not locked). The work cards will be checked prior to launch and after performance of the Recovery inspection to insure that all items have been accomplished. If transition is made to Thru-Flight, the work cards must be referred to as the Thru-Flight inspection is conducted.

18.4. (Added-ANG) Torque Wrench Calibration Site. Units listed in TO 00-20-14 and approved by the **562 CBSG** as a Limited User/Owner Torque Calibration/Repair Capability must ensure torque devices are calibrated per any applicable CMS or TO 33K-1-100-1/2.

18.4.1. **(Added-ANG)** Only approved Torque Calibration Standards or equivalent equipment meeting accuracy requirements as per calibration procedures shall be used to certify torque devices. Torque Calibration Standards must be calibrated by an AFMETCAL program PMEL.

18.4.2. **(Added-ANG)** Only torque devices owned by the organization shall be calibrated on this site. Torque devices beyond the capability of the organization to calibrate, shall be sent to the Unit's supporting PMEL and must be included as part of their PMEL TMDE inventory.

18.4.3. **(Added-ANG)** Ensure all personnel performing torque calibrations have been properly trained. At a minimum, an individual must have had training either by possessing a 2P0X1 AFSC, have attended Torque Wrench Calibration Course # E2RST2P031 002 or have successfully participated in an OJT program.

18.4.4. **(Added-ANG)** Maintain a Certification Roster of all qualified personnel performing torque calibrations.

18.4.5. **(Added-ANG)** Ensure there is a capability (Chart Recorder) to monitor and record the environment in the calibration area. The torque calibrator/standard must be maintained at a temperature of 73°F ± 9°F during the 24 hour period prior to the torque devices being calibrated. Torque devices have specific "soak' time requirements as per TO 33K procedures. The requirement for Relative Humidity (RH) between 15 and 70 percent applies only while the actual calibration procedure is being performed. Environmental charts shall be retained from the date of the last AFMETCAL on-site assessment.

18.4.6. **(Added-ANG)** Ensure a complete inventory of all torque devices calibrated at unit level is maintained current.

18.4.7. **(Added-ANG)** The Torque Calibration Site supervisor must develop an internal QP specifically tailored to the torque calibration function. At a minimum, establish a process to randomly select three percent of the completed monthly calibrations (but not less than two certified torque devices per month) for a Quality Review (QR) and every six months accomplish a Process Review (PR) on each qualified technician. The QR is an internal inspection where a separate qualified technician re-accomplishes the calibration on a recently certified torque device prior to it leaving the calibration area and returning it to the customer. The PR is an internal review where a separate qualified technician observes the overall process in action; including training/qualifications, documentation, calibration standard status, and technical data. The supervisor shall manage the internal Quality Program and

maintain a log/record of all QRs/PRs. Supervision shall initial or sign the log/record when findings result in failure and initiate corrective action as necessary. The log/record must be maintained for a minimum of two years. **NOTE:** Authority for User Torque Calibration and Repair Sites expires when user organizations are redesignated, inactivated, reassigned, or on 30 September 2011; whichever comes first. Affected user organizations shall use AFI 25-201, *Interservice Support Agreements*, to acquire support for their total torque-indicating device workload (workload currently on hand and, when applicable, transferred workload).

18.4.8. **(Added-ANG)** Torque Calibration Sites shall be subject to biennial evaluations by the 562 CBSG.

18.5. (Added-ANG) Forward Operating Location (FOL), Fort Drum, New York. The mission of this unit is to provide effective combat readiness training to all Northeast CAF units for all aspects of maintenance, support, and aircrew combat training pertaining to live ordinance training. Additionally the FOL produces sorties for Northeast CAF units without the need for the using unit to deploy their personnel. FOL personnel shall perform thruflight, launch, recovery, minor repair, and service of deployed aircraft, on/off equipment maintenance and support equipment maintenance within the capability of assigned personnel, equipment, and facilities. Personnel shall also be tasked to load specific munitions items once designated by Detachment Commander, (DETCO) and task certified. Cross utilization training is used exclusively by the detachment as prescribed by this instruction.

18.5.1. **(Added-ANG)** Maintenance Organization. Maintenance Management latitude is given to the Pro Super. Detachment manning based on assigned equipment, scheduled sorties, and available facilities at the detachment. Unit's schedule sorties through the Pro Super that are within the capabilities of assigned personnel. The Pro Super shall manage, schedule, plan, control, and direct the use of all maintenance resources and be responsible for the following:

18.5.1.1. **(Added-ANG)** Ensure a quality assessment program is developed.

18.5.1.2. **(Added-ANG)** Control the assignment and use of maintenance personnel. Ensure all work shifts are adequately manned.

18.5.1.3. **(Added-ANG)** Coordinate with the range facility on the monthly schedule of aircraft that shall utilize the FOL.

18.5.1.4. **(Added-ANG)** Control assignment and use of facilities and equipment at the detachment.

18.5.1.5. **(Added-ANG)** Administer the detachment Safety program.

18.5.1.6. **(Added-ANG)** Ensure supply management procedures are accomplished.

18.5.1.7. **(Added-ANG)** Monitor the detachment Load Crew Training program as follows:

18.5.1.7.1. **(Added-ANG)** Ensure the 174th WWM appoints the detachment weapons load crew by letter as an LSC.

18.5.1.7.2. **(Added-ANG)** Ensure the detachment LSC maintains certification as outlined in **Chapter 12** of this instruction.

18.5.1.7.3. **(Added-ANG)** Ensure the detachment LSC is certified under a TTML jointly developed with the units it services.

18.5.1.8. **(Added-ANG)** Establish an Oil Analysis Program.

18.5.1.9. **(Added-ANG)** Establish a Maintenance Training Program.

18.5.1.10. **(Added-ANG)** Manage the detachment Financial Management program.

18.5.1.11. **(Added-ANG)** Monitor and coordinate requirements to support the maintenance mission and include the plans, programs, and host-tenant agreements.

18.5.1.12. **(Added-ANG)** Control the Hot Refueling program.

18.5.1.13. **(Added-ANG)** Provide liaison between the detachment, deploying unit MXG personnel, and Fort Drum, NY personnel. Provide support in nationally recognized Global Exercises with all flying units and support units that are deployed to Fort Drum, NY.

18.5.1.14. **(Added-ANG)** Develop and administer a FOD program for the detachment.

18.5.1.15. **(Added-ANG)** Ensure TMDE is calibrated IAW TO 00-20-14.

18.5.1.16. **(Added-ANG)** Work in conjunction with Detachment Commander to ensure maintenance activities are within the means of assigned personnel.

18.5.1.17. **(Added-ANG)** Ensure an effective CTK and Bench Stock System is utilized.

18.5.1.18. **(Added-ANG)** Assign vehicle control officers for assigned government vehicles at detachment.

18.5.1.19. **(Added-ANG)** Establish ADPE account for detachment. Ensure a LAN system is established with assigned unit for effective accountability of assigned equipment, CAS, and personnel and to ensure effective communications is established with host unit and National Guard Bureau (NGB).

18.5.1.20. **(Added-ANG)** Develop and publish necessary OIs.

18.5.1.21. **(Added-ANG)** Develop a program for accountability of all munitions and fuels that are utilized at the attachment. Units utilizing the FOL for live ordnance training must coordinate with detachment personnel for all flying activities.

18.5.2. **(Added-ANG)** The Detachment Commander shall authorize production inspectors.

18.6. (Added-ANG) Combat Readiness Training Centers (CRTCs). Training Centers have ground support equipment and maintenance shop facilities IAW AFMAN 91-201; Paragraph 6.12.1. Ensure applicable site plans and maps are maintained within the flight to be used by deployed forces. These forces need the use of CRTC bases and gunnery ranges for short term exercises and annual deployments. CRTC personnel maintain the support equipment and facilities and do not have aircraft or maintenance personnel for direct support of the deployed unit. Deployed units operate under their own management procedures.

18.6.1. **(Added-ANG)** The CRTC has shops and equipment needed to support limited maintenance. Once issued to the deployed unit, the maintenance of the support equipment and operation of the shops is the responsibility of the deployed unit. However, the responsibility for the assigned equipment remains with the CRTC.

18.6.2. **(Added-ANG)** The CRTC is organized as a consolidated maintenance function. Due to its small size, several management functions may be assigned to one individual. CRTC personnel shall not be integrated into the organization of deployed units. The CRTC remains a separate and independent function.

18.6.3. **(Added-ANG)** The Maintenance Superintendent and/or Chief Enlisted Manager (CEM) for the CRTC shall establish management procedures following the guidelines of this publication. The Maintenance Superintendent/Enlisted Manager shall:

18.6.3.1. **(Added-ANG)** Publish necessary OIs/supplements.

18.6.3.2. **(Added-ANG)** Publish a directive with responsibilities and requirements for the CRTC and deployed units.

18.6.3.3. **(Added-ANG)** Ensures deployed unit maintenance supervisors are briefed as a minimum on their responsibilities for the use of the facilities, safety, equipment and their relationship to the CRTC.

18.6.3.4. **(Added-ANG)** Ensure deployed units use their own supply support to the maximum extent possible.

18.6.3.5. **(Added-ANG)** Ensure assigned support equipment and facilities are maintained.

18.6.3.6. **(Added-ANG)** Ensure supply discipline by assigned personnel.

18.6.3.7. **(Added-ANG)** Ensures compliance with FOD program.

18.6.3.8. **(Added-ANG)** Oversees the CRTC maintenance safety program.

18.6.3.9. **(Added-ANG)** Establish a quality assessment program.

18.6.4. **(Added-ANG)** Quality Assurance Overview: The primary role of the CRTC QA is to identify areas of concern by determining the maintainability of aircraft, equipment condition, and personnel proficiency and training through the process of inspections and evaluations. It is understood that quality must be built into any system or operating methodology up front. CRTC shall use the ANG QuAD for documenting QA evaluations.

18.6.5. **(Added-ANG)** Maintenance Standardization Evaluation Program (MSEP): The MSEP emphasizes compliance-oriented maintenance. The purpose of the MSEP is to measure how well units meet or exceed standards. ANG CRTC MSEP focus areas are:

18.6.5.1. **(Added-ANG)** Compliance and Currency of Technical Orders and Directives.

18.6.5.2. **(Added-ANG)** Equipment Forms Documentation.

18.6.5.3. **(Added-ANG)** Aircraft and Equipment Inspection.

18.6.5.4. **(Added-ANG)** Compliance and Management of Safety, Environmental, and Housekeeping Programs.

18.6.5.5. **(Added-ANG)** Adequacy, Currency, and Validity of Training.

18.6.5.6. **(Added-ANG)** Personnel Proficiency. **NOTE**: QA shall make recommendations for increasing maintenance effectiveness and is available for involvement in process improvement. QA offers on-the-spot assistance and in-depth investigations to find appropriate corrective action to identified problem areas.

18.6.6. **(Added-ANG)** Quality Assurance training for CRTCs: In an effort to enhance continuity and communication within the QA program the dedicated instructor course shall be utilized to the maximum extent possible. Due to manning situations, the Director of Logistics (LG) or Director of Operations (OG) of the CRTC shall appoint a Chief Inspector as an additional duty and attendance to the

formal QA inspector training course is recommended. Since the functional areas are not manned to support a full-time position in QA, selected qualified technicians may be assigned as augmentees. Document augmentee training on AF IMT 797 or MIS.

18.6.6.1. **(Added-ANG)** Evaluator Proficiency Evaluation (EPE). An over the shoulder evaluation of a QA inspector while performing a personnel evaluation and technical inspection. An EPE is required for initial qualification of QA inspectors and augmentees. Augmentees shall require annual re-certification.

18.6.7. **(Added-ANG)** Quality Assurance Routine Inspection List (RIL): The number of inspections are forecasted but, due to manning or unit mission demand during the specified time period, it may not be possible for QA to accomplish 100 percent of the targeted tasks. The list, as contained in **Table 18.1. (Added)**, CRTC Routine Inspection List (RIL), shall contain but is not limited to the following:

18.6.7.1. **(Added-ANG)** Equipment forms/MIS documentation.

18.6.7.2. **(Added-ANG)** Aircraft ground handling and servicing tasks.

18.6.7.3. **(Added-ANG)** Technical data use and currency.

18.6.7.4. **(Added-ANG)** CTK management.

18.6.7.5. **(Added-ANG)** Housekeeping/Safety.

18.6.7.6. **(Added-ANG)** Vehicles (including AF IMT 244 and 1800).

18.6.7.7. **(Added-ANG)** Environmental Compliance.

18.6.7.8. **(Added-ANG)** AGE maintenance.

18.6.7.9. **(Added-ANG)** Munitions Material, Support and test equipment.

18.6.7.10. **(Added-ANG)** Munitions Inspections.

18.6.7.11. **(Added-ANG)** Munitions Storage Practices and Safety.

18.6.7.12. **(Added-ANG)** Munitions Accountability.

18.6.7.13. **(Added-ANG)** Munitions Stockpile.

18.6.7.14. **(Added-ANG)** Munitions Control 2000 (MC2K).

Table 18.1. (Added-ANG) CRTC Routine Inspection List (RIL).

MAINTENANCE	AQL	TYPE	REQUIREMENT
Aircraft and Equipment forms	3	SI	Two per quarter
Aircraft ground handling and servicing tasks	3	SI	Two semi-annually
Technical data use and currency	2	SI	One per quarter
CTK management	4	SI	Six annually
AGE flight line use	3	QVI	One per quarter
Housekeeping	4	SI	One per quarter
Vehicles (including AF IMT 1800 and 1806)	2	SI	One per quarter
Aircraft launch/recovery procedures	2	QVI	Two semi-annually
EOR procedures	2	QVI	Two semi-annually
Shop support equipment (including AF IMT 244)	2	SI	Two annually
Foreign Object Damage (FOD)	2	SI	One per quarter
AGE Maintenance Powered (Periodic)	2	SI	One per quarter
AGE Maintenance Powered (Annual/Special)	2	SI	One per quarter
AGE Maintenance Non-Power (Periodic)	2	SI	One per quarter
AGE Maintenance Non-Power (Annual/Spec)	2	SI	One per quarter
MUNITIONS			
Munitions Accountability	2	SI	One per quarter
Storage Practices and Safety	2	SI	Semi-annually
Material, Support and Test Equipment	2	QVI	Semi-annually
Munitions Stockpile Management	3	SI	One per quarter
Munitions Control 2000 (MC2K)	2	SI	One per quarter
Munitions Inspections	2	QVI	Semi-annually
Housekeeping Practices	2	SI	One per quarter
Vehicles	2	SI	One per quarter
CTK management	3	SI	One per quarter

NOTE: Items that are semi-annually are due to Alpena/Volk Field CRTC seasonal traffic.

18.6.8. **(Added-ANG)** Quality Assurance Program Quarterly Summary: Provides information for senior level management. Data profile for the Quarterly Summary is a compilation of the Quality control reports for the quarter.

18.6.9. **(Added-ANG)** Technical Order Distribution Office (TODO): TO 00-5-1 explains the procedures of ATOMS including filing, distributing, posting, ordering, establishing Local Checklists, Work cards, and Job Guides. The TODO is the unit point of contact for Technical Orders, inspects the TODAs in the maintenance complex at least annually, and performs spot checks of TO files.

18.6.10. **(Added-ANG)** Discrepancy Categories (Refer to **Chapter 8**).

18.6.11. **(Added-ANG)** MSEP Grading. Units must grade their MSET evaluations IAW **Chapter 8**. Inspectors/assessors rate each inspection based on whether the end product meets the established AQL. The AQL is the maximum number of minor discrepancies allowed in order to meet an established quality level.

18.6.12. **(Added-ANG)** Inspection Routing.

18.6.12.1. **(Added-ANG)** Routing Passed Inspections: All inspections rated pass are routed to all offices as needed and shall require no response unless directed locally. Maintenance Superintendent/CEM shall maintain access to the ANG QuAD database for reports reviews and analysis.

18.6.12.2. **(Added-ANG)** Routing Failed Inspections: All failed evaluations/inspections require a response from the section supervisor within five workdays from the receipt of the notice via e-mail. The Maintenance Superintendent/CEM forwards the report to the applicable Group commander or designated representative. Suspense for subsequent reviewing is three working days.

18.6.13. **(Added-ANG)** Personnel Evaluations (PE): A PE is an over-the-shoulder evaluation of a maintenance action or inspection by an individual or team. The purpose of the PE is to evaluate technician/supervisor job proficiency, degree of training, and compliance with technical data. Individuals performing, supervising, or evaluating maintenance tasks are subject to a PE. QA Inspectors shall brief individuals on results of the evaluation prior to leaving. Evaluations do not replace supervisor/manager responsibility of ensuring a well-trained, technically proficient work force.

18.6.13.1. **(Added-ANG)** Individual Evaluation: A QA over-the-shoulder evaluation of a maintenance technician or supervisor while actually performing a task. The evaluator may start or stop the task evaluation at any step. PEs may be performed on individuals working alone or while working as part of a team. Evaluations must accurately assess the proficiency of each individual under evaluation. Team Evaluation: A QA over-the-shoulder evaluation of maintenance supervisors and technicians completing a team task. A team task is one requiring more than one person (according to approved technical data) to complete the task. For example, refueling, towing, etc.

18.6.14. **(Added-ANG)** Rating Personnel Evaluations: QA rates each evaluation based on AQLs/standards. A failed PE rating means the specific task was not performed within established AQL/standards. The rating applies only to the specified task evaluated and not to other tasks that a technician or supervisor is qualified to perform. Upon completion of a failed evaluation, the evaluator must provide on-the-spot feedback or training.

18.6.14.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.14.1.1. **(Added-ANG)** Technician fails to detect a major discrepancy while complying with an inspection or work card requirement.

18.6.14.1.2. **(Added-ANG)** Technician fails to comply with a step of prescribed technical data that could affect the performance of the equipment involved or cause injury to personnel.

18.6.14.1.3. **(Added-ANG)** Technician demonstrates a lack of technical proficiency or system knowledge, or training is not documented.

18.6.14.1.4. **(Added-ANG)** Technician commits a safety violation.

18.6.14.1.5. **(Added-ANG)** Technician fails to document maintenance actions in appropriate equipment records.

18.6.14.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.14.2.1. **(Added-ANG)** Documentation errors.

18.6.14.2.2. **(Added-ANG)** Deviation from tech data without advising evaluator.

18.6.15. **(Added-ANG)** Quality Verification Inspection (QVI): A QVI is an inspection of equipment conditions following a maintenance inspection or repair action and verifies that a technician or supervisor properly completed the inspection or repair action. The QVI report reflects deficiencies by the individual who accomplished the task and identifies specific discrepancies. Discrepancies are documented in active equipment records and forms (i.e., AFTO Forms 781A or AFTO Form 244).

18.6.16. **(Added-ANG)** Rating Quality Verification Inspections.

18.6.16.1. **(Added-ANG)** Major Discrepancies: Category I and II major discrepancies are findings that indicate the weapon system, support system, or support equipment are considered unsafe for flight or use. Weapons system or equipment is not flown or used until unsatisfactory discrepancy is corrected. A major discrepancy results in a failed inspection.

18.6.16.2. **(Added-ANG)** Minor Discrepancies: Unsatisfactory condition that does not warrant aircraft grounding or discontinuing use of equipment. Refer to the TEC and AQL/Standards for the total number of minor points allowed to determine a pass rating.

18.6.17. **(Added-ANG)** Special Inspections (SI): SIs are inspections not covered by Quality Verification Personnel, and Management Inspections. SIs may include, but are not limited to, aircraft and equipment forms inspections, CTK, TO files, vehicle inspections, housekeeping, safety practices, FOD program, etc. These inspections may be condition or procedural compliance oriented. Known and suspected problem areas must be targeted by the use of SIs. Other areas shall continue to be inspected on a sampling basis.

18.6.17.1. **(Added-ANG)** Rating Special Inspections: SIs must be rated pass or fail based on established AQL/standard. SIs can be non-rated (i.e., courtesy inspection of jacket file, etc.).

18.6.18. **(Added-ANG)** Transient Alert.

18.6.18.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.18.1.1. **(Added-ANG)** Erasure of a symbol by CRTC personnel.

18.6.18.1.2. **(Added-ANG)** Red X discrepancies not properly documented.

18.6.18.1.3. **(Added-ANG)** Tool inventory not completed.

18.6.18.1.4. **(Added-ANG)** Exceptional Release entry not cleared prior to flight.

18.6.18.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.18.2.1. **(Added-ANG)** Signature, employee number, rank/grade improperly entered.

18.6.18.2.2. **(Added-ANG)** Vehicle 1800 not signed and or vehicle dirty.

18.6.18.2.3. **(Added-ANG)** FOD check not performed before aircraft arrival.

18.6.19. **(Added-ANG)** Aerospace Ground Equipment: Equipment is inspected for obvious defects, irregularities affecting operation, and AFTO IMT/Form 244, *Industrial/Support Equipment Record*, documentation. Emphasis is placed on serviceability of equipment.

18.6.19.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.19.1.1. **(Added-ANG)** AFTO Form 244 missing.

18.6.19.1.2. **(Added-ANG)** Discrepancies noted rendering equipment unserviceable (RED X).

18.6.19.1.3. **(Added-ANG)** Notable flammable fluid leak.

18.6.19.1.4. **(Added-ANG)** Power-on check failure (after Periodic Inspection).

18.6.19.1.5. **(Added-ANG)** Work cards not on hand if applicable.

18.6.19.1.6. **(Added-ANG)** Lanyard broken or missing.

18.6.19.1.7. **(Added-ANG)** Supervisor review of forms not complied with per TO 00 series.

18.6.19.1.8. **(Added-ANG)** Inspection due but not entered on AFTO Form 244.

18.6.19.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.19.2.1. **(Added-ANG)** Cleanliness.

18.6.19.2.2. **(Added-ANG)** Documentation errors in AFTO Form 244.

18.6.19.2.3. **(Added-ANG)** Fluid levels/lube not IAW Technical Data.

18.6.19.2.4. **(Added-ANG)** Markings not IAW Technical Data.

18.6.19.2.5. **(Added-ANG)** Minor corrosion/cracks.

18.6.19.2.6. **(Added-ANG)** Required reflective tape and/or bumper padding missing.

18.6.19.2.7. **(Added-ANG)** Identification markings ambiguous.

18.6.20. **(Added-ANG)** Bench Stock:

18.6.20.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.20.1.1. **(Added-ANG)** Label missing.

18.6.20.1.2. **(Added-ANG)** Shadow board not properly maintained (if used).

18.6.20.1.3. **(Added-ANG)** Pilferable items not safeguarded.

18.6.20.1.4. **(Added-ANG)** Precious metal recoverable container not secured.

18.6.20.1.5. **(Added-ANG)** Deleted items still in original bin.

18.6.20.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.20.2.1. **(Added-ANG)** Co-mingled bench stock.

18.6.20.2.2. **(Added-ANG)** Indicators missing if applicable (shelf life, precious metals, etc.).

18.6.20.2.3. **(Added-ANG)** Out dated S04, Master Inventory.

18.6.20.2.4. **(Added-ANG)** Shop Stock not properly sub-located.

18.6.20.2.5. **(Added-ANG)** Sub-located items not referencing original bins.

18.6.21. **(Added-ANG)** Composite Tool Kit (CTK)/Special Tools: Inspections are performed IAW **Chapter 13**.

18.6.21.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.21.1.1. **(Added-ANG)** Annual inventory not accomplished.

18.6.21.1.2. **(Added-ANG)** Unserviceable tools.

18.6.21.1.3. **(Added-ANG)** CTK Inventory does not match contents of toolbox.

18.6.21.1.4. **(Added-ANG)** CTK sign-in/sign-out not accomplished.

18.6.21.1.5. **(Added-ANG)** Overdue inspection of tools requiring calibration/inspection.

18.6.21.1.6. **(Added-ANG)** Tool not shadowed or no longer in use.

18.6.21.1.7. **(Added-ANG)** Tools improperly etched (illegibly marked, no etching, double etched, does not match box).

18.6.21.1.8. **(Added-ANG)** Tool missing and not documented.

18.6.21.1.9. **(Added-ANG)** Torque wrench not set at lowest setting when stored.

18.6.21.1.10. **(Added-ANG)** Count of all dispatchable CTKs and equipment not performed at beginning and end of each shift.

18.6.21.1.11. **(Added-ANG)** Foreign object found in CTK.

18.6.21.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.21.2.1. **(Added-ANG)** Damaged but serviceable.

18.6.21.2.2. **(Added-ANG)** Foam padding or shadow deteriorated to the point affecting the shadow of the tool.

18.6.21.2.3. **(Added-ANG)** Minor corrosion.

18.6.21.2.4. **(Added-ANG)** Minor CTK Inventory documentation errors.

18.6.22. **(Added-ANG)** Foreign Object Inspections: Inspections are performed on parking ramps along the flight line, hangars, work areas, facilities, aircraft, and equipment.

18.6.22.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.22.1.1. **(Added-ANG)** Failure to comply with FOD prevention directives.

18.6.22.1.2. **(Added-ANG)** Failure to empty F.O. containers on a daily basis.

18.6.22.1.3. **(Added-ANG)** Failure to install protective covers on ducts, tubes, hoses, leads, intakes, etc., to prevent FOD.

18.6.22.1.4. **(Added-ANG)** Failure to wear proper attire when entering an engine intake.

18.6.23. **(Added-ANG)** Housekeeping: Inspections are accomplished IAW AFOSH 91-100. This inspection shall evaluate the cleanliness/safety of offices and work areas. Housekeeping during and following maintenance is considered. **NOTE**: For Munitions Storage Areas; in addition to the above mentioned areas, there must be inspections performed IAW AFMAN 91-201.

18.6.23.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.):

18.6.23.1.1. **(Added-ANG)** Any obstacles in passageway compromising safety and travel.

18.6.23.1.2. **(Added-ANG)** Fire extinguisher inspection overdue, under serviced, or unserviceable.

18.6.23.1.3. **(Added-ANG)** Fire hazard or improperly stowed flammable material.

18.6.23.1.4. **(Added-ANG)** Self-closing lids not used for combustible waste, rags, etc.

18.6.23.1.5. **(Added-ANG)** Spills left on floor causing a potential safety hazard.

18.6.23.1.6. **(Added-ANG)** Electrical cords and compressed air lines not stowed.

18.6.23.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.23.2.1. **(Added-ANG)** Garbage containers not emptied on a routine basis.

18.6.23.2.2. **(Added-ANG)** Trash and buildup of dirt on office or work area floors.

18.6.24. **(Added-ANG)** Shop Support Equipment/Test Equipment: Inspections are performed IAW guidelines in applicable Technical Data and service manuals to determine serviceability.

18.6.24.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.24.1.1. **(Added-ANG)** Overdue inspections.

18.6.24.1.2. **(Added-ANG)** Calibrated Inspection overdue.

18.6.24.1.3. **(Added-ANG)** Missing AFTO Forms 244/245.

18.6.24.1.4. **(Added-ANG)** Bare power cords or wiring on equipment.

18.6.24.1.5. **(Added-ANG)** Defect affecting serviceability.

18.6.24.1.6. **(Added-ANG)** Equipment parts missing.

18.6.24.1.7. **(Added-ANG)** Connector Pins corroded/bent/recessed/broke.

18.6.24.1.8. **(Added-ANG)** Hoses left uncapped.

18.6.24.1.9. **(Added-ANG)** Missing guards on flywheels, pulleys, etc.

18.6.24.1.10. **(Added-ANG)** Overrated fuses installed in equipment.

18.6.24.1.11. **(Added-ANG)** Leaks.

18.6.24.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.24.2.1. **(Added-ANG)** Minor corrosion.

18.6.24.2.2. **(Added-ANG)** Minor cracks.

18.6.24.2.3. **(Added-ANG)** Cleanliness.

18.6.24.2.4. **(Added-ANG)** Documentation errors in AFTO Forms 244/245.

18.6.24.2.5. **(Added-ANG)** Documentation errors on PMEL Tags resulting in identification errors.

18.6.25. **(Added-ANG)** Technical Order File: Inspections of Technical Order Files are accomplished by the TODO. QA shall perform spot inspections on the Technical Orders.

18.6.25.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.25.1.1. **(Added-ANG)** Changes, Supplements, Technical Order Page Supplements (TOPS), etc., not filed within 5 working days.

18.6.25.1.2. **(Added-ANG)** Deleted pages not removed from tech data.

18.6.25.1.3. **(Added-ANG)** List of Effective Pages (LEP) overdue/not accomplished.

18.6.25.1.4. **(Added-ANG)** Missing pages in Technical Data.

18.6.25.1.5. **(Added-ANG)** Incorrectly filing Supplements, TOPS, changes, etc.

18.6.25.1.6. **(Added-ANG)** Supplements not annotated against the affected paragraph.

18.6.25.1.7. **(Added-ANG)** TOs missing from files (unaccounted for).

18.6.25.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.25.2.1. **(Added-ANG)** Technical Order Binder Labels improperly completed.

18.6.25.2.2. **(Added-ANG)** Requisition follow-up overdue.

18.6.25.2.3. **(Added-ANG)** Title page not properly annotated.

18.6.25.2.4. **(Added-ANG)** Unserviceable TO binder.

18.6.26. **(Added-ANG)** Vehicle: Inspections are accomplished IAW AFI 24-301 VOL I, AFI 24-302, and the applicable vehicle inspection card. The inspection shall evaluate the overall condition of each assigned vehicle to determine operational capability.

18.6.26.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.26.1.1. **(Added-ANG)** Battery level low (core exposed).

18.6.26.1.2. **(Added-ANG)** Daily inspection not accomplished.

18.6.26.1.3. **(Added-ANG)** Fire bottle unserviceable.

18.6.26.1.4. **(Added-ANG)** Hazardous material left in vehicle.

18.6.26.1.5. **(Added-ANG)** Major fluid leak.

18.6.26.1.6. **(Added-ANG)** Gear belts missing or inoperative.

18.6.26.1.7. **(Added-ANG)** Tire worn below wear marks/flat.

18.6.26.1.8. **(Added-ANG)** Undocumented damage rendering the vehicle unserviceable.

18.6.26.1.9. **(Added-ANG)** Any inoperative light listed in checklist under Major.

18.6.26.1.10. **(Added-ANG)** Low fluid level.

18.6.26.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.26.2.1. **(Added-ANG)** Battery terminal clamps loose or corroded.

18.6.26.2.2. **(Added-ANG)** Loose/worn belts.

18.6.26.2.3. **(Added-ANG)** Low tire pressure not within plus or minus 10 PSI.

18.6.26.2.4. **(Added-ANG)** Any lights inoperative not listed under Major.

18.6.26.2.5. **(Added-ANG)** Windshield wiper worn.

18.6.26.2.6. **(Added-ANG)** Minor undocumented fuel/oil/coolant leaks.

18.6.27. **(Added-ANG)** Munitions Accountability: Inspections are accomplished IAW AFI 21-201. This inspection shall evaluate the overall inventory/ accountability processes and supporting documentation.

18.6.27.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.27.1.1. **(Added-ANG)** Stock balance discrepancies.

18.6.27.1.2. **(Added-ANG)** Not accomplished or incomplete inventories.

18.6.27.1.3. **(Added-ANG)** Supporting documentation and or required signatures/information missing.

18.6.27.1.4. **(Added-ANG)** Missing or outdated documents of authorization.

18.6.27.1.5. **(Added-ANG)** MASO not appointed by proper authority.

18.6.27.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.27.2.1. **(Added-ANG)** Missing required stamp(s).

18.6.27.2.2. **(Added-ANG)** Missing transaction number.

18.6.27.2.3. **(Added-ANG)** Document filed in wrong sequence.

18.6.28. **(Added-ANG)** Munitions Storage Practices and Safety: Inspections are accomplished IAW AFMAN 91-201 and AFI 21-201. This inspection shall evaluate the overall storage practices/movement processes and safety.

18.6.28.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.28.1.1. **(Added-ANG)** Improper storage of hazard classes/groups (compatibility).

18.6.28.1.2. **(Added-ANG)** Exceeding NEW for storage location.

18.6.28.1.3. **(Added-ANG)** Improper packaging.

18.6.28.1.4. **(Added-ANG)** Wrong condition code marked on item.

18.6.28.1.5. **(Added-ANG)** Unserviceable assets not segregated from serviceable.

18.6.28.1.6. **(Added-ANG)** Custody account assets not identified properly.

18.6.28.1.7. **(Added-ANG)** Custody account assets not segregated/stored properly.

18.6.28.1.8. **(Added-ANG)** Assets not stored with more than normal lot-to-lot separation.

18.6.28.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.28.2.1. **(Added-ANG)** Improper use of dunnage.

18.6.28.2.2. **(Added-ANG)** Missing/or improperly annotated location markers.

18.6.28.2.3. **(Added-ANG)** Missing seal.

18.6.28.2.4. **(Added-ANG)** Improper container markings or missing information i.e., NSN, DODIC, Qty, etc.

18.6.28.2.5. **(Added-ANG)** Movement control procedures not properly adhered to or missing documentation.

18.6.28.2.6. **(Added-ANG)** Crew briefings not accomplished prior to explosive operation.

18.6.29. **(Added-ANG)** Munitions Material, Support and Test Equipment: Inspections are accomplished IAW Item TO.

18.6.29.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.):

18.6.29.1.1. **(Added-ANG)** Overdue inspections.

18.6.29.1.2. **(Added-ANG)** Missing AFTO Forms 244/245.

18.6.29.1.3. **(Added-ANG)** Bare power cords or wiring on equipment.

18.6.29.1.4. **(Added-ANG)** Defect affecting serviceability.

18.6.29.1.5. **(Added-ANG)** Equipment parts missing.

18.6.29.1.6. **(Added-ANG)** Connector Pins corroded/bent/recessed/broke.

18.6.29.1.7. **(Added-ANG)** Hoses left uncapped.

18.6.29.1.8. **(Added-ANG)** Missing guards on flywheels, pulleys, etc.

18.6.29.1.9. **(Added-ANG)** Overrated fuses installed in equipment.

18.6.29.1.10. **(Added-ANG)** Overdue calibration inspection.

18.6.29.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.29.2.1. **(Added-ANG)** Minor corrosion.

18.6.29.2.2. **(Added-ANG)** Minor cracks.

18.6.29.2.3. **(Added-ANG)** Cleanliness.

18.6.29.2.4. **(Added-ANG)** Documentation errors in AFTO Forms 244/245.

18.6.29.2.5. **(Added-ANG)** Leaks.

18.6.30. **(Added-ANG)** Munitions Stockpile: Inspections are accomplished IAW Item TO and AFI 21-201.

18.6.30.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.30.1.1. **(Added-ANG)** Allocations not properly forecasted.

18.6.30.1.2. **(Added-ANG)** Assets issued without allocation.

18.6.30.1.3. **(Added-ANG)** Missing courtesy storage agreement.

18.6.30.1.4. **(Added-ANG)** Failure to notify customer/custodians of restricted/suspended issued assets.

18.6.30.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.30.2.1. **(Added-ANG)** Failure to report/identify excess assets to ANG.

18.6.30.2.2. **(Added-ANG)** Not receiving assets on accountable records within five workdays.

18.6.30.2.3. **(Added-ANG)** Did not update shipment in-transit information in CAS.

18.6.31. **(Added-ANG)** Munitions Control 2000 (MC2K): Inspection is IAW this publication and AFI 21-201. Work order program, equipment records, facility records, and fire symbol/hazard class division information.

18.6.31.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.31.1.1. **(Added-ANG)** Work orders not being input/reviewed and updated (IMDS, G081 or MC2K).

18.6.31.1.2. **(Added-ANG)** Equipment form information not being updated (AFTO Form 244).

18.6.31.1.3. **(Added-ANG)** Equipment information loaded in error, i.e., serial number, model etc.

18.6.31.1.4. **(Added-ANG)** Fire symbol log not updated.

18.6.31.1.5. **(Added-ANG)** Explosive limits loaded in error in CAS.

18.6.31.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.31.2.1. **(Added-ANG)** Work orders missing information.

18.6.31.2.2. **(Added-ANG)** AWM/AWP information missing or incomplete, i.e., supply document number, etc.

18.6.32. **(Added-ANG)** Munitions Inspection: Inspection is IAW Item TO and AFI 21-201. Inspection processes that ensure a qualified appointed munitions inspector and a program that dictates proper tagging, marking, packing and serviceability of munitions assets.

18.6.32.1. **(Added-ANG)** Major Discrepancies: (Listed below are examples but not limited to.).

18.6.32.1.1. **(Added-ANG)** Inspections not being accomplished as required (PI, SI, SII, SMI, etc.).

18.6.32.1.2. **(Added-ANG)** Senior Munitions Inspector not properly appointed.

18.6.32.1.3. **(Added-ANG)** Munitions Inspectors not properly trained/re-certified.

18.6.32.1.4. **(Added-ANG)** Missing authorization letters for appointment of residue/Demil certified inspectors.

18.6.32.1.5. **(Added-ANG)** Shelf/Service Life not being monitored.

18.6.32.2. **(Added-ANG)** Minor Discrepancies: (Listed below are examples but not limited to.).

18.6.32.2.1. **(Added-ANG)** General Inspection Procedures not adhered to.

18.6.32.2.2. **(Added-ANG)** AF IMT 102s not filled out properly.

18.6.32.2.3. **(Added-ANG)** 12 months of AF IMT 102s not on file.

18.6.32.2.4. **(Added-ANG)** Lot history info not updated.

18.6.33. **(Added-ANG)** Management Inspection (MI): MIs cover a broad category. This inspection is used to follow up on trends, conduct investigations, or conduct research to identify the root of problems. Inspections are performed when directed/requested by the Group Commander, QA or work cen-

ter supervisors. MIs may encompass PE/QVI trends and other inspection data, NMC causes, aborts and trends, in-flight emergency trends, high component or system failure rates, suspected training deficiencies, and tasks outlined in aircraft Dash 6 technical orders. MI inspection results are reported to the requester. MIs can be non-rated and may be used to identify negative trends.

18.6.34. **(Added-ANG)** Safety and Technical Violations: QA, upon observing conditions, must stop task and note infractions.

18.6.34.1. **(Added-ANG)** Detected Safety Violation (DSV): An unsafe act by an individual observed by the Quality Assurance. A DSV is not documented on an individual undergoing a personnel evaluation since the unsafe act automatically results in a fail rating on the PE.

18.6.34.2. **(Added-ANG)** Technical Data Violation (TDV): Maintenance performed without the use of technical data and observed by Quality Assurance. When an individual fails to utilize tech data during a PE, it is a failure of the evaluation and not addressed as a TDV.

18.6.34.3. **(Added-ANG)** Unsatisfactory Condition Report (UCR): An unsafe condition other than a DSV. The UCR is charged to the work center supervisor. Discrepancies are documented as a UCR when it is not possible to determine who created the condition.

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFOSHSTD 48-8, Controlling Exposures to Hazardous Materials

AFOSHSTD 48-9, Radio Frequency Radiation (RFR) Safety Program

AFOSHSTD 48-20, Occupational Noise and Hearing Conservation Program

AFOSHSTD 48-101, Aerospace Medicine Operations

AFOSHSTD 48-137, Respiratory Protection Program

AFOSHSTD 91-5, Welding, Cutting and Brazing

AFOSHSTD 91-17, Interior Spray Painting

AFOSHSTD 91-25, Confined Spaces

AFOSHSTD 91-38, Hydrocarbon Fuels General

AFOSHSTD 91-50, Communications Cable, Antenna and Communications Electronic (C-E) Systems

AFOSHSTD 91-66, General Industrial Operations

AFOSHSTD 91-67, Liquid Nitrogen and Oxygen Safety

AFOSHSTD 91-68, Chemical Safety

AFOSHSTD 91-90, Precision Measurement Equipment Laboratory (PMEL)

AFOSHSTD 91-100, Aircraft Flightline Ground Operations and Activities

AFOSHSTD 91-110, Nondestructive Inspection and Oil Analysis Program

AFOSHSTD 91-119, Process Safety Management (PSM) of Highly Hazardous Chemicals

AFOSHSTD 91-501, Air Force Consolidated Occupational Safety Standard

AFOSHSTD 161-2, Industrial Ventilation

AFOSHSTD 161-20, Hearing Conservation Program

AFI 10-201, *Status of Resources and Training System*

AFI 10-209, *Red Horse Program*

AFI 10-215, *Personnel Support For Contingency Operations (PERSCO)*

AFI 10-229, *Responding to Severe Weather Events*

AFI 10-401, *Operations Plan and Concept Plan Development and Implementation*

AFI 10-403, *Deployment Planning and Execution*

AFI 10-404, *Expeditionary Site Planning*

AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*

AFI 10-703, *Electronic Warfare Integrated Reprogramming*

AFI 11-202 v3, *General Flight Rules*

AFI 11-218, *Aircraft Operations and Movement on the Ground*

AFI 11-235, *Forward Area Refueling Point (FARP) Operations*

AFI 11-301 v1, *Aircrew Life Support (ALS) Program*

AFI 11-301 v2, *Maintenance And Configuration Requirements for Aircrew and Aircraft-Installed Life Support Equipment (ALSE)*

AFI 11-401, *Flight Management*

AFI 13-201, *Air Force Airspace Management*

AFI 13-213, *Airfield Management*

AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*

AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*

AFI 21-104, *Selected Management of Selected Gas Turbine Engines*

AFI 21-105, *Aerospace Equipment Structural Maintenance*

AFI 21-107, *Maintaining Commercial Derivative Aircraft*

AFI 21-110, *Engineering and Technical Services, Management and Control*

AFI 21-112, *Aircrew Egress System Maintenance*

AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Program*

AFI 21-118, *Improving Aerospace Equipment Reliability and Maintainability*

AFI 21-123, *The Air Force Repair Enhancement Program*

AFI 21-124, *Air Force Oil Analysis Program*

AFI 21-129, *Two Level Maintenance and Regional Repair of Air Force Weapon Systems and Equipment*

AFI 21-201, *Conventional Munitions Maintenance Management*

AFI 21-204, *Nuclear Weapons Maintenance Management*

AFI 21-303, *Technical Orders*

AFI 21-401, *Engineering Data Storage, Distribution, and Control*

AFI 21-403, *Acquiring Engineering Data*

AFI 23-101, *Centrally Managed Equipment*

AFI 23-202, *Buying Petroleum Products and Other Supplies and Services Off-Station*

AFI 23-204, *Organizational Fuel Tanks*

AFI 24-201, *Cargo Movement*

AFI 24-202, *Preservation and Packing*

AFI 24-302, *Vehicle Management*

AFPAM 24-317, *Vehicle Control*

AFI 25-101, *War Reserve Materiel (WRM) Program Guidance and Procedures*

AFI 25-201, *Support Agreements*

AFI 31-201, *Security Police Standards and Procedures*

AFI 31-401, *Information Security Program Management*

AFI 32-4001, *Disaster Preparedness Planning and Operations*

AFI 32-7001, *Environmental Budgeting*

AFI 32-7002, *Environmental Information Management System*

AFI 32-7040, *Air Quality Compliance*

AFI 32-7041, *Water Quality Compliance*

AFI 32-7042, *Solid and Hazardous Waste Compliance*

AFPAM 32-7043, *Hazardous Waste Management Guide*

AFI 32-7044, *Storage Tank Compliance*

AFI 32-7045, *Environmental Compliance Assessment and Management Program (ECAMP)*

AFI 32-7061, *The Environmental Impact Analysis Process*

AFI 32-7064, *Integrated Natural Resources Management*

AFI 32-7065, *Cultural Resources Management*

AFI 32-7080, *Pollution Prevention Program*

AFI 32-7086, *Hazardous Materials Management*

AFI 33-106, *Managing High Frequency Radios, Land Mobile Radios, Cellular Telephones, and the Military Affiliate Radio System*

AFI 33-115, Vol 1, *Network Management*

AFI 33-118, *Radio Frequency Spectrum Management*

AFI 33-202, *Computer Security (COMPUSEC)*

AFI 33-211, *Communication Security (COMSEC) User Requirements*

AFI 33-212, *Reporting COMSEC Deviations*

AFI 33-322, *Records Management Program*

AFI 33-332, *Air Force Privacy Act Information*

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Abbreviations and Acronyms

2LM—Two Level Maintenance

3LM—Three Level Maintenance

A/R—Aerospace Repair

ABDR—Aircraft Battle Damage Repair

AC—Aircraft Commander

ACC—Air Combat Command

ACE—Allied Command Europe

ACN—Authorization Change Notice

ACM—Aircraft Configuration Management

ACPINS—Automated Computer Program Identification Number System

ACR—Authorization Change Requests

ACS—Agile Combat Support

ADCC—Assistant Dedicated Crew Chief

ADF—Automatic Direction Finder

ADN—Aircraft Directive Numbers

ADPE—Automated Data Processing Equipment

ADR—Aircraft Document Review / Ammunition Disposition Report

ADS—Automated Data System

ADVON—Advanced Echelon

AEF—Aerospace Expeditionary Force

AEFC—AEF Center

AETC—Air Education and Training Command

AETF—Air and Space Expeditionary Task Force

AFCSM—Air Force Computer Security Manual

AFDD—Air Force Doctrine Document

AFEMS—Air Force Equipment Management System

AFETS—Air Force Engineering and Technical Service

AFFOR—Air Force Forces

AFI—Air Force Instruction

AFIND—Air Force Index

AFJMAN—Air Force Joint Manual

AFKS—Air Force Knowledge Services (formerly EDW)

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFMETCAL—Air Force Metrology and Calibration Program

AFNCC—Air Force Network Control Center

AFORMS—Automated Forms

AFOSH—Air Force Occupational Safety and Health

AFOSHSTD—Air Force Occupational Safety and Health Standards

AFP—Air Force Portal

AFPAM—Air Force Pamphlet

AFPC—Air Force Personnel Center

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFRCC—Air Force Rescue Coordination Cente**r**

AFREP—Air Force Repair and Enhancement Program

AFSATCOM—Air Force Satellite Communications

AFSC—Air Force Specialty Code

AFCSM—Air Force Computer Systems Manual

AFSOC—Air Force Special Operations Command

AFSPC—Air Force Space Command

AFIT—Air Force Institute of Technology

AFP—Air Force Portal

AFRL—Air Force Research Laboratory

AFTO—Air Force Technical Order

AFU—Automated Functional Unit

AGE—Aerospace Ground Equipment

AGETS—Automated Ground Engine Test Set

AGM—Air Surface Attack Guided Missile

AHE—Automated History Event

AHRS—Attitude Heading Reference System

AIG—Address Indicating Group

AIMS—Air Intercept Missile System

AIP—Aircraft Information Program

AIS—Aircraft Instrumentation System

ALA—Ammunition Loading Assemblies

ALC—Air Logistics Center

ALS—Ammunition Loading System

AMA—Acceleration Monitor Assemblies

AMC—Air Mobility Command

AME—Alternate Mission Equipment

AMU—Aircraft Maintenance Unit

AMOG—Air Mobility Operations Group

AMQP—Aircraft Maintenance Qualification Program

AMSG—Air Mobility Support Group

AMSS—Air Mobility Support Squadron

AMXS—Aircraft Maintenance Squadron

ANG—Air National Guard

AOR—Area of Responsibility **A/P—**Airframe/Powerplant

APG—Airplane General

APP—Auxiliary Power Plant

APU—Auxiliary Power Unit

AQL—Acceptable Quality Level

AR—Abort Rate

ARC—Air Reserve Component/Automated Records Check

ART—Air Reserve Technician / AEF Reporting Tool

AS—Allowance Standard

ASAP—As Soon As Possible

ASF—Aircraft Support Flight (MAF)

ASIP—Aircraft Structural Integrity Program

ASIMIS—Aircraft Structural Integrity Management Information System

ASM—Aircraft Structural Maintenance / Automated Scheduling Message

AST—Armament Systems Trainer

ATC—Air Traffic Control

ATD—Aircrew Training Devices

ATERS—Automatic Test Reporting System

ATF—After-the-Fact

ATM—Air Turbine Motor

ATO—Air Tasking Order

ATOMS—Automated Technical Order Management System

ATSO—Ability To Survive and Operate

AUR—Accomplishment Utilization Report / All-Up-Round

AURC—All-Up-Round Container

AVDO—Aerospace Vehicle Distribution Office

AVTR—Airborne Videotape Recorder

AWBS—Automated Weight and Balance System

AWI—Awaiting Installation

AWM—Awaiting Maintenance

AWP—Awaiting Parts

BAI—Backup Aerospace Vehicle (Aircraft) Inventory

BCS—Bench Check Serviceable

BE—Bioenvironmental Engineering

BFE—Basic Fighting Element

BITE—Built-In Test Equipment

BNCC—Base Network Control Center

BPO—Basic Post-flight

BR—Break Rate

BRA—Bomb Rack Assembly

BRAAT—Base Recovery After Attack

BRU—Bomb Rack Unit

BSL—Basic Systems Listing

C4—Command, Control, Communications, and Computers

CA—Cannibalization Authority / Combat Support Coded

CAA—Career Assistance Advisor

CA/CRL—Custodian Authorization/Custody Receipt Listing

CAD—Computer Aided Design

CAD/PAD—Cartridge/Propellant Activated Device

CAF—Combat Air Forces

CAFSC—Control Air Force Specialty Code

CALCM—Conventional Air Launched Cruise Missile

CANN—Cannibalization

CAPCODE—Capability/Reliability Code

CAS—Combat Ammunition System

CASS—Consolidated Aircraft Support System

CAST—Combat Armament Support Team / Command Aircraft Systems Training

CATM—Captive Air Training Munition

CBM—Carriage Conventional Bomb Module

CBM+—Condition-Based Maintenance Plus

CBRNE—Chemical, Biological, Radiological, Nuclear and high-yield Environment

CBT—Computer-Based Training

CBU—Cluster Bomb Unit

CC—Commander / Combat Coded

CCB—Configuration Control Board

CCD—Course Control Document

CCI—Controlled Cryptographic Item

CCMS—Compass Call Mission Simulator

C-CW—Counter-Chemical Warfare

CCY—Calculated Cycles

CD—Command Disable / Deputy Commander (e.g., MXG/CD)

CDB—Central Database

CDC—Career Development Course

CDDAR—Crashed, Damaged, or Disabled Aircraft Recovery

CDRL—Contract Data Requirements List

CDS—Command Disablement System

CE—Civil Engineer / Communications Electronics

CEMS—Comprehensive Engine Management System

CETADS—Comprehensive Engine Trending and Diagnostics

CETS—Contractor Engineering and Technical Services

CERP—Centralized Engine Rotable Pool

CFETP—Career Field Education and Training Plan

CFRS—Computerized Fault Reporting System

CFT—Conformal Fuel Tank / Contract Field Team

CGO—Continuing Government Organization

CGP—Central Ground Processors

CHPMSK—Centralized High Priority Mission Support Kit

CIP—Control Indicator Programmer

CIRF—Centralized Intermediate Repair Facility

CITS—Central Integrated Test System

CL—Checklist

CLS—Contract Logistics Support

CLSS—Combat Logistics Support Squadron

CM—Configuration Management

CMRS—Conventional Munitions Restricted and Suspension

CMS—Component Maintenance Squadron

CND—Can Not Duplicate

CO—Contracting Officer

COB—Collocated Operating Base

COMAFFOR—Commander, Air Force Forces

COMBS—Contractor Operated and Maintained Base Supply

COMPUSEC—Computer Security

COMSEC—Communications Security

CONUS—Continental United States

CONOPS—Concept of Operations

CONS—Console Monitoring

COR—Contracting Officers Representative

COSO—Combat Oriented Supply Organization

COT—Current Operating Time

COTR—Contracting Officer Technical Representative

COTS—Commercial Off-The-Shelf

CPIN—Computer Program Identification Numbering

CPR—Cardio-Pulmonary Resuscitation

CPT—Cockpit Trainer

CR—Component Repair

CR—Cannibalization Rate

CRB—Configuration Review Board

CRP—Centralized Rotable Pool

CSC—Central Security Control

CSM—Cross-Servicing Manager

CSO—Concurrent Servicing Operation

CSRD—Computer System Requirement Document

CSRL—Code Selected Reconciliation Listing / Conventional Stores Rotary Launcher

CSS—Concurrent Servicing Supervisor / Chief Servicing Supervisor

CSSM—Combat Supply Support for Maintenance

CTK—Composite Tool Kit

CTR—Consolidated Training Request

CTVS—Cockpit Television Sensor

CUT—Cross Utilization Training

CV—Vice Commander

CVR—Cockpit Voice Recorder

CW—Chemical Warfare / Continuous Wave

CWO—Combat Wing Organization

DAFSC—Duty Air Force Specialty Code

DASS—Decentralized Asset Supply Support

DBA—Database Administrator

DBE—Database Editor

DBL—Database Look

DBM—Database Manager

DCC—Dedicated Crew Chief / Deployment Control Center

DCMA—Defense Contract Management Agency

DD—Delayed Discrepancy

DDN—Defense Data Network

DDR—Daily Demand Rate

DDR—Deferred (or Delayed) Discrepancy Rate

DDS—Deferred Discrepancy Summary

DDTS—Data Display Training Set

DECC—Defense Enterprise Computer Center

DEFCON—Defense Readiness Condition

DET—Detachment

DFAS—Defense Finance & Accounting Service

DFT—Depot Field Team

DIFM—Due-in From Maintenance

DIREP—Difficulty Report

DIT—Data Integrity Team

DLC—Distance Learning Center

DLIR—Downward-Looking Infrared Radar

DLM—Depot Level Maintenance

DLO—Dual Loading Operation

DMS—Defense Message System

DOC—Designed Operational Capability

DoD—Department of Defense

DOI—Date of Installation

DOM—Date of Manufacture

DOP—Dropped Object Prevention

DOR—Due-Out Release

DR—Deficiency Report

DREAMS—Deficiency Report Entry and Mail Submitter (System)

DRIS—Deficiency Reporting Information System

DRMO—Defense Reutilization and Marketing Office

DS—Defensive Systems

DSE—Dedicated Support Element

DSN—Defense Switching Network

DSV—Detected Safety Violations

DTRA—Defense Threat Reduction Agency

DUO—Due-Out

DVP—Document Validation Priority

DVR—Document Validation Report

E-Tools—Electronic Tools

E&E—Electro-Environmental

E&HWG—Environmental and Health Working Group

EA—Electronic Attack

EAID—Equipment Authorization Inventory Data

ECAMP—Environmental Compliance Assessment & Management Program

ECM—Electronic Countermeasures

ECP—Engineering Change Proposal

ECS—Environmental Control System; or, Expeditionary Combat Support; or Electronic Colocated System [context]

ECU—Environmental Control Unit

EDD—Earliest Delivery Date

EDM—Emergency Destruction of Munitions

EDSC—Engineering Data Service Center

EHM—Engine Health Management

EHWG—Environmental and Health Working Group

EHR—Event History Recorder

EID—Event Identification Description / Equipment Identification Designator

EIMSURS—Equipment Inventory, Multiple Status and Utilization Reporting Subsystem

EIP—Equipment Inoperative for Parts

ELT—Emergency Locator Transmitter

EM—Engine Management Section

EMB—Engine Management Branch

EMOC—Enhanced Maintenance Operations Center

EMR—Electromagnetic Radiation

EMS—Equipment Maintenance Squadron

EMS—Environmental Management System

EMXG—Expeditionary Maintenance Group

ENMCB—Engine Not Mission Capable-Both

ENMCM—Engine Not Mission Capable-Maintenance

ENMCS—Engine Not Mission Capable-Supply

EOD—Explosive Ordnance Disposal

EOQ—Economic Order Quantity

EOR—End of Runway

EOT—Engine Operating Time

EPA—Environmental Protection Agency

EPE—Evaluator Proficiency Evaluation

ER—Exceptional Release

ERRC—Expendability, Recoverability, Reparability Code

ESOH—Environment Safety and Occupational Health

ESOHMS—Environment, Safety, and Occupational Health Management System

ESP—Expeditionary Site Plan

ESS—Electrical Standards Set

ESTS—Electronic System Test Set

ETTAS—Engine Test Trim Automated System

ETA—Expected Time of Arrival

ETIC—Expected Time in Commission

ETS—Engineering and Technical Service

ET&D—Engine Trending and Diagnostics

EVS—Electro-optical Viewing System

EW—Electronic Warfare

EWO—Emergency War Order

EWS—Electronic Warfare System

EX—Exercises/Contingencies**EXPRESS—**Execution and Prioritization of Repair Support System

FAA—Federal Aviation Administration

FAC—Functional Area Chief / Functional Account Code

FAD—Force Activity Designator

FADM—Functional Area Documentation Manager

FAM—Functional Area Manager

FAR—Federal Acquisition Regulation

FCC—Flying Crew Chief

FCF—Functional Check Flight

FCIF—Flight Crew Information File

FCT—Flight Circuit Test

FDR—Flight Data Recorder

FDSE—Flightline Dedicated Support Element

FECP—Field Engineering Change Proposal

FIT—Facility for Interoperability Testing

FK—Air Force Stock Record Account Number Prefix (munitions)

FLIR—Forward-Looking Infrared Radar

FMC—Fully Mission Capable

FO—Foreign Object

FOD—Foreign Object Damage

FOL—Forward Operating Location

FOM—Facilitate Other Maintenance

FOQA—Flight Operational Quality Assurance

FOUO—For Official Use Only

FPCON—Force Protection Condition

FR—Fix Rate

FS—Fighter Squadron

FSAS—Fuel Savings Advisory System

FSC—Flight Service Center

FSE—Field Service Evaluation

FSL—Full Systems Listing / Forward Support Location

FTD—Field Training Detachment

FUD—File Update Mode

FY—Fiscal Year

G081—IMDS for Mobility

GBL—Government Bill of Lading

GBU—Guided Bomb Unit

GCCS—Global Command and Control System

GCSAS—Generic Configuration Status Accounting Subsystem

GDSS—Global Decision Support System

GEOLOC—Geographical Location

GITA—Ground Instructional Trainer Aircraft

GN—Gaseous Nitrogen

GOTS—Government Off-The-Shelf

GOX—Gaseous Oxygen

GP—Group

GP/CC—Group Commander

GPC—Government Purchase Card

GPS—Global Positioning System

GPWS—Ground Proximity Warning System

GS—General Schedule

GSA—General Services Administration

GSAS—Generation Sequence Action Schedule

GTC—Gas Turbine Compressor

HAF—Headquarters, US Air Force

HAS—Hardened Aircraft Shelters

HAZCOM—Hazard Communication

HAZMAT—Hazardous Material

HD-LD—High Demand-Low Density

HEI—High Explosive Incendiary

HF—High Frequency

HHQ—Higher Headquarters

HMMP—Hazardous Material Management Process

HMXS—Helicopter Maintenance Squadron

HNS—Host Nation Support

HPO—Hourly Post-flight

HPO—High Performance Organization

HQ—Headquarters

HSC—Home Station Check

HSLDR—Home-Stattion Logistics Departure Reliability Rate

HYT—High Year of Tenure

I&SG—Interchangeable and Substitute Group

IAW—In Accordance With

IBL—Inspection Baseline

IC—Interim Change (for Regulations, Publications, etc.)

ICBM—Intercontinental Ballistic Missle

ICW—In Compliance With

ID—Identification

IDAS—Intrusion Detection Alarm System

IDEA—Innovation Development through Employee Awareness

I-Deck—Initialization Deck

IETM—Interactive Electronic Technical Manuals

IEU—Individual Equipment

IFE—In-Flight Emergency

IFF—Identification Friend or Foe

IG—Inspector General

ILM—Intermediate Level Maintenance

ILS-S—Intergrated Logistics Systems-Supply

IM—Item Manager

IMA—Individual Mobilization Augmentation

IMDS—Integrated Maintenance Data System

IMDS-CDB—Integrated Maintenance Data System-Central Data Base

IMF—Integrated Maintenance Facility

IMIS—Integrated Maintenance Information System

INS—Inertial Navigation System

INW—In Work

IP—Instructor Pilot

IPA—In-Process Assessment

INW—In-Work

IPB—Illustrated Parts Breakdown

IPI—In-Process Inspection

IPL—Immediately Prior to Launch

IPMS—Information Porcessing Manangement System

IQU—Integrated Query Utility

IRADS—Infrared Acquisitions/Designation System

IRC—Inspection Record Card

IREP—Intermediate Repair Enhancement Program

IRRI—Immediate Response Readiness Inspection

IRSP—In-place Readiness Spares Packages

ISD—Instructional System Development

ISO—Isochronal Inspection

ISSL—Initial Spares Support List

ITAL—Initial Task Assignment List

ITDS—Integrated Technical Data System

ITO—Initial Tasking Order

I&E—Inspection and Evaluation

JA/ATT—Joint Airborne/Air Transportability Training

JCALS—Joint Computer-Aided Acquisition and Logistics Support

JCN—Job Control Number

JDD—Job Data Documentation

JDMP—Joint Depot Maintenance Program

JEIM—Jet Engine Intermediate Maintenance

JETCC—Jet Engine Test Cell/Stand Calibrator

JFACC—Joint Forces Air Component Commander

JML—Job Standard Master Listing

JOPES—Joint Operations Planning and Execution System

JQS—Job Qualification Standard

JSOW—Joint Stand Off Weapon

JST—Job Standard

JTIDS—Joint Tactical Information Distribution System

JUMPS—Joint Uniform Military Pay System

KEEP—Keep Enlisted Experience Program

KTL—Key Task List

LAN—Local Area Network

LANTIRN—Low Altitude Navigation and Targeting Infrared for Night

LCF—Low-Cycle Fatigue

LCL—Local Checklist

LCN—Logistics Control Number

LCOM—Logistics Composite Model

LD-HD—Low Density-High Demand

LESS—Loads Environment Spectra Survey

LIMFAC—Limiting Factor

LJG—Local Job Guides

LLC—Limited Life Component

LM—Limited-use Munition

LME—Locally Manufactured Equipment

LMR—Land Mobile Radio

LMSS—LANTIRN Mobility Shelter Set

LN2—Liquid Nitrogen

LO—Low Observable

LOGMOD—Logistics Module

LOGNET—Logistics Network

LOP—Local Overprint

LORAN—Long Range Aid to Navigation

LOX—Liquid Oxygen

LPS—Local Page Supplement

LPT—Loaded Pylon Test

LRS—Logistics Readiness Squadron

LRU—Line Replaceable Unit

LSC—Load Standardization Crew

LSC—Logistics Support Center

LSET—Logistics Standardization and Evaluation Team

LSEP—Logistics Standardization and Evaluation Program

LSM—Logistics Supply Manager

LSP—Logistics Support Plan

LV—Leave

LWC—Local Work cards

M&I—Maintenance and Inspection

MADAR—Malfunction Detection, Analysis, and Recording System

MAF—Mobility Air Forces

MAJCOM—Major Command

MASO—Munitions Accountable System Officer

MASS—Mission Capable (MICAP) Asset Sourcing System

MC—Mission Capable

MCC—Mission Capability Code

MCD—Magnetic Chip Detectors

MDC—Maintenance Data Collection

MDF—Mission Data File

MDR—Materiel Deficiency Report

MDS—Mission Design Series

MDSA—Maintenance Data Systems Analysis

MEGP—Mission Essential Ground Personnel

MEL—Minimum Essential Level

MEO—Most Efficient Organization

MER—Multiple Ejection Rack

MESL—Mission Essential Subsystems List

MFG—Munitions Family Group

MGI—Mandatory Government Inspection

MHE—Materiel Handling Equipment

MI—Management Inspection

MICAP—Mission Capable

MISCAP—Mission Capability

MIL—Master Inventory List

MILSPEC—Military Specification

MIS—Maintenance Information Systems

MMCL—MAJCOM Mandatory Course List

MMHE—Munitions Materiel Handling Equipment

MMR—Maintenance Manpower Requests

MOA—Memorandum of Agreement

MOB—Main Operating Base

MOC—Maintenance Operations Center

MOF—Maintenance Operations Flight

MOL—Main Operating Location

MOU—Munitions Operation Unit

MOS—Maintenance Operations Squadron

MPC—Maintenance Priority Code / Mission Planning Cell

MPF—Military Personnel Flight

MPL—Maintenance Personnel Listing

MPR—Maintenance Personnel Roster (listing)

MPRL—Minimum Proficiency Requirement Loading

MQC—Maintenance Qualification Centers

MQT—Maintenance Qualification Training

MRS—Mission Route Support

MRT—Maintenance Recovery Team / Mission Ready Technician

MSA—Munitions Storage Area

MSAT—Maintenance Scheduling Application Tool

MSB—Main Support Base

MSD—Material Support Division

MSE—Munition Support Equipment

MSE—Maintenance Scheduling Effectiveness

MSEP—Maintenance Standardization & Evaluation Program

MSET—Maintenance Standardization & Evaluation Team

MSG—Mission Support Group

MSIM—Mission Simulator

MSK—Mission Support Kit

MSL—Maintenance Supply Liaison

MSPE—Maintenance Safety and Protection Equipment

MTBF—Mean Time Between Failures

MTBM—Mean Time Between Maintenance

MTD—Maintenance Training Device

MTF—Maintenance Training Flight

MTP—Maintenance Training Plan

MTR—Military Travel Request

MTT—Mobile Training Team

MTW—Major Theater War

MUNS—Munitions Squadron

MX—Maintenance

MXG—Maintenance Group

MXS—Maintenance Squadron

NAF—Numbered Air Force

NAS—National Aerospace Standard

NATO—North Atlantic Treaty Organization

NAVAIDS—Navigational Aids

NBC—Nuclear, Biological, Chemical

NDI—Non-Destructive Inspection

NEW—Net Explosive Weight

NHA—Next Higher Assembly

NIE—Normally Installed Equipment

NLT—Not Later Than

NMC—Not Mission Capable

NMCB—Not Mission Capable - Both (maintenance & supply)

NMCM—Not Mission Capable - Maintenance

NMCS—Not Mission Capable - Supply

NOCM—Nuclear Ordnance Controlled Management

NOTAM—Notice To Airmen

NPA—Non-Powered AGE

NRTS—Not Repairable This Station

NSN—National Stock Number

NSS—Noise Suppression System

O&M—Operations and Maintenance

OACSR—Operational Aircraft Cross-Servicing Requirement

OAP—Oil Analysis Program

OAS—Offensive Avionics System

OBOGS—On-Board Oxygen Generating Systems

OBTS—On-Board Test System

OCF—Operational Check Flight

OCONUS—Outside Continental U.S.

OCR—Office of Collateral Responsibility

OFP—Operations Flight Program

OG—Operations Group

OGP—OBTS Ground Processor

OI—Operating Instruction

OIC—Officer in Charge

OJT—On-the-Job Training

OL—Operating Location

OLO—Operations Liaison Officer

OPLAN—Operational Plan

OPORD—Operations Order

OPR—Office of Primary Responsibility

OPSTEMPO—Operations Tempo

ORI—Operational Readiness Inspection

ORM—Operational Risk Management

OSHA—Occupational Safety and Health Administration

OS—Operational Squadron

OSS—Operations Support Squadron

OSS&E—Operational Safety Suitability and Effectiveness

OT&E—Operational Test and Evaluation

OTI—One Time Inspection

OTS—Over-The-Shoulder

OTU—Operating Time Update

OWC—Owning Work Center

PA—Personnel Availability

P-S—Permanent-Safety

PAA—Primary Aerospace Vehicle (Aircraft) Authorized

PACAF—Pacific Air Forces

PAI—Primary Aerospace Vehicle (Aircraft) Inventory

PAL—Permissive Action Link

PAMS—PMEL Automated Management System

PAS—Protective Aircraft Shelter / Personnel Assignment (Code)

PATEC—Portable Automatic Test Equipment Calibrator

PBR—Percent of Base Repair

PC—Personal Computer

PCA—Permanent Change of Assignment

PCS—Permanent Change of Station

PD—Program Document

PDM—Programmed Depot Maintenance

PDO—Publications Distribution Office

PE—Personnel Evaluation

PEC—Program Element Code

PERSCO—Personnel Support for Contingency Operations

PF—Phase Flow

PHR—Panel Holding Rack

PI—Product Improvement

PIF—Personal Information File

PIM—Product Improvement Manager

PIP—Product Improvement Program

PIWG—Product Improvement Working Group

PGM—Precision Guided Munitions

PM—Primary Munition / Preventive Maintenance

PMA—Portable Maintenance Unit

PMAP—Performance Management Assessment Program

PMC—Partially Mission Capable

PMCB—Partially Mission Capable - Both (maintenance & supply)

PMCM—Partially Mission Capable - Maintenance

PMCS—Partially Mission Capable - Supply

PMEL—Precision Measurement Equipment Laboratory

PMI—Preventive Maintenance Inspection

PMO—Program Management Office

PNAF—Prime Nuclear Airlift Force

PO—Program Office

POC—Point of Contact

POI—Plans of Instruction

POL—Petroleum, Oil, and Lubricants

POM—Program Objective Memorandum

POMX—Point Of Maintenance

POS—Peacetime Operating Stock

P/P—Primary Aerospace Vehicle Authorized vs. Possessed Rate

PPC—Possession Purpose Code

PPE—Personal Protective Equipment

PPR—Product Planning Requirements / Prior Permission Required

PPS—Product Performance Subsystem

PRD—Pilot Reported Discrepancy

PRP—Personnel Reliability Program

PRS—Performance Requirements Statement

PS&D—Plans, Scheduling, and Documentation

PSP—Primary Supply Point

PTDO—Prepare to Deploy Order

PTM—Production Team Maintenance

PTR—Pressure Test Record

PWC—Performing Work Center

PWS—Performance Work Statement

QA—Quality Assurance

QAA—Quality Assurance Assessment

QAD—Quality Assurance Data-base

QAE—Quality Assurance Evaluator

QAR—Quality Assurance Representative

QAT—Quality Assessment Tracking

QC—Quality Control

QE—Quarterly Evaluation

QEC—Quick Engine Change

QLP—Query Language Processor

QP—Quality Program

QPA—Quantity Per Assembly

QRC—Quick Reaction Capability

QRL—Quick Reference List

QT—Qualification Training

QVA—Quality Verification Assessment

QVI—Quality Verification Inspection

QVR—Quality Verification Result

RAL—Routine Assessment List

RAM—Radar Absorbent Material

RAMPOD—Reliability, Availability, Maintainability for Pods

RAMTIP—Reliability and Maintainability Technology Insertion Program

RASCAL—Rapid Assistance Support for Calibrations

RAT—Redeployment Assistance Team

RCM—Repair Cycle Monitor

RCP—Repair Cycle Processing Rate

RCS—Report Control Symbol

RCT—Repair Cycle Time

RDCO—Refueling Documents Control Officer

RDD—Required Delivery Date

RDT&E—Research, Development, Test, and Evaluation

REMIS—Reliability and Maintainability Information System

RJET—Remote Job Entry Terminal

RIL—Routine Inspection List

ROD—Report Of Discrepancy

ROID—Report Of Item Discrepancy

ROS—Report Of Survey

RPIE—Real Property Installed Equipment

RPM—Revolutions Per Minute

R/R—Repeat/Recur Rate

RS—Reentry System

RSP—Readiness Spares Package / Render Safe Procedure

RSS—Regional Supply Squadron

RTACP—Regional/Theater Ammunition Control Point

RTC—Regional Training Center

RTHW—Radar Threat Warning

RTL—Routine Task List

RTS—Radar Test Set

RTOK—Re-Test O.K.

RV—Reentry Vehicle

RWR—Radar Warning Receiver

R&M—Reliability and Maintainability

R&R—Repair and Reclamation

SA—Support Agreement

SARSAT—Search and Rescue Satellite Aided Tracking

SART—Strategic Aircraft Reconstitution Team

SAS—Stability Augmentation Systems

SATE—Security Awareness Training and Education

SATCOM—Satellite Communication

SAV—Staff Assistance Visit

SBSS—Standard Base Supply System

SCL—Standard Conventional Load

SCR—Special Certification Roster

SDAP—Special Duty Assignment Pay

SE—Support Equipment

SEI—Special Experience Identifier

SF—Security Forces

SGA—Selective Generation Aircraft

SGNSC—Self Generating Nitrogen Servicing Cart

SGO—Sortie Generation Operations

SHAPE—Supreme Headquarters Allied Powers, Europe

SHD—Significant Historical Data

SHDR—Significant History Data Recorder

SI—Special Inspection

SIPRNET—Secret Internet Protocol Router Network

SIT—System Interface Test

SLT—Simulated Laser Target

SM—Single Manager / Support Munitions

SME—Subject Matter Expert

SMR—Source of Maintenance and Recoverability

SN—Serial Number

SNCO—Senior Non-Commissioned Officer

SO—Single Observation

SOF—Supervisor Of Flying

SORTS—Status Of Resources and Training System

SOT—Status Of Training

SOW—Statement Of Work

SPD—System Program Director

SPM—System Program Manager

SPO—System Program Office

SPRAM—Special Purpose Recoverables Authorized Maintenance

SQ—Squadron

SQ/CC—Squadron Commander

SQT—Special Qualification Training

SR—Service Report / Strategic Radar

SRAN—Stock Record Account Number

SRD—Standard Reporting Designator

SRP—Selective Reenlistment Program

SRU—Shop Replaceable Unit

SSEA—System Safety Engineering Analysis

SSG—Standard Systems Group

SSM—System Support Manager

STAMP—Standard Air Munitions Package

STANAG—Standardized NATO Agreement

SUPT—Maintenance Superintendent (Enlisted Duties)

SW—Special Weapons

SWIM—Special Weapons Information Management

SY—Sympathy

TAC—Total Accumulated Cycles

TACAN—Tactical Air Navigation

TACC—Tanker/Airlift Control Center

TACP—Theater Ammunition Control Point

TAI—Total Active Inventory (aircraft)

TAL—Task Assignment List

TALCE—Tanker/Airlift Control Element

TAS—Tool Accountability System

TAV—Total Asset Visibility

NFTBU—Tank Build-Up

TBMCS—Theater Battle Management Core System

TCAS—Traffic Collision Avoidance System

TCI—Time Change Item

TCN—Transportation Control Number

TCS—TCTO Status Report

TCTO—Time Compliance Technical Order

TD—Training Detachment / Temporary Duty

TDI—Time Distribution Index

TDV—Technical Data Violation

TDY—Temporary Duty

TE—Technical Engineer

TEC—Type Event Code

T/E/C—Trainer/Evaluator/Certifier

TEMS—Turbine Engine Management System

TEP—Technical Engineering Program

TER—Triple Ejection Rack

TF—Training Funded

TFCU—Transportable Field Calibration Unit

TIN—Turn In

TISL—Target Identification Set Laser

TK—Tool Kit

TMATS—Transmitter/Modulator Assembly Test Set

TMDE—Test Measurement and Diagnostic Equipment

TMF—Traffic Management Flight

TMRS—Tactical Missile Reporting System

TMSM—Type Make Series Modification

TNB—Tail Number Bin

TNMC—Total Not Mission Capable

TNMCB—Total Not Mission Capable - Both

TNMCM—Total Not Mission Capable - Maintenance

TNMCS—Total Not Mission Capable - Supply

TNO—Theater Nuclear Option

TO—Technical Order

TOA—Table Of Allowances

TODA—Technical Order Distribution Account

TODO—Technical Order Distribution Office

TOS—Time On Station

TOT—Task Oriented Training

TPFDD—Time Phased Force Deployment Document

TRAP—Tanks, Racks, Adapters, and Pylons

TRE—Transfer of Equipment

TRIC—Transaction Identification Code

TRN—Turnaround Transaction

TRSS—Training Support Squadron

TRU—Tester Replaceable Unit

TSSE—Test Station Support Equipment

TSS—TCTO Status Summary

TTML—Test/Training Munitions List

TTP—Tactics, Techniques & Procedures

TVI—Technical Validation Inspection

U&TW—Utilization and Training Workshop

UAV—Unmanned Aerial Vehicle

UCAV—Unmanned Combat Aerial Vehicle

UCI—Unit Compliance Inspection

UCML—Unit Committed Munitions List

UCR—Unsatisfactory Condition Report

UDM—Unit Deployment Manager

UEC—Unit Environmental Coordinator

UETM—Unit Education and Training Manager

UEM—Unit Engine Manager

UGT—Upgrade Training

UHF—Ultra High Frequency

UJC—Urgency Justification Code

ULN—Unit Line Number

UMD—Unit Manning Document

UND—Urgency of Need Designator

UPMR—Unit Personnel Management Roster

USAF—United States Air Force

USAFE—United States Air Forces in Europe

UT—Upgrade Training

UTA—Unit Training Assembly

UTC—Unit Type Code

UTE—Utilization (rate)

UTM—Unit Training Manager

UXO—Unexploded Ordnance

VHF—Very High Frequency

VTT—Video Tele-Training

W&B—Weight and Balance

W&T—Wheel and Tire

W/B/T—Weapon Bay Fuel Tanks

WCDO—War Consumables Distribution Objective

WCE—Work Center Event

WCS—Weapons Control System

WG—Wing / Wage Grade

WG/CC—Wing Commander

WG/CV—Vice Wing Commander

WL—Wage Leader

WLAN—Wireless Local Area Network

WLCMP—Weapons Load Crew Management Program

WLT—Weapons Load Training

WMP—War Mobilization Plan

WR—War Reserve

WRCS—Weapons Release Control System

WRE—War Ready Engine (level/rate)

WRM—War Reserve Materiel

WRMO—War Reserve Materiel Officer

WS—Weapons Standardization / Wage Supervisor

WS3—Weapons Storage and Security System

WSCM—Weapon System Compatible Munition

WSE—Weapons Standardization Evaluator

WSEP—Weapons System Evaluation Program

WSLO—Weapons System Liaison Officer

WSLU—Weapons System Lead Unit

WTD—Weapons Training Detachment

WTQC—Weapons Task Qualification Crew

WTQM—Weapons Task Qualification Training Manager

WTS—Weapons Training Site

WW—Worldwide

WWID—Worldwide Identification (code for TAS)

WWM—Wing Weapons Manager

WX—Weather

WUC—Work Unit Code

Terms

Aircraft Impoundment—Isolation of an aircraft due to an unknown malfunction or condition making it unsafe for flight.

Aircraft Maintenance Qualification Program (AMQP)—Conducts training in an environment that is not in competition with sortie production. Ensures personnel arrive at their work center with the necessary skills to be immediately productive.

Aircrew Training Device (ATD)—Weapons systems simulator or designated training aircraft.

AF Portal Gadgets—Computer displays that provide the functional capability to track and update asset status.

Aircraft B-Status Possession Codes—Sample B-status codes (specified in AFI 21-103): BJ=crash/battle damage awaiting AFMC assist/decision; BK=command programmed maintenance; BL=extended transit maintenance; BN=crash damaged (unit repairable); BO=battle damage; BQ=major maintenance awaiting AFMC decision/action; BR= major maintenance awaiting parts; BT=aerospace vehicle transfer; BU=depot level maintenance; BW=weather/bird strike damage awaiting AFMC assist/decision; BX=weather/bird strike damage repairable by unit.

Aircraft D-Status Possession Codes—Sample D-status codes (specified in AFI 21-103): DJ=awaiting depot level maintenance work; DK=contract work; DL=depot delivery flight; DM=undergoing depot level maintenance; DO=programmed depot maintenance; DR=post depot/contractor maintenance.

Allowance Standard (AS)—Authorized document that identifies the amount and type of equipment for an organization.

Alternate Mission Equipment (AME)—Equipment identified to a higher end-item, not listed in the table of allowance. Normally, Dash-21 equipment.

Awaiting Maintenance (AWM)—Designation for a deferred discrepancy on an aircraft awaiting maintenance.

Awaiting Parts (AWP)—Designation for a deferred discrepancy on an aircraft awaiting parts.

Bench Stocks—Stores of expendability, recoverability, reparability coded (ERRC) XB3 items kept on-hand in a work center to enhance maintenance productivity.

Cannibalization—Authorized removals of a specific assembly, subassembly, or part from one weapons system, system, support system, or equipment end-item for installation on another end-item to meet priority mission requirements with an obligation to replace the removed item.

Certified Load Crew Member—A load crew member trained and certified by position according to **Chapter 12**

Class I and Class II Aircraft—Classification categories used when calculating aircraft's weight and balance.

Code 1, Code 2, Code 3, Code 4, Code 5—Landing status codes used by aircrew to inform maintenance of their inbound aircraft's condition. A Code 1 aircraft has no additional discrepancies other than those it had when it last departed; a code 2 aircraft has minor discrepancies, but is capable of further mission assignments; a code 3 aircraft has major discrepancies in mission-essential equipment that may require repair or replacement prior to further mission tasking; a code 4 indicates suspected or known nuclear, biological, or chemical contamination; and a code 5 indicates battle damage. Codes 4 and 5 are entered into the MIS as code 8.

Combat Air Forces (CAF)—Term to collectively describe all ACC, AFRC, ANG, PACAF, and USAFE fighter/bomber units.

Commodity Time Compliance Technical Order—TCTO concerning a designated item, subsystem, or system that is not identified as a weapon or military system.

Composite Tool Kit (CTK)—A controlled area or container used to store tools or equipment and maintain order, positive control, and ease of inventory. CTKs are assembled as a kit and designed to provide quick, easy visual inventory and accountability of all tools and equipment. CTKs may be in the form of a toolbox, a shadow board, shelves, system of drawers (Stanley Vidmar, Lista, etc.), cabinets, or other similar areas or containers. The CTK contains tools and equipment necessary to accomplish maintenance tasks, troubleshooting, and repair.

Condition-Based Maintenance Plus—A set of maintenance processes and capabilities derived from real-time assessment of weapon system condition obtained from embedded sensors and/or external tests and measurements using portable equipment. The goal of CBM+ is to perform maintenance only when internal/external sensors indicate the need instead of performing maintenance on a periodic basis.

Course Control Documents (CCD)—Set of documents that dictate how a course is taught. These documents include a course training standard, course chart, and a plan of instruction.

Crash Damaged or Disable Aircraft Recovery (CDDAR)—The ability to move damaged or disabled aircraft using specialized equipment

Crosstells—Cross-tells are used to highlight trends, benchmarks or safety conditions relating to maintenance equipment, personnel, training or processes. A crosstell is initiated to assist other maintenance or logistics personnel with similar equipment to do their jobs more safely and/or efficiently. Typically a crosstell will be initiated when a condition or trend is discovered regarding (but not limited to) a weapon system or common components that should be shared with other users or potential users. This information should be transmitted using DMS to ensure widest dissemination and ensure it is brought to the attention of unit commanders in order to prevent or mitigate mishaps, injury or damage to AF personnel, equipment or property. Typically crosstells will provide relevant background information and history and can include such information as NSNs, part numbers, specific location of problem areas, etc.

Customer Wait Time (CWT)—CWT for LRUs is the total elapsed time between the issuance of a customer order and satisfaction of that order, regardless of source (immediate issues or backorders), and can include issues from wholesale and/or retail stocks as well as various other arrangements. CWT for end items (engines and pods) includes time for the retrograde and serviceable transportation legs.

Debriefing—Program designed to ensure malfunctions identified by aircrews are properly reported and documented.

Decertification—The removal of certification status from a person for a specific task

Dedicated Crew Chief—DCCs are first-level supervisors in the flightline management structure who manage and supervise all maintenance on their aircraft, and are selected on the basis of initiative, management and leadership ability, and technical knowledge.

Delayed or Deferred Discrepancies—Malfunctions or discrepancies not creating NMC or PMC status that are not immediately corrected.

Depot Level Maintenance—Maintenance consisting of those on- and off-equipment tasks performed using the highly specialized skills, sophisticated shop equipment, or special facilities of a supporting command; commercial activity; or inter service agency at a technology repair center, centralized repair facility, or, in some cases, at an operating location. Maintenance performed at a depot may also include organizational or intermediate level maintenance as negotiated between operating and supporting commands.

Dispatchable CTK—CTK issued out to perform a specific task or for use by a specific AFSC and is designed to be used outside the tool room or work center.

Equipment Custodian—Individual responsible for all in-use equipment at the organizational level whose duties include requisitioning, receiving, and controlling of all equipment assets.

Equipment Identification Designator (EID)—A number assigned to a piece of shop equipment, used to track status and accountability.

Equipment Items—Item authorized in the allowance standard within an organization.

Evaluated Load—A loading task that is assessed according to **Chapter 12**

Flight Chief—NCO responsible to the maintenance officer or superintendent for management, supervision, and training of assigned personnel.

FK or FV—Prefix used to identify the munitions supply account. FV denotes units utilizing the Combat Ammunition System (CAS) system and FK denotes units utilizing SBSS or manual records supply point within a munitions'' operations unit for conventional munitions.

Immediately Prior to Launch (IPL)—Specific tasks accomplished immediately prior to launching an aircraft.

In-Process Inspection (IPI)—Inspection performed during the assembly or reassembly of systems, subsystems, or components with applicable technical orders.

Individual Tools and Equipment—Tools and equipment that are available for individual sign-out but stored in the tool room in storage bins, cabinets, shelves, etc., with every item having an assigned location (e.g., flashlights, ladders).

Intermediate-Level Maintenance—Maintenance consisting of those off-equipment tasks normally performed using the resources of the operating command at an operating location or at a centralized intermediate repair facility.

Lead Crews—A load crew certified by the load standardization crew (LSC), which is assigned to WS to assist in conducting the weapons standardization program.

Levels—Computed and authorized requirements for a quantity of assets.

Loading Standardization Crew (LSC)—A load crew designated by the WWM and the WS superintendent to administer the weapons standardization program. LSC members have certification and decertification authority

Loading Task—The actions required by one crew member, in a designated position, to accomplish a munitions load

Local Commander—The group commander with responsibility for maintenance (as applicable to loading technical data).

Locked Out or Tag Out—Energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which or through which a lock can be affixed. Tag out devices, shall be substantial enough to prevent inadvertent or accidental removal.

Mobility Air Forces (MAF)—Term to collectively describe all AFRC, ANG, AMC, PACAF, and USAFE airlift/tanker units.

Maintenance Training—Any proficiency, qualification, or certification tasking required by a technician to perform duties in their primary AFSC.

Master Inventory List (MIL)—Primary source document for inventory of CTKs. The MIL indicates the total number of items in each drawer or section of the tool kit. MIL may be automated.

Mission Design Series (MDS)—Alpha and numeric characters denoting primary mission and model of a military weapons system.

Minimum Proficiency Requirement Loading (MPRL)—Recurring loading of munitions for which a person is certified.

Munitions Decertification—Removal of the certification status of a person that precludes them from loading a specific type munitions or MFG.

Normally Installed Equipment (NIE)—Bomb racks, launchers, and pylons normally installed on an aircraft.

No-Lone Zone—Area where the two-person concept must be enforced because it contains nuclear weapons, nuclear weapons systems, or certified critical components.

Non-Release—System malfunction in which a weapon does not release from the delivery system.

Off-Equipment Maintenance—Maintenance tasks that are not or cannot be effectively accomplished on or at the weapon system or end-item of equipment, but require the removal of the component to a shop or facility for repair.

On-Equipment Maintenance—Maintenance tasks that are or can be effectively performed on or at the weapon system or end-item of equipment.

Operating Stock—The bits and pieces needed to support a maintenance work center that does not meet the criteria of bench stock. It includes reusable items such as dust covers, hydraulic line covers, caps, items leftover from work orders, TCTOs, and items deleted from bench stock.

Operational Readiness Inspection (ORI)—Inspection that measures a unit's war fighting readiness.

Organizational Level Maintenance—Maintenance consisting of those on-equipment tasks normally performed using the resources of an operating command at an operating location.

Permissive Action Link (PAL)—Device included in or attached to a nuclear weapons system to preclude arming and launching until insertion of a prescribed discrete code or combination.

Personnel Protective Equipment (PPE)—Equipment required to do a job or task in a safe manner.

Preload—A complete munition and suspension equipment package ready for loading

Possession Purpose Code (PPC)—Also known as Purpose Identifier Code, it is a two-letter code that indicates ownership (possession) of the asset. For example, "BQ" = major maintenance awaiting AFMC decision/action; "CC" = combat; "DO" = depot level maintenance possession for depot work; etc.

Primary Aerospace Vehicle Authorized (PAA)—Aircraft authorized for performing a unit's mission (e.g., combat, combat support, training, test & evaluation). The PAA forms the basis for allocating operating resources to include manpower, support equipment, and flying hour funds. The operating command determines the PAA required to meet their assigned missions. "Authorized" refers to the number and type of aircraft an organization is programmed to possess.

Primary Aerospace Vehicle Inventory (PAI)—Aircraft assigned to meet the PAA. "Inventory" refers to the number of aircraft actually assigned to a unit and identified against a corresponding authorization.

Production Supervisor—Senior NCO responsible for squadron maintenance production. Directs the maintenance repair effort.

Programmed Depot Maintenance (PDM)—Inspection requiring skills, equipment, or facilities not normally possessed by operating locations.

Quality Assurance (QA)—Individual who monitors a contractor on a daily basis and who is involved in every aspect of a contract to ensure the contractor is in compliance with that contract.

Quarterly Evaluation (QE)—Recurring calendar task evaluations required by munitions and weapons personnel.

Queen Bee—A facility that performs engine repair for a specified region.

Quick Reference List (QRL)—Listing of fast moving, high use items required for primary mission aircraft. The basic purpose of the QRL is to provide maintenance personnel with a speedy way to place a demand on the supply system.

Rag—A remnant of cloth purchased in bulk or a standardized, commercial quality, vendor-supplied shop cloth (uniform size and color) or similar material used in general industrial, shop, and flightline operations.

Reclama—A request to a duly constituted authority to re-consider its decision or its proposed action (see JP 1-02).

Recurring Discrepancy—A recurring discrepancy is one that occurs on the second through fourth sortie or attempted sortie after corrective action has been taken and the system or sub-system indicates the same malfunction when operated.

Remote Split Operations—Occurs when the ground control stations, the Unmanned Aerial Vehicle (UAV) launch and recovery functions, and the satellite uplink are geographically separated.

Repair Cycle Asset—Any recoverable item with an expendability, recoverability, reparability code (ERRC) category of XD or XF.

Repeat Discrepancy—One repeat discrepancy occurs on the next sortie or attempted sortie after corrective action has been taken and the system or sub-system indicates the same malfunction when operated.

Retrograde—Returning assets (particularly reparable assets) from the field to their source of repair.

Shop CTK—Tool kits (not dispatched) used by work center personnel during a shift, provided a single person is responsible for the tool kit.

Shop Stock—Includes items such as sheet metal, electrical wire, fabric, and metal stock, used and stored within a maintenance work center to facilitate maintenance.

Spares—Serviceable assets that are available for future use, and in the logistics pipeline. The term spare carries the assumption that there are already enough assets in the AF inventory to satisfy end item or quantity per aircraft requirements.

Special Certification Roster (SCR)—Management tool that provides supervisors a listing of personnel authorized to perform, evaluate, and inspect critical work.

Special Purpose CTK—Small individually issued tool kits that because of the nature of contents or type of container could preclude shadowing or silhouetting (e.g., launch kits, recovery kits, cartridge cleaning kits, oxygen servicing kits, etc).

Subcrew—Two or more certified and/or qualified personnel who may perform specific tasks

Supply Point—Forward warehouse located within or near the maintenance work center.

Tail Number Bins (TNB)—Locations established and controlled to store issued parts awaiting installation and parts removed to FOM. Holding bins are set up by tail number, serial number, or identification number.

Task Assignment List (TAL)—Functional grouping of procedural steps from applicable -33 series TOs, by crew position, to be accomplished in sequence by each crew member during an operation.

Technical Administrative Function—Function responsible for ordering and posting instructions, processing all orders, enlisted performance ratings, and general administrative tasks for the section.

Technical Order Distribution Office (TODO)—Function required to maintain records on TOs received and distributed.

Time Compliance Technical Order (TCTO)—Authorized method of directing and providing instructions for modifying equipment, and performing or initially establishing one-time inspections.

Tool Storage Facility/Tool Room—A controlled area within a work center designated for storage and issue of tools and equipment.

Total Asset Visibility—The capability to provide users with timely and accurate information on the location, movement, status, and identity of units, personnel, equipment, materiel, and supplies. It also includes the capability to act upon that information to improve overall performance of the Department of Defense's logistic practices.

Unit Committed Munitions List (UCML)—List of primary, support, and limited-use munitions necessary to meet unit operational/training requirements.

Unmanned Aerial Vehicle (UAV)—An unmanned aircraft that is either remotely piloted (e.g., Predator) or programmed (e.g., Global Hawk).

Urgency Justification Code (UJC)—Two-digit code used to reflect the impact and type of need. The urgency of need designator (UND) fills the first position of the UJC. Use of UND 1, A and J is restricted and is verified by designated personnel.

Utilization Rate (UTE Rate)—Average number of sorties or hours flown per primary assigned aircraft per period. Usually time period is based on a monthly rate.

Weapons Certification—The act of verifying and documenting a person's ability to load a particular type of aircraft, and munition or MFG within established standards

Weapons Locally-Manufactured Equipment (LME)—All equipment that measures, tests, or verifies system, subsystem, component, or item integrity. It also includes equipment such as handling dollies, storage racks (except storage shelves), maintenance stands, or transport adapters. It does not include simple adapter cables and plugs constructed as troubleshooting aids to replace pin-to-pin jumper wires specified in TOs.

Weapons Standardization (WS)—Organization comprised of the WWM, a Superintendent, the Load Standardization Crew, an academic instructor, and lead crews.

Weapons Task Qualification—A munitions related task not requiring certification

Weight and Balance (W&B) Program—Program used in calculating, verifying, updating, and computing weight and balance on a weapon system.

Attachment 1 (ANG)

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 11-206, *General Flight Rules*.

ANGI 10-401, *Air National Guard Unit Type Code Management*.

ANGI 21-105, *Corrosion Control, Nondestructive inspection, and Oil Analysis Programs*.

ANGPAM 21-103, *Maintenance Data Systems Analysis Guide*.

TO 00-20-5-1-1*, Engine Historical Records F-100-PW-100/200/220 Engines.*

Abbreviations and Acronyms

ACW—Air Control Wing**.**

AFPSL—Air Force Primary Standards Laboratory.

AIS—Avionics Intermediate Shop.

ALMS—Automated Logistics Management System**.**

AMF—Aircraft Maintenance Flight.

ANGRC—Air National Guard Readiness Center**.**

ATS—Automated Training Management Sub-System.

BDT—Bureau Directed Travel.

CEM—Chief Enlisted Manager.

CMF—Component Maintenance Flight.

CMS—Calibration Measurement summaries.

COMPES—Contingency Operations/Mobility Planning and Execution System.

CONR—Continental United States NORAD.

CSM—Computer Systems Manager.

CSR—Customer Service Representative.

CTOCU—Central Technical Order Control Unit.

DAD—Detached Alert Detachment**.**

DETCO—Detachment Commander.

DLR—Depot Level Repairables.

DMC—Defense Mega Center.

EAL—Entry Authorization List.

EDW—Enterprise Data Warehouse**.**

EMF—Equipment Maintenance Flight.

FAX—Facsimile

FG—Force Generation.

FSA—Functional Server Administrator.

FW—Fighter Wing.

GE—General Electric**.**

GCS—Guidance Control System.

IATS—Intermediate Automated Test Station.

IMT—Information Management Tools.

JEDMICS—Joint Engineering Data Management Information and Control System.

LEP—List of Effective Pages.

LTERM—Logical Terminal.

LM—Lockheed Martin.

M/C—Munitions Control.

MAF—Mobility Air Forces**.**

MC2K—Munitions Control 2000.

MCDP—Magnetic Chip Detector Analysis Program.

MDD—Maintenance Data Documentation.

MSE—Maintenance Standardization Evaluation.

N/A—Not Applicable.

NCO—Non-Commissioned Officer

NFTBU—Nestable Fuel Tank Build Up.

NORAD—North American Aerospace Defense (NORAD).

P2—Pollution Prevention.

PAFSC—Primary AFSC**.**

PR—Process Review.

Pro Super—Production Supervisor.

QPL—Qualified Products Listing.

QR—Quality Review.

QuAD—Quality Assurance Database.

RH—Relative Humidity.

RNAF—Royal Netherlands Air Force**.**

RNRIU—Ruggedized Nuclear Remote Interface Units.

SEM/EDX—Scanning Electron Microscope/Energy Dispersive X-Ray.

SFO—Simulated Flameout**.**

SMO—Squadron Maintenance Officer.

SPOC—Single Point of Contact.

STU—Secure Telephone Unit

T/A—Transient Alert.

T/E/C—Trainer/Evaluator/Certifier**.**

TIM—Technical Interchange Meeting.

TOPS—Technical Order Page Supplements.

UAE—United Arab Emirates.

UEC—Unit Environmental Coordinator.

Terms

Missed Carded Item—A carded item that is either not complied with or was improperly completed.

Attachment 2

SUPPLY REPORTS AND LISTINGS

Repair Cycle Asset Management Listing (D23). This listing is used to monitor repair cycle assets and as a management product to monitor the stock position and repair cycle status of repairable (DIFM) assets. It may be produced in several sequences and is provided to the customer daily. Refer to AFMAN 23-110, *USAF Supply Manual*.

Material Support Division.(RSD) Due In From Maintenance (DIFM) Report. Provides senior managers, flight OIC, and flight chiefs information on assets remaining in the repair cycle over a user defined number of days (e.g., 10 days) which are tying up large amounts unit O&M funds (e.g., over $10,000). This listing allows management to spot check the health of the repair cycle under the MSD concept and is available on request. Use this list to avoid penalty charges for DIFM items in the repair cycle greater than 60 days.

AWP Validation Listing (D19). Provides AWP due-outs and corresponding due-in and status details. This information helps determine the status of AWP end items and their corresponding bits and pieces and identifies cross-cannibalization candidates. It is a daily listing and is provided to all work centers involved with AWP management.

Bench Stock Review Listing (M04). Listing of recommended additions, changes, and deletions to organizational bench stocks based on consumption patterns. Do not automatically make additions/deletions based on this listing but rather on expected future demands. The M04 is provided monthly.

Daily Document Register (D04). The D04 is used to monitor and validate supply transactions, which have occurred against a unit's supply account. Review daily for all charges, credits, and other transactions (ISUs, TINs, DORs, etc.) affecting your account.

Delinquent Document Listing (R59). This report contains delinquent and pre-delinquent document control records and all delinquent source document records.

Document Validation Report (DVR). Used to validate parts request records by end item serial number (e.g., when performing 14 day records checks).

Due-out Validation Listing (M30). Provide the user a list of all outstanding due-outs for their organization as reflected in the supply system. Ensure all due-outs are valid and still required. If changes are required, annotate the listing and return a copy to base supplyLRS. The listing is provided monthly.

Event List (EVL). This is an on-line IMDS unique inquiry that provides supply document numbers, aircraft discrepancies and equipment ID by event ID.

MICAP (NMCS/PMCS) Supply Data Inquiry (NSD). An on-line IMDS inquiry that lists MICAP information by equipment ID.

MICAP Record Retrieval/Update (1MM). An on-line SBSS inquiry that lists information on current MICAP conditions by equipment ID.

MICAP Status Report (R49). This report provides the current status of all active MICAP requirements and provides the data in clear text. Use this product to validate serial numbers of parts required for

MICAP end items. In units supported by a base supplyLRS using the MICAP Asset Sourcing System (MASS), the E-40 may be used in lieu of the R49.

Monthly TCTO Reconciliation Listing. This listing provides TCTO kit status and is used to identify or reconcile differences between supply computer records and maintenance TCTO documents. Refer to AFMAN 23-110, *USAF Supply Manual*. Use monthly to perform this reconciliation.

Organization Effectiveness Report (M24). The M24 reflects the level of supply effectiveness in meeting unit requirements. Percentages of effectiveness in issue/support and bench stock support for the past month are provided. Potential support problems may be indicated by the percentage of support provided in each area. This is a monthly product.

Organizational Bench Stock Listing (S04). This is a listing of all items and quantities authorized on the work center bench stock. The listing is provided semiannually or as requested.

Priority Monitor Report (D18). Use this report to monitor due-outs and their corresponding status. It is provided to organizations having due-outs at a locally determined frequency (i.e., daily for UND A, weekly for UND B).

Repair Cycle Data List (Q04). Provides data applicable to each repair cycle item. Data provided includes history of past repair, NRTS, condemn actions, percent of base repair and repair activity. The listing is provided quarterly.

Serial Number Record Inquiry. This on-line SBSS inquiry provides all due-out requirements (MICAPs, deferred discrepancies, etc.) for an equipment ID.

Special Level Review Listing (R35). Provides information on all items with adjusted stock levels.

Supply Point Listing (Q13). This listing provides all supply point details, with the quantity authorized, on-hand, and due-out for each detail. It also identifies shortages, excesses and shelf-life items. Q13 is provided quarterly or as requested.

TCTO Status Report (TCS). The TCS is a IMDS background product that identifies serial numbers, TCTO status codes, and kit, part, and tool requirements for equipment requiring modification, as well as a summary of affected equipment by TCTO status codes.

Attachment 3

AIRCRAFT COMMANDER FEEDBACK ON FCC

MEMORANDUM FOR <Unit Designation/Office Symbol> *Date*
<Street>
<Base, State, and Zip Code>

FROM: <Aircraft Commander>
<Street>
<Base, State, and Zip Code>

SUBJECT: Aircraft Commander Feedback of the Flying Crew Chief (FCC)

Was the FCC knowledgeable of the aircraft and the systems?
a - Extremely knowledgeable
b - Sufficient knowledge
c - Lacks knowledge
d - Not observed

Did the FCC know the status of PMC and NMC discrepancies?
a - Always
b - Most of the time
c - Rarely
d - Never

Did the FCC perform duties willingly and enthusiastically?
a - Always
b - Sometimes
c - Never
d - Not Observed

What type of working relationship did the FCC have with the aircrew?
a - Outstanding
b - Good
c - Fair
d - Poor

Rate the overall maintenance support provided by the FCC:
a - Outstanding
b - Good
c - Fair
d - Poor

This FCC was:
a - An asset to the FCC program
b - A hard worker, but needs more experience
c - Just getting by.
d - Detriment to the FCC program

Remarks:

POC is <FCC Program Manager's Name, office symbol, duty phone number>.

<signed>
Aircraft Commander

NOTE: Please fold and return to the squadron FCC Program Manager upon return to home station.

Attachment 4

QUARTERLY FCC REPORT FORMAT

MEMORANDUM FOR HQ MAJCOM/A4M *Date*

FROM: <Unit Designation/Office Symbol>
<Street>
<Base and Zip Code>

SUBJECT: <State fiscal quarter (e.g., FY98/3)> Quarterly Flying Crew Chief Report (RCS: HAF-ILM(Q&A)0011)

In accordance with AFI 21-101 <unit designations> report is submitted.

Number of C-coded FCC positions on the Unit Manpower Document entitled to be filled. Include approved changes (losses/ increases):

Number of people filling C-coded positions:

Number of qualifying missions flown per quarter by C-coded crew chiefs. Include the number of TO directed missions:

Number of qualifying missions flown by personnel without C-coded prefix. Include TO directed missions flown by non c-coded prefix personnel:

Number of all missions away from home station that required FCCs:

Total number of days TDY for all C-coded crew chiefs on qualifying missions:

Total number of days TDY for all non C-coded crew chiefs on qualifying missions:

Unit and MAJCOM remarks and overall program assessment. Include remarks to justify vacant positions:

FCC Program Manager is <rank, name>, office symbol, DSN number.

<Sign>

Commander, <Unit Designation>

Attachment 5

ANNUAL FCC REPORT

MEMORANDUM FOR HQ MAJCOM/A4M or DOM *Date*

FROM: <Unit Designation/Office Symbol>
<Street>
<Base and Zip Code>

SUBJECT: <state fiscal year (e.g., FY98)> Annual Flying Crew Chief Report RCS: HAF-ILM(Q&A)0011)

In accordance with AFI 21-101<unit designations> report is submitted.

Number of C-coded FCC positions on the Unit Manpower Document entitled to be filled. Include approved changes (losses/ increases):

Number of people filling C-coded positions:

Number of qualifying missions flown per quarter by C-coded crew chiefs. Include the number of TO directed missions:

Number of qualifying missions flown by personnel without C-coded prefix. Include TO directed missions flown by non c-coded prefix personnel:

Number of all missions away from home station that required FCCs:

Total number of days TDY for all C-coded crew chiefs on qualifying missions:

Total number of days TDY for all non C-coded crew chiefs on qualifying missions:

Unit and MAJCOM remarks and overall program assessment. Include remarks to justify vacant positions:

FCC Program Manager is <rank, name>, office symbol, DSN number.

<Sign>

Commander, <Unit Designation>

Attachment 6

FCC SDAP REQUEST

MEMORANDUM FOR HQ MAJCOM/A4M or DOM *Date.*

FROM: <Unit Designation/Office Symbol>
<Street>
<Base and Zip Code>

SUBJECT: Flying Crew Chief (FCC) SDAP Positions <Increase/Decrease> Request

In accordance with <unit designations> requests <increase or decrease> of <state quantity of positions>.

Provide brief justification; include comments about force structure changes, additional mission requirements, etc.

FCC Program Manager is <rank, name>, office symbol, DSN number.

<Sign>

Commander, <Unit Designation>

Attachment 7

MAINTENANCE RECOVERY TEAM (MRT) TASKING CHECKLIST.

A7.1. The MRT POC will:

A7.1.1. Record the following:

A7.1.1.1. Aircraft MDS and tail number.

A7.1.1.2. Location.

A7.1.1.3. Point of contact (POC) and phone number.

A7.1.1.4. All discrepancies requiring support.

A7.1.1.5. Type of and desired skill level of needed technician.

A7.1.1.6. Parts requirements.

A7.1.1.7. Equipment requirements (including tools, testers, etc.)

A7.1.1.8. Mode of transportation and projected date/time of departure. Evaluate capabilities and determine the best mode of transportation (military airlift, commercial, or government vehicle).

A7.1.1.9. Passport/Visa/Immunization requirements for personnel.

A7.1.2. Contact the applicable maintenance supervision to review requirements and request support from the responsible units to assemble an MRT.

A7.1.3. Brief MRT personnel concerning their duties and responsibilities. Ensure the MRT chief understands the responsibilities Emphasize the following:

A7.1.3.1. The MRT is required to call the home station MOC upon arrival to provide a phone number where they can be contacted.

A7.1.3.2. The MRT is responsible for their equipment and parts:

A7.1.3.2.1. Verify necessary parts are available. Open each container to ensure the right part(s) are in the box prior to departure.

A7.1.3.2.2. Check special tools, support and test equipment for serviceability prior to departure.

A7.1.4. Ensure TDY orders are generated for MRT. Consider the following authorizations and provide as required:

A7.1.4.1. Mission Route Support (MRS) or Mission Essential Ground Personnel (MEGP).

A7.1.4.1.1. MRS permits the bumping of cargo to allow space for the MRT and their equipment.

A7.1.4.2. Advance per diem.

A7.1.4.3. Commercial travel.

A7.1.4.4. Rental car.

A7.1.4.5. Variations:

A7.1.5. Direct the responsible shop to order the required parts and the applicable unit to select the required equipment items. If requirements are not known, make contact with the AC/flight engineer/ crew chief to determine what items are required.

A7.1.5.1. Items too large or heavy to be carried will be coordinated with MAJCOM and processed by the responsible shop and given to the TMF for shipment.

A7.1.5.2. If parts can not be sourced locally, consider directing cannibalization.

A7.1.6. Commercial transportation of a MRT and equipment is, in many cases, the most expeditious method. Consider the following:

A7.1.6.1. Airline:

A7.1.6.2. Surface (bus, rail, and limousine).

A7.1.6.3. Air Express Small Package Service.

A7.1.7. Coordinate transportation requirements with TMF. Review the following:

A7.1.7.1. Destination, and priority.

A7.1.7.2. Selected mode of transportation and itinerary.

A7.1.7.3. Names for MRT personnel and nomenclature of equipment items and parts.

A7.1.7.4. Authorization for excess baggage allowance if necessary.

A7.1.7.5. Record TCNs, government bills of lading (GBL), and any applicable billing or shipment numbers.

NOTE: Shipment of large or heavy items by commercial airline mandates prior coordination with airline personnel by MOC or the MRT. To maintain control of parts/equipment, they must be hand-carried or checked as baggage. If an item is not accepted as carry-on luggage or checked as baggage, purchase of an extra seat to accommodate it must be considered and is recommended. Advance coordination with the airline is the key to a successful movement without unnecessary delays.

A7.1.8. Maintain contact with the MRT or the unit responsible for the parts/equipment shipment to ensure that all resources arrive in time to make the scheduled departure.

Attachment 8

MAINTENANCE RECOVERY TEAM (MRT) CHIEF RESPONSIBILITIES

A8.1. Prior to Departure. The MRT chief will:

A8.1.1. Receive complete MRT briefing.

A8.1.2. Read and understand all MRT chief responsibilities.

A8.1.3. Ensure all personnel on the MRT are prepared and aware of their part in recovery actions.

A8.1.4. Ensure all equipment/parts/tool kits/technical orders are properly prepared for shipment.

A8.1.4.1. Verify necessary parts are available. Open containers to ensure the right part(s) are in the box.

A8.1.4.2. Check special tools, support and test equipment for serviceability.

A8.2. Upon Arrival. The MRT chief will:

A8.2.1. Contact home station MRT POC.

A8.2.2. Report to the mission commander and/or MOC.

A8.2.3. If possible, debrief air crew and make initial determination of discrepancy.

A8.2.4. Compute MRT duty day:

A8.2.4.1. Emphasize safety.

A8.2.4.2. Your initial duty day begins at the time you reported to work prior to MRT tasking. The total duty day (home station duty, travel, and recovery site duty) will not exceed 16 hours for any team member. Technicians will be afforded a minimum 8 hours uninterrupted rest. (Refer to **Chapter 1**)

A8.2.4.3. MRT work starts immediately upon arrival unless duty day has expired en route.

A8.2.4.4. Normal work/rest period at recovery site is 12 hours of work, followed by 12 hours of rest. The 12-hour work period may be extended with concurrence of the MAJCOM and/or the group commander at the deployment site. Do not overwork your team and compromise safety. You are responsible for their care.

A8.2.4.5. If any questions arise consult the AC, group commander, senior maintenance representative, or MAJCOM.

A8.2.5. Report to home station MRT POC with the following information.

A8.2.5.1. Specific discrepancies.

A8.2.5.2. Estimated time in-commission (ETIC).

A8.2.5.3. Billeting room/phone (if applicable).

A8.2.5.4. Expiration time of MRT duty day.

A8.3. During recovery, report to the MRT POC to the following schedule:

A8.3.1. Upon initial assessment of actual discrepancy.

A8.3.2. If maintenance/supply status changes.

A8.3.3. As additional requirements become known (parts, equipment, expertise, etc.).

A8.3.4. At the end of shift or upon job completion.

A8.4. Upon completion of recovery. The MRT chief will:

A8.4.1. Assemble all parts/equipment/tools and prepare them for return shipment. Reparable assets brought with you or shipped to you from your home unit must be returned to your unit. Reparable assets issued at the recovery location will require turn-in at the recovery location. If in doubt about disposition, contact the home station MRT POC.

A8.5. Upon return to home station. The MRT chief will notify MRT POC of return.

Attachment 9

MAINTENANCE RECOVERY TEAM (MRT) CHIEF TASKING CHECKLIST

A9.1. Team Chief:

Name Rank AFSC

A9.2. Other Personnel:

Name Rank AFSC

A9.3. Recovery Location:

A9.4. Aircraft Type:

A9.5. Tail Number:

A9.6. Mission Number:

A9.7. Next Destination:

A9.8. Mission Commander: Room/Phone:

A9.9. Operations Officer/MX SUPT:

A9.10. Communications at Recovery Site:

A9.11. Specific Discrepancies:

A9.12. Equipment Required: Item: TCN:

A9.13. Part(s) Required: NSN: TCN:

Nomenclature:

Have required parts been bench checked before packing? Y / N / NA

A9.14. Tool Kits Required: Kit Number: TCN:

A9.15. Support Acft Tail No:

A9.16. Mission Number:

A9.17. Show Time:

A9.18. Orders Prepared? Y / N

A9.19. ETD:

A9.20. Passport/Visa required? Y / N

A9.21. Required Clothing/Money/Shot Records/etc.:

A9.22. Military Travel Request (MTR) prepared? Y / N

Attachment 10

WAIVER/CHANGE REQUEST FORMAT

The following format should be used in submitting waiver requests or recommended changes to this publication.

A10.1. Submitting Organization

A10.2. Date

A10.3. Subject (Waiver or Change Request)

A10.3.1. Priority of Request (Urgent or Routine)

A10.4. Reference: include chapter, paragraph, and line number or Table/Figure number.

A10.5. Proposed waiver or change requested

A10.6. Background (unique circumstances or history leading up to request)

A10.7. Discussion (rationale for waiver or change and any workarounds)

A10.8. Recommendation (include unit(s) to which waiver/change applies and duration of waiver)

A10.9. POC (Name, office symbol, DSN, and e-mail)