

28 January 1994

## QUALITY ASSURANCE

### Precision Measurement Equipment Laboratory

1. **Objective.** As prescribed in AFI 38-201, Air Force Manpower Determinant System dated May 91 (formerly AFR 8-10), this Air National Guard Manpower Standard (ANGMS) quantifies the full-time manpower requirement to accomplish the tasks described in the work center description (WCD) for varying levels of workload volume within the Precision Measurement Equipment Laboratory (PMEL) Quality Assurance function.

2. **Authority.** The AFI 21-series (formerly 66- and 74-2 series of Air Force (AF) and/or Air National Guard (ANG) directives contain command policy and procedural guidance for the PMEL Quality Assurance function. This ANGMS has been developed in accordance with procedures contained in AFPAM 38-208, AF Management Engineering Program (MEP) Policies, Responsibilities and Requirements dated May 88 (formerly AFR 25-5, 16 May 88).

3. **Applicability:**

a. This standard applies to the following ANG Type II PMELs with full-time authorizations in the PMEL Quality Assurance function:

- (1) 102 FW, Otis ANGB MA
- (2) 127 FW, Selfridge ANGB MI
- (3) 148 FG, Duluth IAP MN
- (4) 190 ARG, Topeka KS

b. This standard applies to peacetime operations only.

4. **Standard Data:**

a. Classification. Type II.

b. Approval Date. 17 Aug 93.

c. Man-hour Data Source. Operational Audit (technical estimate and historical record techniques).

d. Standard Man-hour Equation:  $Y = 49.50 + 3.100X$

e. Workload Factor (WLF):

(1) Title. A quality verification inspection (QVI) completed.

(2) Definition. A quality verification inspection completed by personnel assigned to the PMEL Quality Assurance function.

(3) Source. Semiannual RCS LOG-LG(SA) 7808 Report, ANG Attachment #1, maintained by ANGRC/LGM; number of QVIs completed by Quality Assurance. Two cycles of RCS LOG-LG(SA) 7808 Report are required to analyze the complete workload.

5. **Application Instructions:**

a. The valid man-hour range for this ANGMS is 127.40 through 368.30. Extrapolation limits represent the upper and lower man-hour values that bind the applicability range. These limits represent the maximum amount the equation can be extended.

b. Calculate the correct value for the WLF identified in paragraph 4e above. Substitute this value for the appropriate value of X in the man-hour equation identified in paragraph 4d.

c. Divide the computed allowed man-hours by the appropriate civilian Man-hour Availability Factor (MAF) to determine the total manpower requirements.

d. Refer to the Standard Manpower Table, AF Form 1113, for skill and grade distribution. Find the column in which the total number of authorizations fall, then read up and across to determine total manpower by AFSC.

6. **Statement of Conditions.** The normal hours of operation for this work center are 8 hours per day, 5 days per week. There are no other standard of living constraints that impact the daily operation of this work center.

**PUBLISHED UNDER THE AUTHORITY OF THE SECRETARY OF THE AIR FORCE**

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**No. of Printed Pages: 8**

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- 2 Attachments**
- 1. Work Center Description**
- 2. Standard Manpower Table**

**WORK CENTER DESCRIPTION****QUALITY ASSURANCE  
Precision Measurement Equipment Laboratory****DIRECT:****1. PRECISION MEASUREMENT EQUIPMENT LABORATORY (PMEL) QUALITY ASSURANCE PROGRAM:**

**1.1. SAMPLES COMPLETED MAINTENANCE ACTION.** Samples completed maintenance action using multilevel continuous sampling system.

**1.1.1. GENERATES A QUALITY ASSURANCE (QA) SUMMARY REPORT LISTING.** Determines Test, Measurement, and Diagnostic Equipment (TMDE) that requires Quality Verification Inspection (QVI) and 100% outgoing inspection.

**1.1.2. SEGREGATES TMDE FOR QVI AND 100% OUTGOING INSPECTION.** Places TMDE in hold area.

**1.2. PERFORMS INSPECTION:**

**1.2.1. PERFORMS QVI INSPECTION.** Performs on-base/off-base QVI inspection on certified TMDE.

**1.2.1.1. INSPECTS ITEM.** Inspects item for safety violation (wiring, fuses, foreign object damage [FOD], and rattle).

**1.2.1.2. VERIFIES TMDE.** Verifies equipment part number, serial number, and PMEL Automated Management Subsystem (PAMS) bar code label number.

**1.2.1.3. VERIFIES WORK UNIT CODE (WUC).**

**1.2.1.4. VERIFIES CALIBRATION PROCEDURE.**

**1.2.1.5. GATHERS EQUIPMENT FOR QVI.**

**1.2.1.6. SETS UP EQUIPMENT FOR QVI.**

**1.2.1.7. PERFORMS COMPLETE QVI IN ACCORDANCE WITH (IAW) CALIBRATION PROCEDURE.**

**1.2.1.8. PROCESSES COMPLETED QVI TO CUSTOMER PICK-UP AREA.**

**1.2.1.9. RETURNS EQUIPMENT USED FOR QVI TO STORAGE.**

**1.2.1.10. COMPLETES INSPECTION REPORT.** Completes AFTO Form 442, TMDE Inspection Report, or PAMS log for each QVI completed.

**1.2.1.11. PROCESSES QVI FAILURE:**

**1.2.1.11.1. REVIEWS QVI FAILURE WITH TECHNICIAN AND SUPERVISOR.**

**1.2.1.11.2. PROCESSES FAILED QVI INTO PAMS.** Places the failed QVI into technician module and returns item to awaiting maintenance (AWM) status.

**1.2.1.11.3. COMPLETES QVI UPON REPAIR OF ITEM.**

**1.2.2. PERFORMS OVER-THE-SHOULDER (OTS) INSPECTION:**

**1.2.2.1. INFORMS SUPERVISOR AND TECHNICIAN OF OTS INSPECTION.**

**1.2.2.2. OBSERVES TECHNICIAN PERFORMING CALIBRATION:**

**1.2.2.2.1. INTERRUPTS CALIBRATION IF SAFETY PRACTICE IS VIOLATED.**

**1.2.2.2.2. FOLLOWS CALIBRATION PROCEDURE WITH TECHNICIAN.**

**1.2.2.2.3. ENSURES THAT SUBSTITUTE ITEM OF TMDE MEETS STANDARD ACCURACY REQUIREMENT.**

**1.2.2.2.4. INFORMS TECHNICIAN AND SUPERVISOR OF VIOLATION OR ERROR IN THE TECHNICIAN'S PERFORMANCE.**

**1.2.2.2.5. ENSURES EQUIPMENT USED TO PERFORM OTS INSPECTION IS WITHIN CALIBRATION LIMIT.**

**1.2.2.2.6. VERIFIES TMDE.** Verifies equipment, part number, serial number, PAMS bar code label number, and matches job control work order.

**1.2.2.2.7. VERIFIES WUC.**

**1.2.2.2.8. INSPECTS ACCESSORY.**

**1.2.2.2.9. PROCESSES COMPLETED OTS INSPECTION INTO PAMS LOG OR AFTO FORM 442.**

**1.2.3. PERFORMS 100% OUTGOING INSPECTION.** Performs 100% physical and documentation inspection on completed maintenance action.

**1.2.3.1. INSPECTS COMPLETED TMDE FOR SAFETY.** Inspects completed items of TMDE, IAW applicable T.O., for correct fuse size, wiring, and foreign object in unit.

**1.2.3.2. INSPECTS PHYSICAL CONDITION OF TMDE.**

**1.2.3.3. VERIFIES WUC.**

**1.2.3.4. INSPECTS ACCESSORY.** Inspects adapter and accessory for correct marking IAW applicable T.O.

**1.2.3.5. PROCESSES COMPLETED 100% INSPECTED ITEM TO CUSTOMER PICK-UP AREA.**

**1.2.3.6. COMPLETES AFTO FORM 442 ON ITEM FAILING INSPECTION.**

**1.2.3.7. REINSPECTS FAILED ITEM.**

**1.2.4. PERFORMS WORKING STANDARD CHECK:**

**1.2.4.1. RANDOMLY SELECTS WORKING STANDARD.** Each month, randomly selects 1% of PMEL owned, in use, and locally calibrated TMDE for a full QVI.

**1.2.4.2. PROCESSES SELECTED TMDE THROUGH SCHEDULING AND CREATES WORK ORDER.**

**1.2.4.3. PERFORMS CALIBRATION:**

**1.2.4.3.1. GATHERS CALIBRATION PROCEDURE, MAINTENANCE T.O., OR COMMERCIAL DATA AS REQUIRED.**

**1.2.4.3.2. GATHERS TEST EQUIPMENT, CABLE, CONNECTOR, AND ADAPTOR REQUIRED TO PERFORM CALIBRATION.**

**1.2.4.3.3. PERFORMS FULL CALIBRATION IAW CALIBRATION PROCEDURE.**

**1.2.4.3.4. ANALYZES TEST EQUIPMENT FAILURE FOR ROOT CAUSE AND MISSION IMPACT.**

**1.2.4.3.5. COMPLETES AFTO FORM 442 ON COMPLETED WORKING STANDARD CHECK.**

**1.2.4.3.6. PROCESSES CALIBRATED TEST INSTRUMENT INTO PAMS.**

**1.2.4.3.7. RETURNS TEST EQUIPMENT, CABLE, CONNECTOR, ADAPTOR, AND CALIBRATION PROCEDURE TO PROPER PLACE.**

**1.2.5. PERFORMS INSPECTION OF TMDE OWNING WORK CENTER (OWC) TRANSPORT SYSTEM:**

**1.2.5.1. ENSURES MOBILITY BIN IS PROPERLY MAINTAINED AND LOCKED.**

**1.2.5.2. ENSURES LOOSE EQUIPMENT IS PROTECTED FROM THE ELEMENTS AND PADDED FOR PROTECTION FROM VIBRATION, SHOCK, OR DAMAGE DUE TO LOAD SHIFT.**

**1.2.6. PERFORMS INCOMING TMDE INSPECTION.** Inspects incoming TMDE for cleanliness, completeness, and required accessories.

**1.2.7. INSPECTS TMDE RETURNED FROM DEPOT CALIBRATION.** Completes operational check of equipment parameters and certification label. Enters PAMS data to process item for customer pick up.

**1.2.8. CONFIRMS CAN-NOT-DUPLICATE (CND) ACTION.** Confirms owning work center's CND action when technician is unable to identify malfunction.

**1.2.9. MONITORS LABORATORY ENVIRONMENT TEMPERATURE HUMIDITY CONTROL SYSTEM.** Checks temperature and humidity reading throughout the laboratory. Annotates temperature and humidity out-of-tolerance condition in log. Informs PMEL superintendent and laboratory foreman of out-of-tolerance condition.

**1.3. REVIEWS AND EVALUATES REPORT:**

**1.3.1. REVIEWS AND EVALUATES DEFICIENCY REPORT.** Reviews and evaluates deficiency report such as material, quality, software, and warranty.

**1.3.2. REVIEWS AND EVALUATES TECHNICAL ORDER IMPROVEMENT REPORT.**

**1.3.3. ANALYZES AND REVIEWS AFTO FORM 22, TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY, FOR TECHNICAL ACCURACY.**

**1.4. MAINTAINS RECORD:**

**1.4.1. MAINTAINS AFTO FORM 442.**

**1.4.2. MAINTAINS TMDE INSPECTION MONTHLY SUMMARY.**

**1.4.3. MAINTAINS PAMS QA FILE.**

**1.5. PERFORMS TREND ANALYSIS ON QVI FAILURE:**

**1.5.1. DETERMINES CAUSE OF FAILURE.**

**1.5.2. RECOMMENDS TRAINING.**

**1.6. CONDUCTS QUALITY ASSURANCE BRIEFING.** Conducts periodic QA briefing for assigned personnel.

**1.7. PERFORMS EVALUATION.** Performs Aerospace Guidance and Metrology Center (AGMC) PMEL evaluation.

**1.8. AIDS PMEL TECHNICIAN:**

**1.8.1. ASSISTS PMEL TECHNICIAN IN SOLVING PROBLEM INCURRED DURING THE CALIBRATION/REPAIR PROCESS.**

**1.8.2. ASSISTS TECHNICIAN WITH FINDING SUITABLE SUBSTITUTE ITEM OF TMDE IN THE CALIBRATION PROCESS.**

**1.9. PROVIDES CUSTOMER SUPPORT:**

**1.9.1. COORDINATES WITH TMDE USER TO SOLVE PROBLEM OPERATING TMDE AND FINDING A SUITABLE SUBSTITUTE ITEM FOR USE.**

**1.9.2. COORDINATES WITH OTHER PMEL, MANUFACTURER, AND/OR ENGINEER TO INVESTIGATE/RESOLVE PROBLEM AND EXCHANGE INFORMATION.**

**1.9.3. PREPARES CUSTOMER SURVEY LETTER, CONTACTS CUSTOMER TO RESOLVE PROBLEM, AND MAINTAINS CUSTOMER SURVEY LOG.**

**1.9.4. MONITORS CUSTOMER DEFERRED ITEM OF TMDE.**

**1.9.5. WRITES AND PUBLISHES PMEL NEWSLETTER.**

**1.9.6. SUBMITS CALIBRATION DETERMINATION LETTER ON NEW TMDE TO AIR FORCE INVENTORY.**

**2. PMEL AUTOMATED MANAGEMENT SUBSYSTEM (PAMS):**

**2.1. MANAGES PAMS PROGRAM:**

**2.1.1. MANAGES PAMS HARDWARE.** Requisitions, installs, and controls PAMS hardware; performs operator maintenance; and initiates PAMS service contract.

**2.1.2. MANAGES PAMS SOFTWARE.** Creates and updates PAMS program file, installs software revision, initiates program change request, installs and assigns spooler task, and prints PAMS report.

**2.1.3. PLANS AND CONDUCTS AIR NATIONAL GUARD (ANG) PAMS TRAINING:**

**2.1.3.1. PREPARES LESSON PLAN.**

**2.1.3.2. CONDUCTS PAMS TRAINING.**

**2.1.3.3. DOCUMENTS TRAINING.**

**2.2. OPERATES PAMS:**

**2.2.1. PERFORMS PAMS FILE MAINTENANCE.**

**2.2.2. MANAGES PAMS DATA FILE:**

**2.2.2.1. PURGES AND PERFORMS RESTORATION OF PAMS DATA FILE.**

**2.2.2.2. PERFORMS BACKUP OF PAMS DATA FILE:**

**2.2.2.2.1. PERFORMS DAILY BACKUP.**

**2.2.2.2.2. PERFORMS WEEKLY BACKUP.**

**2.2.2.2.3. PERFORMS MONTHLY BACKUP.**

**2.2.3. PREPARES RETRIEVAL.** Prepares retrieval to extract select data from PAMS data base.

**2.2.4. TRANSFERS PAMS MAINTENANCE DATA COLLECTION SYSTEM INFORMATION.**

**2.2.5. SERVES AS ANG COMMAND CONTACT FOR PAMS TYPE II AND TYPE IV HARDWARE AND SOFTWARE INSTALLATION AND/OR PROBLEM RESOLUTION.**

**3. TRAVEL:**

**3.1. TRAVELS TO AND FROM ON-BASE SITE LOCATION.**

**3.2. TRAVELS TO AND FROM OFF-BASE SITE LOCATION.**

**3.3. PREPARES TRIP REPORT.**

**INDIRECT:**

**I3. MEETING:**

**I3.1. PREPARES FOR MEETING:**

**I3.1.5. PREPARES FOR WORK CENTER MEETING.**

**I3.2. CONDUCTS OR ATTENDS MEETING:**

**I3.2.5. CONDUCTS OR ATTENDS WORK CENTER MEETING.**

**I4. TRAINING:**

**I4.1. ADMINISTERS TRAINING:**

**I4.2. DEVELOPS TRAINING MATERIAL.**

**I4.3. CONDUCTS TRAINING.**

**I4.4. RECEIVES TRAINING.**

STANDARD MANPOWER TABLE										
WORK CENTER/FAC			APPLICABILITY MAN-HOUR RANGE							
PMEL QUALITY ASSURANCE/FAC 245002			127.40 - 368.30							
AIR FORCE SPECIALTY TITLE	AFSC	GRADE	MANPOWER REQUIREMENT							
Quality Assurance	324XX	CIV	1	2	3					
<b>TOTAL</b>			1	2	3					
AIR FORCE SPECIALTY TITLE	AFSC	GRADE	MANPOWER REQUIREMENT							
<b>TOTAL</b>										