

HEADQUARTERS  
Department of the Army  
Washington, D.C. 20310-2500  
30 March 1990

\*NATIONAL GUARD REGULATION (AR) 385-15

**Safety**

**POLICY, RESPONSIBILITIES, AND PROCEDURES FOR INSPECTION/EVALUATION  
AND USE OF ARNG INDOOR FIRING RANGES**

**Summary.** This regulation pre-  
scribes policy, responsibilities,  
and procedures for inspection/  
evaluation and use of Army National  
Guard (ARNG) indoor firing ranges.

**Applicability.** This regulation  
applies to the ARNG and any  
individual/organization using ARNG  
indoor firing ranges.

**Impact on Unit Manning System.**  
This regulation does not contain  
information that affects the Unit  
Manning System.

**Supplementation.** Supplementation of  
this regulation is prohibited  
without prior approval from CNGB  
(NGB-AVN-S).

**Interim changes.** Interim changes to

this regulation are not official  
unless they are authenticated by  
the Executive, NGB. Users will  
destroy interim changes on their  
expiration dates unless sooner  
superseded or rescinded.

**Internal control systems.** This  
regulation is not subject to the  
requirements of AR 11-2. It does  
not contain internal control pro-  
visions.

**Suggested improvements.** The pro-  
ponent of this regulation is the  
National Guard Bureau. Users are  
invited to send comments and  
suggested improvements on DA Form  
2028 (Recommended Changes to  
Publications and Blank Forms)  
directly to NGB-AVN-S, Bldg E6810,  
APG, MD 21010-5420.

**Contents (Listed by paragraph number)**

**Chapter 1**

**General Provisions**

Purpose ..... 1-1  
References ..... 1-2  
Policy ..... 1-3

**Chapter 2**

**Responsibilities**

Chief, National Guard Bureau  
(CNGB) ..... 2-1  
Chief, Army Aviation Division  
(NGB-AVN) ..... 2-2  
Chief, ARNG Safety Branch  
(NGB-AVN-S) ..... 2-3

Chief, ARNG Organization and  
Training Branch (NGB-ARO).... 2-4  
Chief, ARNG Installations  
Division (NGB-ARI)..... 2-5  
The State Adjutants  
General..... 2-6  
Commanders of  
facilities..... 2-7  
Custodians of indoor firing  
ranges..... 2-8  
State Safety and Occupational  
Health Managers..... 2-9  
Occupational Health  
Nurses..... 2-10  
Unit Commanders ..... 2-11

**\*This regulation supersedes NGR 385-15, 3 January 1984.**

**Chapter 3  
Procedures, Classification, and Use**

General ..... 3-1  
 Classification of ranges ..... 3-2  
 Range use (personnel) ..... 3-3  
 Range use (activities) ..... 3-4  
 Personal protective equipment..... 3-5

**Chapter 4  
Inspection Procedures**

Initial inspections ..... 4-1  
 Detailed inspections ..... 4-2  
 Bi-ennial inspections ..... 4-3  
 Special inspections ..... 4-4  
 Completed reports ..... 4-5  
 Records ..... 4-6

**Chapter 5  
Control of Potential Lead Intoxication**

OSHA lead standards ..... 5-1  
 Maximum exposure hours ..... 5-2

**Chapter 1  
General Provisions**

**1-1. Purpose**  
 This regulation prescribes NGB policy, responsibilities, and procedures for inspection/evaluation and use of ARNG indoor firing ranges.

**1-2. References**  
 Required and related publications are listed in appendix A.

**1-3. Policy**

a. Conduct detailed initial, bi-ennial, and when required, special inspections of all indoor firing ranges as prescribed to ensure compliance with current safety and health standards.

b. Ensure that no ARNG or civilian personnel use ARNG indoor firing ranges that may endanger their safety or health.

c. No unsafe indoor firing ranges will be used by any personnel.

Extent of use ..... 5-3  
 Blood testing ..... 5-4

**Chapter 6  
Repair-Remodel-Rehabilitation**

Funding requests ..... 6-1  
 Minor repairs ..... 6-2  
 Cost sharing ..... 6-3  
 Repair requests ..... 6-4

**Appendixes**

A. References  
 B. Clean-up Procedures - Housekeeping  
 C. Clean-up Procedures - General  
 D. Table of Lead Exposure Limits  
 E. Initial Range Inspection checklist  
 F. Ventilation Measurement Procedures  
 G. Air Sampling Procedures  
 H. Detailed Range Inspection Checklist

d. The use of indoor firing ranges for purposes other than firing will be prohibited.

**Chapter 2  
Responsibilities**

**2-1. Chief, National Guard Bureau (CNGB)**

The CNGB is responsible for the overall supervision of the ARNG indoor firing range safety and occupational health program and for coordinating with other HQDA Staff agencies and the State Adjutants General on matters pertaining to the prevention of injury and illnesses attributed to indoor firing ranges. This responsibility is vested in the Director, Army National Guard.

**2-2. Chief, Army Aviation Division (NGB-AVN)**

NGB-AVN will supervise all matters pertaining to the evaluation and safe use of indoor firing ranges.

**2-3. Chief, ARNG Safety Branch (NGB-AVN-S)**

NGB-AVN-S will--

a. Recommend and implement an effective safety and occupational health program for use in indoor firing ranges.

b. Identify and justify funding needs and personnel requirements to ensure the safety and health of all personnel using indoor firing ranges.

c. Provide safety and occupational health design review for all new and remodeled ranges.

**2-4. Chief, ARNG Organization and Training Branch (NGB-ARO)**

NGB-ARO will provide weapon training strategies consistent with AR 350-41 and the Standard and Training Commission.

**2-5. Chief, ARNG Installations Division (NGB-ARI)**

NGB-ARI will--

a. Provide the design standards for the construction of indoor firing ranges.

b. Ensure that the designs for new and remodeled indoor firing ranges meet the approved standards.

**2-6. The State Adjutants General**  
The State Adjutants General will--

a. Establish, supervise, and direct a safety and occupational health program for users of indoor firing ranges.

b. Ensure all ranges being used are safe and that unsafe ranges under the criteria of this regulation are not used.

c. Determine and identify funding requirements to ensure development of a comprehensive safety and occupational health program for the users of indoor firing ranges.

**2-7. Commanders of facilities**  
Commanders of facilities that include indoor firing ranges will ensure that--

a. Indoor firing ranges are secured when not in use.

b. A custodian is appointed for all indoor firing ranges under his area of command.

c. The custodians of the indoor firing ranges maintain the proper records and follow proper procedures.

d. All non-military organizations using indoor firing ranges under their area of command have signed a contract/agreement delineating the conditions of range use and liability.

e. Standing Operating Procedures (SOP) for each range are established, enforced, and approved by the State Safety and Occupational Health Office.

f. All individuals using indoor firing ranges under their area of command have been given a copy of the rules governing the use of the range and have signed an agreement in substantially the following form:

*"I acknowledge that I have been given a copy of the rules governing the use of the indoor firing range. I have read the rules and agree to follow them. I understand that my use of the range is conditioned on my strict compliance with the rules.  
(Signature)"*

**2-8. Custodians of indoor firing ranges**

Custodians will--

a. Ensure that individuals of an organization using the indoor firing range, understands the range safety regulations, and SOPs; and on limited ranges, records the names of the firers, dates of firing, and amount of time spent in the range by each individual.

b. Ensure that the cleaning procedures prescribed in this regulation are performed. (See app B and C.) Dates, list of personnel and time on the range will be documented.

c. Maintain all user time records that pertain to limited use (for lead) indoor firing ranges for 40 years from the date of use, IAW 29 CFR 1910.1025.

#### 2-9. State Safety and Occupational Health Manager

The State Safety and Occupational Health Manager will--

a. Perform or coordinate all inspections and sampling for indoor firing ranges.

b. Determine the range classification by using the criteria in this regulation.

c. Approve all indoor firing range SOP.

d. Perform design review for safety aspects of all ranges to be constructed or remodeled.

e. Maintain copies of all range inspections.

f. Make recommendations to the Adjutants General regarding the use of unsafe ranges.

#### 2-10. Occupational Health Nurse

The Occupational Health Nurse will perform or schedule medical surveillance examinations for those personnel firing in limited ranges for more than the prescribed times listed in appendix D.

#### 2-11. Unit Commanders

Unit Commanders will--

a. Enforce all range safety procedures.

b. Maintain a record of all personnel using limited firing ranges as to time in/out of range, as outlined in paragraph 2-8a.

c. Provide the Occupational Health Nurse with a list of those personnel firing in limited ranges for more than the prescribed times.

d. Identify and provide the State Safety and Occupational Health Manager with a list of range officers and custodians and ensure

that they participate in the Medical Surveillance Program.

### Chapter 3 Procedures, Classification, and Use

#### 3-1. General

Indoor firing ranges have been built in armories for many years. Each range design reflects the current emphasis and technology on protecting the health and safety of the firer. Older ranges may not meet the current standards deemed necessary to protect the safety and health of the firers. Under controlled conditions, many older ranges will not expose firers to hazardous conditions.

#### 3-2. Classification of ranges

Based on inspection data using the initial range inspection checklist (app E) ranges will be classified safe, limited or unsafe.

a. **Safe ranges.** Permits authorized firing for military and civilian use.

##### (1) *Building envelope.*

(a) Each firing lane should be at least 4 feet wide.

(b) Forward edges in a louvre or venetian blind type bullet stop must maintain a knife edge to prevent ricochets.

(c) Pipes, conduits, lights, lighting fixtures and other projecting surfaces must be baffled or covered by a material that will protect these items and prevent ricochets.

(d) In older ranges side wall windows in front of the firing line must be removed and the openings closed flush to the walls with materials compatible with the adjacent walls. New ranges will not be built with windows forward of the firing line.

(e) Ranges constructed with wooden floors and/or ceilings will be constructed to prevent bullet penetration through floors or ceilings.

**(2) Ventilation (app F).**

(a) The average air flow at the firing line will be at least 50 linear feet per minute (fpm).

(b) Air will be exhausted at or behind the bullet stop.

(c) Make up air will be introduced into the range behind the firers. When air is introduced through vents it will not exceed 600 fpm velocity.

(d) The ventilation system will be so constructed that exhaust air can not enter into any air supply system.

(e) The exhaust will exceed the make up air to form a negative air pressure in the range in relation to adjoining areas.

(f) No air will be re-

circulated in a firing range.

(g) New ranges will be designed using the latest standards provided by NGB-ARI.

**(3) Range lighting.**

(a) Lighting should be uniform, nonglaring, shadowless illumination at 75 foot candles on targets and 30 foot candles on all other areas.

(b) All lighting must be protected by baffles and placed so that the firer has an unobstructed view down range and the baffles do not disrupt uniform air flow.

**(4) Bullet stops.**

(a) Bullet stops must be of commercial design and manufacture so as to safely handle cartridges up to .45 ACP or 9mm parabellum (NATO requirement).

(b) Armor and steel plating in a safe range must meet these specifications:

**Dimensions of Armor Backstops, Side Plates and Baffles for Protecting Lights, etc.**

**Inclined Plate and Sand Traps**

| Caliber<br>(up to)      | Thickness of<br>Backstops<br>(minimum) | Thickness of<br>Side Plates<br>(minimum) | Thickness of<br>Light, etc.<br>Baffles** |
|-------------------------|--|--|--|
| .22 S/LR                | 1/4" @ 45 degrees                      | 3/16"*                                   | 3/16" @ 30 degrees                       |
| .38 wad-cutter only     | 3/8" @ 45 degrees                      | 1/4"                                     | 1/4" @ 30 degrees                        |
| .45 including hard ball | 1/2" @ 45 degrees                      | 3/8"                                     | 3/8" @ 30 degrees                        |
| 9mm                     | 1/2" @ 45 degrees                      | 3/8"                                     | 3/8" @ 30 degrees                        |

\*(1/8 inch if firing is limited to .22 S/LR)

\*\* (Using older materials already existing in ranges, new material must be 10 gauge (9/64") hot rolled steel or thicker @ 30 degrees.)

**For Escalator/Venetian Blind Bullet Traps**  
(All models are capable of handling all handguns,  
to include .22 cal M16 adaptor)

| Detroit Armor Model # or Equivalent | Thickness of Backstop (minimum)   | Thickness of Ceiling Slope Plate | Thickness of Side Plates | Thickness of Light Baffles |
|-------------------------------------|-----------------------------------|----------------------------------|--------------------------|----------------------------|
| 2200-5* (escalator)                 | 5/16" not greater than 40 degrees | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |
| 4000-6 (escalator)                  | 3/8" @ 20 degrees                 | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |
| 4000-8 (escalator)                  | 1/2" @ 20 degrees                 | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |
| 2400S (venetian blind)              | 1/4" not greater than 35 degrees  | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |

\*(Normally used in ranges using handguns only)

(5) **Target carriers.** Target carriers and holders must be constructed in such a manner as to minimize flat surfaces exposed to the firing line.

(6) **Lead and Carbon Monoxide Levels (app G).**

(a) Lead levels will not exceed 0.05 milligrams per cubic meter (mg/cu meter) of air.

(b) Carbon monoxide levels will not exceed 35 parts per million (ppm).

**b. Limited ranges.** Permits only limited use under controlled conditions. The personnel exposure limits for intermittent lead exposure will be used for limited operation of this range (app D). See note at the end of the checklist (app E).

(1) **Building envelope.** The building must meet the same structural requirements as in safe ranges.

(2) **Ventilation (app F).**

(a) The range must have air flow from behind the firer toward the bullet trap.

(b) Air from the range can not be allowed to enter adjacent rooms or buildings.

(c) Downrange velocity is 35 feet per minute (fpm) or greater, but less than 50 fpm.

(3) **Range lighting.**

(a) Targets and personnel in the range must be clearly visible.

(b) Light fixtures must be protected by baffles.

(4) **Bullet stops.**

(a) Bullet stop plates may be bowed and pitted but must not be punctured.

(b) The leading edge of venetian blind type bullet stop plates is maintained in less than a knife edge condition.

(c) Bullet stop may be of the inclined plate/sand trap design.

(d) The thickness of inclined plate/sand trap type bullet stop must be adequate to attenuate the maximum caliber of ammunition authorized to be fired on the range.

(e) All plate/sand trap type bullet stops must be designed to prevent backscatter.

(f) Sand pits in plate, sand trap type backstops must extend to a point directly below the leading edge of the sloped plate.

(5) **Target Carrier.** Not operable or no target carrier system.

(6) **Lead and Carbon monoxide levels (app G).**

(a) Ranges with lead levels below .4 mg/cu meter of air and above .05 mg/cu meter of air will be classified as limited use. Personnel exposures will be controlled by limiting the firers to the times described in appendix D.

(b) Ranges must have carbon monoxide levels below 35 ppm.

c. **Unsafe ranges.** Are not authorized for use under any conditions.

(1) Range building envelopes not meeting the requirements of a safe range will be considered unsafe.

(2) **Ventilation (app F).**

(a) Ranges with no mechanical ventilation or with the exhaust ventilation located behind the firing line will be considered unsafe.

(b) Ranges are unsafe if air from the ranges enters adjacent rooms or buildings.

(c) Downrange velocity less than 35 fpm will be considered unsafe.

(3) **Range lighting.** Ranges with lighting levels below 15 foot candles through out the range will be considered unsafe.

(4) **Bullet stops.** Ranges with bullet stops that are punctured or severely pitted, or have plates welded on that are not flush or any uneven surface are unsafe.

(5) **Lead and Carbon Monoxide Levels (app G).** Ranges with lead levels above .4 mg/cu meter of air and carbon monoxide levels above 35 ppm are unsafe.

### 3-3. Range use (personnel)

a. **Safe ranges.** These ranges permit authorized firing.

b. **Limited ranges.** These ranges permit only limited use under controlled conditions by individuals who abide by the regulations for that range, using the Personnel

Exposure Limits as set forth in appendix D.

c. **Unsafe ranges.** These ranges are not authorized for use under any conditions.

### 3-4. Range use (activities)

No indoor firing range will be considered for any additional use other than firing, to include storage. Those ranges considered unsafe may be used for other purposes only after cleaning using the procedures in appendix B and C.

### 3-5. Personal protective equipment

a. All personnel in an indoor firing range during firing shall wear eye protection that meets ANSI Z87.1 to guard against damage from flying projectiles.

b. All personnel in a firing range will wear approved hearing protection.

c. **Respiratory protection.**

(1) During clean up procedures where lead levels are less than .5 mg/cu meter of air, an air purifying respirator with HEPA filters must be used.

(2) Cleaning ranges where lead levels exceed .5 mg/cu meter requires the use of an air supplied respirator. These conditions are likely to be encountered during the conversion of ranges with little or no powered ventilation and during the cleaning of sand traps.

(3) Ventilation will be on during clean up of all ranges.

## Chapter 4 Inspection Procedures

### 4-1. Initial inspections

a. An initial inspection of all indoor firing ranges will be done within 1 year of the publication of this regulation using the checklist in appendix E. All new indoor ranges will be inspected within 1 year of the completion of

construction, ideally before acceptance of the facility.

b. Findings from the initial inspection checklist will determine range status according to paragraph 3-2.

#### 4-2. Detailed inspections

A detailed inspection will be accomplished for all ranges not considered safe. This inspection will identify all aspects of the range that must be corrected as well as operational deficiencies. The check list in appendix H will be used for this purpose.

#### 4-3. Bi-ennial inspections

A detailed inspection of every operating range will be made every 2 years to ensure safety standards and procedures are maintained in the operation of the range. These inspections will be done/coordinated by State Safety and Occupational Health personnel. The check list in appendix H will be used for this purpose.

#### 4-4. Special inspections

Special inspections will be made by experienced Safety, Occupational Health Nurses and/or Industrial Hygienists when a range condition has worsened.

#### 4-5. Completed reports

Completed inspection reports will be provided to the state Adjutants General for action or information as appropriate. A copy of the inspection report will also be provided to the range custodian.

#### 4-6. Records

The State Safety and Occupational Health Office will maintain a record of each inspection. Subsequent inspections will be made as a follow-up check against previous inspection reports. This is to ensure required corrective action (s) noted have been accomplished and that there are no adverse changes to the building envelope,

environmental conditions, and/or safe operating procedures.

### Chapter 5 Control of Potential Lead Intoxication

#### 5-1. OSHA lead standard

a. The OSHA lead standard (29 CFR 1910.1025) must be complied with to include medical surveillance requirements. Intermittent personnel exposures to lead at indoor firing ranges will be controlled according to the criteria provided in the table of lead exposure limits (app D).

b. All ranges will be sampled to determine airborne lead levels, during normal firing operations.

c. All ranges will be resampled bi-annually to ensure that the airborne lead level has not changed.

#### 5-2. Maximum exposure hours

Health Services Command has developed alternative criteria for controlling intermittent lead exposure by establishing maximum allowable exposure hours based on the airborne lead concentration and the number of days firing per year (app D).

#### 5-3. Extent of use

a. The extent of use for any indoor firing range must be based on permissible exposure of all using personnel to concentrations of airborne lead.

b. The table of lead exposure limits (app D) were developed to control intermittent lead exposure and establish maximum allowable hours of exposure based on the airborne lead concentration and the number of days firing per year. Use these criteria as an interim control measure only. Maximum effort must be made to reduce the airborne lead levels to 0.03 mg/cu meters or less.

c. ARNG Industrial Hygiene personnel are responsible for testing of the ranges to determine airborne lead concentrations.

d. Lead exposures of personnel will be determined by using a sampling strategy which employs general-area and breathing zone samples. Appendix G contains guidance for air sampling. Once an airborne lead concentration is determined, the table (app D) is to be used to set maximum allowable hours of exposure for each category of range user. Other potential lead exposure, including off duty firing, may contribute to an individuals overall exposure and should be considered in establishing maximum allowable exposure time. The maximum allowable exposure hours should be halved for intermittent range users under 17 years of age.

5-4. Blood testing. Medical surveillance (that is, blood lead testing) is not required for intermittent users if the maximum allowable exposure hours shown in appendix D is not exceeded.

## Chapter 6 Repair - Remodel - Rehabilitation

### 6-1. Funding requests

Military construction funds are not available to support a rehabilitation program bringing all structural features and installed equipment in existing ranges up to current standards. However, according to established NGB policy, requests for funding to upgrade existing ranges may be submitted for consideration on an individual case basis.

### 6-2. Minor repairs

Procedures outlined in NGR 415-5 or NGR (AR) 420-10 as appropriate, should be followed when it is anticipated that estimated proposal costs would be significantly less than \$200,000. The order or

priority to rehabilitate/restore existing ranges is to reopen 'unsafe' ranges and then to correct deficiencies in 'limited' use ranges.

### 6-3. Cost sharing

Cost sharing regarding authorized scope of work for minor construction projects for rehabilitation/restoration of indoor ranges will be 75 percent federal/25 percent state.

### 6-4. Repair requests

In order to successfully compete with all other requirements for the limited amount of construction funding available to the ARNG, any request will have to discuss in-depth the severity of the requirement. Also, provide a clear statement of the impact on training and readiness if the deficiency is not corrected, and set forth what other alternatives have been considered and why they are not feasible. Cost of range equipment not eligible for construction fund support will not be included in the proposal.

## APPENDIX A References

### Section I Required Publications

#### NGR 385-10

Army National Guard Safety and Occupational Health Program. (Cited in para H-1b.)

#### TB MED 502

Occupational Safety and Health Respiratory Protection Program. (Cited in paras B-2d, H-3o(1), and C-2c.)

#### 29 CFR 1910

Section 1025 Lead (1910.1025). (Cited in paras 2-9c and 6-1a.)

**ANSI Z87.1**

Occupational and Educational Eye and Face Protection. (Cited in para 5-1a.)

**Section II****Related Publications**

A related publication is merely a source of additional information. The user does not have to read it to understand this regulation.

**AR 385-30**

Safety Color Code Markings and Signs.

**AR 350-41**

Army Forces Training

**AR 385-63**

Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat.

**NGR 415-5**

Military Construction Army National Guard (MCARNG) Project Development.

**NGR (AR) 420-10**

Operations/Maintenance and Minor Construction, Army National Guard

**FM 25-7**

Training Ranges.

**ACGIH 19th Ed**

Industrial Ventilation, A Manual for Recommended Practices.

**DHEW NIOSH 76-130**

Lead Exposure and Design Considerations for Indoor Firing Ranges.

**APPENDIX B****CLEAN-UP PROCEDURES - HOUSEKEEPING****B-1. General**

a. Care must be taken to mini-

mize lead exposures for personnel using indoor firing ranges. Range custodians must perform regular housekeeping operations to minimize lead exposures. All ranges must be cleaned according to the following procedures.

b. The State Safety and Occupational Health Manager, Occupational Health Nurse, or Environmental Specialist must approve specific range cleaning SOPs.

**B-2. Equipment and cleaning methods**

a. Wet cleaning will require dual containers of water. One container is for wetting the applicator (mop, rags, sponges, etc.) and the other is for rinsing the applicator after the dust has been wiped from a surface. The rinsing container must be emptied often into a sealable container. Waste water is a hazardous waste and must be appropriately disposed of.

b. Wet cleaning by high pressure water spraying is not authorized.

c. Dry cleaning will be accomplished using specialized HEPA filter equipped vacuum cleaners specifically manufactured for hazardous waste cleanup. These machines are the same type as used in ARNG maintenance shops for asbestos control.

d. Workers must be protected by proper personal protective equipment while performing the work. TB MED 502 specifies the proper respirator and the procedures required for their use. Protective clothing will be removed at the work site and workers will shower and change into clean clothes before departing. Workers will wash their hands thoroughly before eating, drinking, or smoking.

**B-3. Preparations**

a. The range space will be isolated from the rest of the

building by closing and locking all doors except one which is designated as the workers entrance. That entrance will be kept closed during all clean up operations.

b. The range ventilation system will be operated during cleaning procedures.

c. Dust, fume, and mist respirators approved by NIOSH for lead exposure must be used during cleanup operations.

d. Wet method or vacuum (supplied with HEPA filters), not dry sweeping, must be used during cleanup.

#### B-4. Procedures

a. After each daily firing session—

(1) The firing line must be damp mopped using the 2 container system, or dry vacuumed with a HEPA vac to remove lead contamination.

(2) No protective clothing is required.

b. Monthly. Clean the bullet trap of lead particles and bullets. (Workers must wear proper personal protective equipment.)

c. As required (dependent on the amount of use of the range)—

(1) Clean ceilings by vacuuming or wiping with a damp rag or sponge.

(2) Clean exposed steel beams, bar joists, pipes, etc., by wiping with a damp rag or sponge.

(3) Walls will be cleaned by vacuuming or wiping with a damp rag or sponge.

(4) Floors will be cleaned after all other surfaces have been cleaned. Either wet mopping or vacuuming will be employed to clean floors.

(5) All used rags, sponges etc., must be disposed of as a hazardous waste. This applies any time the indoor range is cleaned.

(6) Workers must wear proper personal protective equipment.

## APPENDIX C

### CLEAN-UP PROCEDURES - GENERAL

#### C-1. General

a. Before any room that has been previously used for an indoor firing range can be converted to another functional use, or before any remodeling work can be started in that room, it must be cleaned according to the following procedures.

b. The State Safety and Occupational Health Manager, Occupational Health Nurse, or Environmental Specialist must be contacted before any plans for range conversion.

#### C-2. Equipment and cleaning methods

a. Wet cleaning will require dual containers of water. One container is for wetting the applicator (mop, rags, sponges, etc.) and the other is for rinsing the applicator after the dust has been wiped from a surface. The rinsing container must be emptied often into a sealable container.

b. Dry cleaning will be accomplished using specialized HEPA filter equipped vacuum cleaners specifically manufactured for hazardous waste cleanup. These machines are the same type as used in ARNG maintenance shops for asbestos control.

c. Workers must be protected while performing the work by wearing proper personal protective equipment. TB MED 502 specifies the proper respirator and the procedures required for their use. Protective clothing will be removed at the work site and workers will change into clean clothes before departing. Workers will wash their hands and face thoroughly before eating, drinking or smoking.

#### C-3. Preparations

The range space will be isolated from the rest of the building by

closing, and locking, all doors except one which is designated as the workers entrance, and that entrance will be kept closed during all clean up operations, (Initial Cleanup Only).

#### C-4. Procedures

a. Operate range exhaust system during all cleaning operations.

b. Remove all combustible materials such as wood, composition board, paper, etc.

c. Thoroughly wet the sand in the bullet trap pit and shovel in to 55 gal drums. Seal these containers and remove from the range. Disposal of hazardous waste will be accomplished according to USPFO procedures.

d. Once the sand has been removed, the steel plate, baffles, side plates, etc., can be taken down. Each piece of steel must be cleaned of dust before removal from the site.

e. Clean ceilings by vacuuming with a HEPA vacuum or wiping with a damp rag or sponge.

f. Clean exposed steel beams, bar joists, pipes, etc., by wiping with a damp rag, sponge or HEPA vacuum.

g.. Walls will be cleaned by vacuuming with a HEPA vacuum or wiping with a damp rag or sponge.

h.. Floors shall be cleaned after all other surfaces have been cleaned. Either wet mopping or vacuuming with a HEPA vacuum will be used to clean floors.

APPENDIX D

TABLE OF LEAD EXPOSURE LIMITS

Personnel Exposure Limits for Intermittent Atmospheric Lead Contamination

| Concentrations<br>mg/cu meter | Maximum Hours of Allowable Exposure Per Day        |  |
|-------------------------------|--|--|
|                               | Column "A"   | Column "B"   |
|                               | GUARDSMEN exposed<br>Less than 30 days<br>per year | GUARDSMEN on Marksmanship<br>Teams or GUARDSMEN exposed<br>more than 30 days per year<br>ALL CIVILIAN PERSONNEL<br>CIVILIAN Marksman/POLICE etc. |
| 0.000-0.030                   | 8  | 8 (4)  |
| 0.031-0.040                   | 8  | 6 (3)  |
| 0.041-0.050                   | 8  | 4-1/2 (2)  |
|                               | LIMITED USE RANGES<br>CATEGORY "A"                 | LIMITED USE RANGES<br>CATEGORY "B"   |
| 0.051-0.060                   | 6  | 4 (2)  |
| 0.061-0.080                   | 5  | 3 (1)  |
| 0.081-0.100                   | 4  | 2 1/4 (1)  |
| 0.101-0.150                   | 2-1/2  | 1 1/2 (0)  |
| 0.151-0.200                   | 2  | 1 (0)  |
| 0.201-0.300                   | 1-1/4  | 3/4 (0)  |
| 0.301-0.400                   | 1  | 1/2 (0)  |

Persons under 18 years of age are prohibited from entering any range area with a lead concentration greater than 0.100. To do so may result in permanent debilitating effects.

Persons under 18 years of age can enter range areas only for the time period specified in parenthesis ( ). To exceed the specified time may result in permanent debilitating effects.

Maximum allowable exposure times are for any personnel in the range area regardless of their function (control personnel, coaches, spectators, etc.).

Times in column "A" can only be used by guardsmen who will be involved in any activity (as a guardsmen or in his civilian profession) that exposes him/her to airborne lead contamination less than 30 days per year.

Times in column "B" must be used by guardsmen on marksmanship teams, personnel exposed more than 30 days per year and civilian marksman (clubs, ROTC, competitions, police units etc.). The State Occupational Health Nurse should recommend maximum exposure times for guardsmen whose civilian profession exposes him/her to air-borne lead contamination.



APPENDIX E  
INITIAL RANGE INSPECTION CHECKLIST

LOCATION OF RANGE \_\_\_\_\_ DATE \_\_\_\_\_

RANGE CUSTODIAN \_\_\_\_\_ TELEPHONE # \_\_\_\_\_

RANGE CLASSIFICATION: (circle one)

SAFE

UNSAFE

LIMITED

Inspector's Signature \_\_\_\_\_

Grade and Duty Station \_\_\_\_\_

\_\_\_\_\_

INITIAL RANGE INSPECTION CHECKLIST

E-1. General

This checklist provides a method of evaluating indoor firing ranges to make an initial determination of ranges that can be used for training in the near future with a minimal expenditure of time and money. Ranges that will require a reasonable expenditure of time and funds for upgrading to meet required standards, and ranges that may require extensive construction funding and time to up grade to acceptable standards. Ranges in the last category may be considered for conversion from an indoor range to other uses. This checklist in no way constitutes authority to open closed ranges. It does provide the methodology to rank ranges according to their probability of being returned to an operational status.

SAFE LIMITED UNSAFE

E-2. Initial checklist

a. The building envelope appears to be structurally suitable. (Ceiling height sufficient. No exposed pipes, beams, etc.) If yes, check SAFE. If not, check UNSAFE.

\_\_\_\_\_

b. If range has—

(1) An operational ventilation system designed and installed since 1982, with—

(a) Make-up air inlets provided behind the firing line.

(b) Exhaust outlet located behind or above the bullet stop.

(c) Rated capacity of exhaust fan exceeding rated capacity of supply fan.

(d) Supply and exhaust fans that are interlocked to prevent operation of one without the other.

If yes, check SAFE.

\_\_\_\_\_

(2) An operational ventilation system designed before 1982 with make-up air provided behind firing line but—

(a) Exhaust outlet located less than 15 feet from firing line, and/or

(b) Supply fan not interlocked with exhaust fan.

Then check LIMITED.

\_\_\_\_\_

(3) No operational ventilation system, check UNSAFE.

\_\_\_\_\_

(4) If exhaust is ducted to other parts of the building, check UNSAFE.

\_\_\_\_\_

IF RANGE IS SAFE OR LIMITED CONTINUE WITH CHECKLIST. IF RANGE HAS ONE CATEGORY CHECKED UNSAFE IT MUST BE CLOSED UNTIL REPAIR IS MADE.

SAFE LIMITED UNSAFE

c. A bullet stop is permanently installed in the range area.

If yes, check SAFE. If not, check UNSAFE.

d. The installed bullet stop is entirely manufactured of steel. If yes, check SAFE.

If not, check UNSAFE. If inclined plate/sand trap type, check LIMITED.

e. Bullet stop is in good condition, not bowed, pitted or punctured. Good condition check SAFE, bowed/pitted check LIMITED, punctured or an uneven surface check UNSAFE.

f. If range has venetian blind type bullet stop are forward edges of steel plates maintained to a knife edge to prevent ricochets. If yes, check SAFE. If not, check LIMITED.

g. If range has an operational ventilation system IAW item 2a and 2b above, measure the down range air velocity using the procedures in the appendix F titled VENTILATION MEASUREMENT PROCEDURES.

If the down range air velocity is:

(1) 50 fpm or greater, check SAFE.

(2) Less than 50 fpm but 35 fpm or greater, check LIMITED.

(3) Less than 35 fpm, check UNSAFE.

h. Range has a target retrieval system. If yes, check SAFE. If no, check LIMITED.

i. Windows or door openings in front of firing line are locked, barred, and protected.

If yes, check LIMITED. If no, check UNSAFE.

When this evaluation is completed the range will be classified according to the lowest single category checked (SAFE, LIMITED or UNSAFE).

NOTE: If three or more limited factors (items d,e,f,h,or i above) are present the range will be classified as LIMITED. If one or two limited factors are present the range may be classified as SAFE by the State Safety and Occupational Health Manager. Factors that may be considered are bullet stops, target carriers, and only if state law requires them, doors down range. Then they must be baffled and opened only from the inside (no outside door knob or lock) in case of emergency. Ventilation requirements are not negotiable issues and must be followed.

1

2

3

## APPENDIX F Ventilation Measurement Procedures

### F-1. General

a. Contaminants produced as products of firing (i.e., lead, carbon monoxide, and aldehydes) must be removed from the range by an adequate range ventilation system. The maximum allowable concentration of lead acceptable for an 8-hour daily exposure (time weighted average) is 0.05 mg/cu meter. A ventilation system designed to provide this protection is sufficient to remove other products of firing.

b. Optimum ventilation systems should include make-up air introduced behind the firing line and exhausted at the target line or bullet trap in such a manner that air turbulence is minimized.

c. Individuals who have been trained in performing ventilation measurements are qualified to perform ventilation surveys of indoor range facilities.

### F-2. Ventilation measurement

a. Downrange air velocity can be measured by using a 30 second smoke candle and a stop watch. Ignite the smoke candle behind the firing line. Time the smoke from the moment it crosses the firing line until the smoke reaches the bullet stop. Calculate the air velocity by dividing the range length (distance smoke traveled while timed) by the time (distance in feet/time in minutes = velocity in feet per minute). A minimum of 35 fpm is required, which is equal to 35 cubic feet per minute per square foot of cross sectional area. During the smoke evaluation, observe the range for any "dead spots" or turbulent air motion that may increase exposure at or behind the firing line. Air supply entry and exhaust points should be depicted on a diagram of the range. Air flow patterns indicating dead spots and

turbulence should also be included on the range diagram.

b. Measuring air velocities at the firing line should be accomplished by using an air velocity meter that has been calibrated to a traceable primary standard. This equipment when operated according to manufacturers instructions should provide a direct velocity reading. Sources for this equipment can be found in TB MED 503.

c. Minimum velocity at the firing line is 50 fpm. When this velocity is provided 100 percent of the air should be exhausted downrange at the bullet trap.

d. Make-up and exhaust air velocities in ducts can be measured using a calibrated air velocity meter. The selection of the measuring point greatly affects the reliability of the results. A point should be selected that is at least 3 duct diameters removed from obstructions which may disrupt the air flow. Representative velocity measurements should be taken at that point. For round ducts 6" and smaller, at least 6 traverse point measurements should be made. For round ducts larger than 6" diameter, at least 18 traverse point measurements should be made. For very large ducts, 20 or more traverse point measurements will increase the precision of the air flow measurements. For square or rectangular ducts, no fewer than 16 measurements should be made in a grid pattern throughout the cross section at the point selected. (To make these measurements, it may be necessary to drill holes in the duct or remove grills from duct openings. Drill holes should be covered with duct tape.) The number of measurements taken should be averaged to determine the average velocity of the system evaluated. The cross sectional area where the velocity measurements were taken should be calculated and expressed in square feet (sq ft). Multiply the air velocity in the duct times

the cross sectional area. [(Velocity in fpm) X (area in sq ft) = (volume of air passing through the duct in cubic feet (cu ft)/minute)]. The product is the volume of air passing through the duct each minute. This number in cu ft/min should be close to the specifications of the fan moving the air. Deviations of more than 20 percent may indicate a need for maintenance of the fan or replacement with a fan capable of overcoming the pressure losses of the ventilation system. The exhaust air should exceed the make-up air, to provide a slightly negative pressure in relation to adjacent areas.

e. Make-up supply grills or diffusers should have a maximum velocity of 600 fpm and be sized for uniform distribution.

### F-3. Other factors

a. The make-up and exhaust air systems must be interlocked. Variable speed fans should not be used.

b. Recirculation of air is not allowed.

c. State or local environmental regulations may require high efficiency particulate filters in the range exhaust system. The environmental POC for your State can assist in this matter.

## APPENDIX G

### Air Sampling Procedures

#### G-1. General

Only properly trained personnel will perform air sampling of indoor firing ranges.

#### G-2. Sample collection

Collect all lead samples on cellulose ester (CE) filters with a pore size of 0.8 microns 37 mm in diameter, mounted in a three piece cassette with a closed face. A personal air sampling pump with

tubing and other accessories is necessary to pull air through the cellulose filters. The sampling rate should be one to four liters per minute (lpm) for an optimum volume of 500 liters, (minimum-200 liters and maximum-1200 liters).

#### G-3. Where to sample

Sample on the firing line, behind the firing line, and in adjacent areas with emphasis placed on occupied areas (i.e. range offices, supply rooms, kitchens, or hallways). Area samples approximating breathing zone samples should be taken in every firing position and off line. Breathing zone samples should be taken on permanently assigned range personnel. Exposures to other personnel who use the range intermittently may be evaluated using data obtained from the general area samples. At least two air samples for lead will be taken in areas adjacent to the range during each monitoring period. These samples will determine if lead contamination is confined to the range.

#### G-4. Critical factors

The following factors are critical to proper range evaluation—

a. Sample during periods of maximum use.

b. All firing lanes must be occupied by firers.

c. If firing is over an extended period of time, allow time for possible buildup of airborne concentrations before sampling.

d. Consecutive samples of at least 200 liters should be taken to cover the entire time span.

e. Sample during the use of larger caliber ammunition if ammunition other than .22 rimfire ammunition is authorized.

f. Sample only actual weapons qualification or other routine firing. Do not attempt to simulate unit firing procedures using other personnel.

**G-5. Equipment**

All pumps must be calibrated immediately before and after use to a method traceable to a primary standard (e.g., bubble burette).

**G-6. Sampling results**

All sampling data, laboratory results, calibration information,

etc., will be entered on AEHA Form 9-R (or a locally produced form that contains the same information). In addition, the location where samples were taken will be indicated on a diagram of the range and kept on file in the State Safety and Occupational Health Office.

1

2

3

4

5

APPENDIX H  
DETAILED RANGE INSPECTION CHECKLIST

LOCATION OF RANGE \_\_\_\_\_ DATE \_\_\_\_\_

RANGE CUSTODIAN \_\_\_\_\_ TELEPHONE # \_\_\_\_\_

RANGE CLASSIFICATION: (circle one)

SAFE

UNSAFE

LIMITED WITH THE FOLLOWING RESTRICTIONS:

Inspector's Signature \_\_\_\_\_

Grade and Duty Station \_\_\_\_\_

### Detailed Range Inspection Checklist

#### H-1. Environmental and health considerations

|  | YES | NO | N/A |
|--|-----|----|-----|
| <p>a. The installed ventilation system has been determined to be acceptable both from a uniformity of flow and volume of flow standpoint. (Flow should be uniform from wall to wall and floor to ceiling.) Volume of flow should be adequate to maintain airborne concentrations of lead and other contaminants within acceptable limits. Determine with an Air Sample Survey.</p> | —   | —  | —   |
| <p>If ventilation has been determined to be inadequate as discussed above, range is closed or exposure controlled per Table (app D), or other corrective action taken. (Critical — explain what action is being taken to correct the situation.)</p>   |     |    |     |
| <p>b. Personnel assigned or detailed to work in the firing range on a permanent basis (ie., range custodians, operating OIC/NCOIC etc.) are enrolled in a Medical Surveillance Program and in a Hearing Conservation Program, IAW NGR 385-10, chapter 5.</p>   | —   | —  | —   |
| <p>c. All personnel permitted to be in the range during weapons firing are required to wear appropriate hearing protection and eye protection devices. This includes firers, coaches, spectators (where permitted) and assigned/detailed operating personnel.</p>  | —   | —  | —   |
| <p><b>H-2. Building envelope (structural)</b></p>  |     |    |     |
| <p>a. Width of firing lanes is adequate to fire rifle and/or pistol. (Non-critical but many present some operational problems particularly when firing in the prone position.)</p>   | —   | —  | —   |
| <p>b. Escalator bullet stop is set at an angle of 40 degrees from the horizontal. (Critical only if it appears that lead particles backscatter to the firing line.)</p>  | —   | —  | —   |
| <p>c. Forward leading edges in a louvre or venetian blind type of bullet stop are maintained to a knife-edge to prevent ricochets. (Critical where leading edges are blunted and cause ricochets or backscatter.)</p>  | —   | —  | —   |
| <p>d. Pipes, conduit, lights, lighting fixtures, and other projecting surfaces in front of the firing line are baffled. (Critical to protect items mentioned above and reduce maintenance costs.)</p>  | —   | —  | —   |

|  | YES | NO  | N/A |
|--|-----|-----|-----|
| e. Side wall windows or doors in front of the firing line are removed or bricked in and their openings closed flush using materials compatible with the adjacent wall, or baffled or otherwise protected. (To prevent stray bullets from leaving the range.) | --- | --- | --- |
| f. Single inclined plate bullet stop with sand type trap (plate/sand trap) is set at an angle of 45 degrees (+ or - 5 degrees) from the vertical and inclined forward towards the firing line. (Critical to eliminate backsplatter.)                         | --- | --- | --- |
| g. Thickness of steel plate/sand trap type bullet stop is adequate to attenuate the maximum caliber of ammunition authorized to be fired on the range.   | --- | --- | --- |

**DIMENSIONS OF ARMOR BACKSTOPS, SIDE PLATES AND BAFFLES FOR PROTECTING LIGHTS, ETC.**

**Inclined Plate and Sand Traps**

| Caliber<br>(up to)           | Thickness of<br>Backstops<br>(minimum) | Thickness of<br>Side Plates<br>(minimum) | Thickness of<br>Light, etc.<br>Baffles** |
|------------------------------|--|--|--|
| .22 S/LR                     | 1/4" @ 45 degrees                      | 3/16"*                                   | 3/16" @ 30 degrees                       |
| .38 wad-<br>cutter only      | 3/8" @ 45 degrees                      | 1/4"                                     | 1/4" @ 30 degrees                        |
| .45 includ-<br>ing hard ball | 1/2" @ 45 degrees                      | 3/8"                                     | 3/8" @ 30 degrees                        |
| 9mm                          | 1/2" @ 45 degrees                      | 3/8"                                     | 3/8" @ 30 degrees                        |

\*(1/8 inch if firing is limited to .22 S/LR)

\*\* (Using older materials already existing in ranges, new material must be 10 gauge (9/64") hot rolled steel or thicker @ 30 degrees.)

**For Escalator/Venetian Blind Bullet Traps**

(All models are capable of handling all handguns, to include .22 cal M16 adaptor)

| Detroit Armor Model # or Equivalent | Thickness of Backstop (minimum)   | Thickness of Ceiling Slope Plate | Thickness of Side Plates | Thickness of Light Baffles |
|-------------------------------------|-----------------------------------|----------------------------------|--------------------------|----------------------------|
| 2200-5* (escalator)                 | 5/16" not greater than 40 degrees | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |
| 4000-6 (escalator)                  | 3/8" @ 20 degrees                 | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |
| 4000-8 (escalator)                  | 1/2" @ 20 degrees                 | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |
| 2400S (venetian blind)              | 1/4" not greater than 35 degrees  | 1/4" hot rolled steel            | 1/4" hot rolled steel    | 10 gauge hot rolled steel  |

\*(Normally used in ranges using handguns only)

|   | YES | NO  | N/A |
|---|-----|-----|-----|
| h. Plate/sand trap type bullet stop is properly installed. Joints and edge lines are backed with continuous 1/4" thick steel backing plate 4" in width or wider. If joints in bullet stop plates can be welded and ground flush, a backing plate is not necessary. (Critical if missing and joints and edge lines show signs of bullet damage.) | --- | --- | --- |
| i. Plate/sand trap type bullet stop is suspended by angle braces faced with wood to prevent ricochet or backsplatter. (Critical only if braces show signs of bullet damage.)  | --- | --- | --- |
| j. Bullet stop sidewalls are of steel or covered with steel plate. (Critical only if there is evidence of plate being punctured by bullets.)  | --- | --- | --- |
| k. Plate/sand trap type sideplates extend vertically downward from the top edge of the bullet stop to the bottom rear edge of the bullet stop (Critical to protect firers, building and adjacent areas from ricochets.)   | --- | --- | --- |

|  | YES | NO  | N/A |
|--|-----|-----|-----|
| l. In high ceiling buildings where the plate/sand trap type of bullet stop has been installed, the rear wall above the stop is lined with 2" of wood (or 2 sheets of 3/4" plywood over a 1/8" steel plate or equivalent) to prevent shooting through the rear wall.  | --- | --- | --- |
| m. Pitted steel bullet stop plates showing erosion of 1/4 of the metal thickness are repaired by cutting out the damaged piece and welding in a new piece, flush with the existing plate. (Critical to the extent that this condition may result in ricochet, backsplatter or damage to the building walls.)   | --- | --- | --- |
| n. Welds are ground smooth to prevent backsplatter. (For safety and to prolong life of the weld.)  | --- | --- | --- |
| o.. On a plate/sand trap type of range targets are not suspended in front of plate seals or welds. (Non-critical, except where seam/weld is damaged.) Reposition, and relocate target carrier to correct.  | --- | --- | --- |
| p.. On plate/sand trap type ranges, sandpit should extend toward the firing line at least to a point directly below the leading edge of the sloped plate deflector.  | --- | --- | --- |
| q. Special situation items—  |     |     |     |
| (1) If range floor is constructed of wood with a room below—   |     |     |     |
| (a) The floor in front of the firing line for at least 8 feet is covered with steel plate of 3/16" minimum thickness for .22 caliber and 1/4" for .38 and .45 caliber ranges. (Steel plate must be covered with a non-skid composition floor covering such as linoleum.)   | --- | --- | --- |
| (b) Wooden floor at firing line is covered with a non-skid composition floor covering to prevent powder from accumulating in cracks and presenting a fire hazard.  | --- | --- | --- |
| (2) Wooden ceiling—  |     |     |     |
| (a) Ceiling is protected for 10 feet in front of and 10 feet behind the firing line with 3/16" steel covered with 2" structural grade planking or one sheet of 3/4" plywood for .22 caliber and 1/4" steel plate for .38, .45 caliber and 9mm faced with 2" structural grade planking or two sheets of 3/4" plywood. (Mandatory - where applicable.) | --- | --- | --- |
| (b) Ceiling baffles are constructed and positioned properly to prevent shooting into the ceiling. (Mandatory where ceiling is of wood construction.)   | --- | --- | --- |

|  | YES | NO  | N/A |
|--|-----|-----|-----|
| (c) Ceiling baffles are placed so they do not restrict vision or interfere with operation of the target carrier system.  | --- | --- | --- |
| r. Target holders are constructed of round bar metal stock without any flat surface exposed to the firing line. (Exposed flat surfaces can cause ricochet or backsplatter.)  | --- | --- | --- |
| s. Targets are numbered to coincide with numbered firing positions. (Essential to permit firer to fire on proper target.)  | --- | --- | --- |
| <b>H-3. Operational safety</b>   |     |     |     |
| a. Plate/sand trap type bullet stop has a layer of clean sand used to catch deflected lead 6" to 8" deep running the width of and in front of the stop. (Required to attenuate bullets, prevent ricochet and backsplatter.)  | --- | --- | --- |
| b. Sand is screened regularly to remove lead and reduce the possibility of backsplatter. (Frequency of firing will determine the amount of lead bullet mass buildup and frequency of cleaning required.)   | --- | --- | --- |
| c. Doors opening into the range (from the outside or adjacent rooms) in front of the firing line are removed and their openings closed flush using materials compatible with the adjacent wall. (Mandatory from a life safety standpoint. If State Laws require emergency exit doors they will be locked/secured from the inside and keys will be controlled.) | --- | --- | --- |
| d. Ventilation system is in operation when range is in use and during cleanup. (Mandatory - no exceptions.)  | --- | --- | --- |
| e. Cleaning of the range is accomplished by vacuuming or wet methods. (Use of a hand broom with or without sweeping compound is prohibited.)   | --- | --- | --- |
| f. All drapery and carpeting has been removed from firing range. (Noise attenuation capability of drapery and carpeting is minimal and will collect lead dust.)  | --- | --- | --- |
| g. Range signs are posted denoting caution in the handling of weapons, ammunition authorized to be fired, and other conditions under which the range may be used to include the following: (Mandatory.)  | --- | --- | --- |
| (1) An easily read "Caution" sign will be prominently posted near the firing line of each in-door range.   | --- | --- | --- |
| (2) Smoking and/or the consumption of food/beverages in the range is prohibited.   | --- | --- | --- |
| (3) All personnel will wash hands thoroughly after leaving the range.  | --- | --- | --- |

YES NO N/A

(4) The sign will display the following message with wording modified as appropriate for the caliber of ammunition and types of weapons authorized.

\_\_\_\_\_

**Caution** - Use of this range facility is restricted to supervised firing with non-magnum handgun ammunition or .22 rimfire rifle ammunition using soft nosed lead or lead alloy ammunition only.

\_\_\_\_\_

(5) Personnel authorized to use the range.

\_\_\_\_\_

(6) Hearing protection must be used by all personnel using or observing firing on this range.

\_\_\_\_\_

(7) Eye protection must be used by all personnel using this range.

\_\_\_\_\_

(8) Quick draw type firing and/or hip shooting is prohibited.

\_\_\_\_\_

*h.* Large numbers, indicating target position, will be painted on the top of the steel plate bullet stop above the top target position, or painted on wooden boards installed above the top of the bullet stop plate, or painted on front backing material above the targets.

\_\_\_\_\_

*i.* Only authorized paper targets are used.

(Use of non-standard targets can produce ricochets.)

\_\_\_\_\_

*j.* Personnel assigned or detailed to work in the firing range on a permanent basis are enrolled in a Medical Surveillance Program and in a Hearing Conservation Program.

\_\_\_\_\_

*k.* Where spectators are authorized, they are physically separated by a railing from the firing line. (Mandatory to preclude any interference with firing controls.)

\_\_\_\_\_

*l.* A range SOP containing the above items is established and available.

\_\_\_\_\_

*m.* Each individual has signed an agreement to comply with the rules of the range and the agreement is available for review.

\_\_\_\_\_

*n.* A person assigned to the Armory is designated as custodian of the range and they—

(1) Will ensure that all personnel assigned or detailed to work in the range are required to wear NIOSH approved respirator (for the removal of lead contamination and fumes) while cleaning, re-repairing, or reclaiming lead from the bullet trap. (Mandatory - TB Med 502. Table 2, part 1 lists respirators and filters suitable to provide protection against lead exposure.)

\_\_\_\_\_

(2) Has been properly trained to perform their duties and is fully aware of their responsibilities.

\_\_\_\_\_

(3) Maintains a log of the number of hours the range is used by date and individual/unit/organization.

(4) Ensures cleaning of range is accomplished at proper intervals, with proper supervision and use of proper personal protective equipment.

YES NO N/A

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

H-4. Remarks

By Order of the Secretary of the Army:

**JOHN B. CONAWAY**  
Lieutenant General, USAF  
Chief, National Guard Bureau

Official:

**FRANK C. VAN FLEET**  
Colonel, GS  
Executive, National Guard Bureau

DISTRIBUTION: A