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**COMBAT ARMS TRAINING AND
MAINTENANCE (CATM) OPERATIONS**

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This publication implements Air Force Policy Directive (AFPD) 31-1, *Integrated Defense* and Department of the Air Force (DAF) Instruction (DAFI) 31-131, *Combat Arms Training and Maintenance (CATM) Program*. This publication describes how to plan, conduct, administer, evaluate, and manage CATM and Range operations. It applies to the entire DAF, the United States Air Force (USAF), the United States Space Force (USSF), the Air Force Reserve (AFR), the Air National Guard (ANG), all DAF civilian employees, and those with a contractual obligation to abide by the terms of DAF issuances, except where noted otherwise. All references to USAF terminology, units, grades, and positions will also apply to the equivalent in the USSF, as appropriate. For example, references to Airmen will also apply to Guardians. This publication requires the collection and or maintenance of information protected by the Privacy Act of 1974 authorized by Department of Defense Directive (DoDD) 5400.11, *DoD Privacy Program*. The applicable System of Records Notice (SORN) Notice is F032 AF CE G, Automated Civil Engineer System Records (June 23, 2011, 76, FR, 36903) available at <https://dpcl.d.defense.gov/privacy/SORNS.aspx>. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. This publication may be supplemented at any level but all supplements that directly implement this publication must be routed to AF/A4S for coordination prior to

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Chapter 1

ROLES AND RESPONSIBILITIES

1.1. Overview. This manual supports a family of publications, each containing its own purpose. This manual establishes policy and procedures for CATM and Range operations under most circumstances. Use this publication in conjunction with DAFI 31-131, *Combat Arms Training and Maintenance (CATM) Program*, DAFMAN 31-131 Volume 2, *Small Arms and Light Weapons Qualification Programs*, and DAFMAN 31-131 Volume 3, *Small Arms and Light Weapons Handling Procedures*. Personnel managing, performing, conducting, participating in, observing, and supporting CATM, and range operations must adhere to program requirements, policies, procedures, roles, and responsibilities outlined in DAFI 31-131, DAFMAN 31-131 Volumes 2-3, and this publication. (T-1)

1.2. Director of Security Forces (AF/A4S) will:

1.2.1. Serve as the responsible policy office (Directorate of Security Forces, Operations Division “AF/A4SO”) for the guidance in this publication.

1.2.2. Develop, review, and approve field maintenance (organizational, direct support, and general support) and repair policies, procedures, and range safety criteria for small arms and light weapons (SA/LW).

1.2.3. Coordinate on base and or major command (MAJCOM) exemption (deviation) requests from CATM facility criteria prior to Director of Civil Engineers (AF/A4C) approval or disapproval.

1.2.4. Review and approve CATM program lesson plans, handbooks, and instructor guides prior to implementation, this includes security forces training reference guides (SFTRGs) supporting the CATM portfolio. **Note:** CATM personnel assigned to AF/A4S are exempt from the requirements to maintain instructor and weapons maintenance evaluations for training, weapons handling procedure and maintenance procedure development.

1.2.5. Participate as a core member (AF/A4SO) in the Small Arms Range Working Group (SARWG).

1.3. Director of Civil Engineers (AF/A4C) will: Approve or disapprove base and or MAJCOM exemption (deviation) requests from CATM facility criteria.

1.4. MAJCOM Security Forces (MAJCOM/SF) will: Review waiver requests applicable to CATM operations within the MAJCOM.

1.5. Air Force Installation and Mission Support Center (AFIMSC) will:

1.5.1. Provide funding for combat arms base support functions for active-duty organizations with a CATM mission.

1.5.2. Chair the SARWG to provide program management for the active-duty small arms range (SAR) program with AF/A4SO, Air Force Security Forces Center (AFSFC), Air Force Civil Engineer Center (AFCEC), and key stakeholders. The SARWG will:

1.5.2.1. Provide an enterprise-wide view to centrally manage small arms ranges (SAR) to assist MAJCOMs through AFIMSC in modernizing and improving current range capability.

1.5.2.2. Develop and maintain a SAR investment strategy and ranking methodology with the purpose of advising senior leaders on capability, condition, and investment strategies. Provide annual update of SAR ranking status and progress to AFIMSC's leadership.

1.5.2.3. Review and approve SAR planning documents (i.e., Department of Defense [DD] Form 1391) for new ranges, major renovations, or replacement of existing ranges to validate scope, capacity, and capability to ensure that the new investment supports the enterprise strategy.

1.6. Air Force Security Forces Center (AFSFC) will:

1.6.1. Provide guidance to MAJCOMs on firing range rehabilitation, renovation, and new construction. Coordinate with MAJCOM/SF staff on range projects for all new range designs and major renovations (to include improvements or changes to the size, type, or function of the range). This also applies to modular, portable, container, or trailer type ranges.

1.6.2. Review active-duty base exemption (deviation) requests from CATM facility design criteria, prior to MAJCOM review, to determine requests create safety risks, limit relevancy, or capability and will support qualification or sustainment or both training needs.

1.6.3. Participate as a core member of the SARWG. Review active-duty facility design criteria (e.g., firing ranges, offices, classrooms, maintenance rooms, storage areas) to ensure it supports realistic and relevant academic, live-fire qualification, sustainment, and proficiency-training.

1.6.4. Propose lesson plans, handbooks, and instructor guides. **Note:** CATM personnel assigned to AFSFC are exempt from the requirements to maintain instructor and weapons maintenance evaluations for training, weapons handling procedure and maintenance procedure development.

1.6.5. Ensure authors of lesson plans is a graduate of Basic Instructor Course and either Instructional System Designer or Analysis, Design, Development, Implementation and Evaluation.

1.7. Air Force Civil Engineer Center (AFCEC) will:

1.7.1. Assist active-duty installations by providing 65% design review of all new and major range projects.

1.7.2. Review and coordinate on all active-duty CATM facility criteria exemption (deviation) requests.

1.7.3. Provide design, construction and environmental expertise for construction and maintenance of active-duty small arms ranges and support facilities.

1.7.4. Support active-duty CATM training and SA/LW use by developing small arms range design requirements for implementation in applicable guidance.

1.7.5. Maintain the planning, design, and construction criteria within Unified Facilities Criteria (UFC) 4-179-02, *Small Arms Ranges* and Facility Criteria (FC) 4-179-03F, *Air Force Indoor Small Arms Firing Ranges*.

1.7.6. Participate as a core member of the SARWG as the SAR design and construction subject matter expert (SME). Coordinate on all new active-duty range designs and major renovations. Review base exemption (deviation) requests from active-duty CATM facility criteria and provide recommendation to AF/A4C for approval or disapproval.

1.8. Commanders and Directors (or Equivalents) (as defined in AFI 38-101) will:

1.8.1. Ensure compliance with guidance in this publication and ensuring weapons, weapon systems, modifications of weapons and weapons systems receive a legal review in accordance with the DoDD 2311.01 and AFI 51-401. Furthermore, ensure the completion of legal reviews for all SA/LW modifications of existing weapons or uses not reasonably contemplated or authorized by prior legal reviews. Process requests through the DAF SA/LW – Enterprise Governance, which will be forwarded to AF/JAO, Operations and International Law Directorate, to ensure appropriate reviews (e.g., legal / Non-Nuclear Munitions Safety Board) are conducted prior to fielding. This includes ground-munitions, accessories, and enablers that modify a previously approved weapon and or weapon system.

1.8.2. Ensure personnel conducting SA/LW training follow the applicable technical order (TO) guidance pertaining to maximum allowable number of rounds per day, safe distances, personal protective equipment, and backblast danger area restrictions.

1.8.3. Ensure personnel follow the guidance in the DoD Blast Overpressure Reference and Information Guide (D-BOP-RIG) when training on Tier 1 weapon systems (e.g., M3A1, M2A1, M136, M72, etc.). The guide is located on the DoD Environment, Safety & Occupational Health Network and Information Exchange (DENIX) website at <https://denix.osd.mil/auth/soh/denix-files/sites/21/2024/04/D-BOP-RIG-20240408.pdf>.

1.9. Installation Commander will:

1.9.1. Ensure funds, manpower, and modernized training facilities are available to meet the installation's base defense, training and contingency missions.

1.9.2. Enforce health and safety standards by ensuring facilities and personnel are periodically evaluated for health and safety risks.

1.9.3. Ensure the training complex complies with the environmental requirements in UFC 4-179-02.

1.9.4. Coordinate with AFIMSC when considering community partnership or a community partner shows interest in a community partnership range.

1.9.5. Determine if installation ranges will be made available for non-DAF, to include non-military use. This determination is based on command and local range requirements, safety restrictions and consideration of legal issues following consultation with the servicing Staff Judge Advocate.

1.9.6. When appropriate, and after consulting with the installation's Staff Judge Advocate, enter into a support agreement with other agencies/services (military, host nation, civilian police departments, etc.) to use their firearms training facilities consistent with AFI 25-201, *Intra-Service, Intra-Agency, and Inter-Agency Support Agreement Procedures* and or to allow other agencies/services to use DAF firearms training facilities consistent with the guidance in DoD 7000.14-R, *Department of Defense Financial Management Policy*, Secretary of Defense

Memorandum, *Reimbursable Activities in Support of Other Entities*, and AFI 32-9003, *Granting Temporary Use of Air Force Real Property*.

1.10. Medical Group Commander (or Local Equivalent) will:

1.10.1. Provide occupational and environmental health support following the guidance in DAFI 48-145, *Occupational and Environmental Health Program*; DAFI48-151, *Thermal Stress Program*; DAFMAN 48-123, *Medical Examinations and Standards*; AFI 48-101, *Aerospace Medicine Enterprise*; AFI 48-127, *Occupational Noise and Hearing Conservation Program*; and DAFMAN 48-146, *Occupational Health Program Management*.

1.10.2. Ensure bioenvironmental engineering (BE) conducts comprehensive health risk assessment (HRA) following the guidance in DAFI 48-145.

1.10.3. Provide medical surveillance examinations and input to fitness for duty determinations for workers as determined by physical condition (e.g., hearing loss, pregnancy) or work environment (e.g., ventilation change/correction) and approved by the Installation Occupational & Environmental Medicine Consultant and the Occupational & Environmental Health Working Group following the guidance in AFMAN 48-146. Continuous and daily exposure to hazards must be taken into consideration in health programs.

1.11. Civil Engineer (CE) Squadron will:

1.11.1. Provide design, construction, repair, environmental cleanup, and soil remediation as applicable and maintenance to range facilities according to installation's SA/LW training requirements. Use UFC 4-179-02 for design of new firing ranges along with this instruction. In addition, use FC 4-179-03F for planning and layout of indoor ranges along with general requirements on lanes and detailed planning requirements for indirect support areas. Provide oversight regarding the environmental condition of the firing range complex. **Note:** Air Reserve Components (ARC) (i.e., Air National Guard and the Air Force Reserve) remain the primary agency to provide design, construction and environmental expertise for construction and maintenance of small arms ranges and support facilities for ARC efforts, to include approving exemptions (deviations) and should be similar to active-duty consistent with DoDI 1225.08, *Reserve Component (RC) Facilities Programs and Unit Stationing*. **Note:** SARWG may review ARC projects for accuracy at the request of the NGB and or AF/RE.

1.11.2. Ensure the installation master plan accurately depicts the firing range boundaries. Plot the range surface danger zones (SDZ) on base maps to ensure there is no encroachment of the SDZ. Plot the vertical danger zone (VDZ) to ensure aircraft operations (flight path/approach patterns) are not at risk. Update the plan to reflect an adjusted danger zone whenever aircraft operations change (e.g., new aircraft approach angle) and or new types of ammunition, which change the VDZ, are used on the range.

1.11.3. Review the SDZ and VDZ boundaries before site selection of any new base construction project. **Note:** As new ammunition and weapons require larger SDZs, consider siting new facilities away from range boundaries to allow for future weapons and ammunition. In addition, due to the high decibel levels associated with firing ranges, ranges should be sited among facilities with compatible use.

1.11.4. Ensure all new active-duty range and major range renovation project planning documents (DD Form 1391) are coordinated through MAJCOM and sent to AFIMSC

(SARWG) for approval or disapproval. **(T-2)** For example, changing a partially contained range to a fully contained range or changing from an earthen backstop to a bullet trap constitute major renovations. **Note:** Local CE squadrons should contact AFIMSC for clarification on individual renovation projects to determine if they require review and approval. This approval also applies to modular, portable, trailer type ranges as well as community partnership ranges. **(T-2)**

1.11.5. Ensure all new range and major range renovation projects are submitted to AFCEC, Operations, Engineering Division, Civil and Cost Engineering Branch (AFCEC/COSC) for review at the 65% design stage. **(T-2) Note:** New range and major range rehabilitation projects, such as new bullet traps or mechanical systems, are reviewed by range subject matter experts for safety, engineering, environmental protection, and CATM operations, prior to construction.

1.11.6. Route active-duty range design exemption (deviation) requests through AFCEC, Facility Engineering (AFCEC/CF) workflow. AFCEC/CF will coordinate with AFSFC, Operations, Engineering Division (AFCEC/COS). Once reviewed, AFCEC/CF will forward recommendation(s) to AF/A4S for coordination and then to AF/A4C for approval or disapproval.

1.11.7. Assist with annual range inspections on all DAF ranges and facilities used by DAF personnel, including non-DAF ranges and facilities off base as needed.

1.12. Communications Squadron will: Install and maintain communication systems to support range facilities (e.g., public address systems, computer network connections, emergency communications systems). If required by host nation law or other guidance, set aside a radio frequency for use by CATM personnel to use for peer-to-peer communications.

1.13. Safety Office will: Assist the CATM section in conducting annual range inspections of all ranges and small arms training facilities used by DAF personnel. If unsafe conditions exist, provide guidance and assistance to the CATM Section Chief to develop appropriate corrective/mitigating actions. Provide assessments and support following the guidance in DAFI 91-202, *The US Air Force Mishap Prevention Program*.

1.14. Logistics Readiness Unit/Squadron or Materiel Management Activity will:

1.14.1. Notify CATM personnel when any SA/LW are initially received (e.g., initial issue from depot, transfer from another location, or return from deployment) or prior to shipment off the installation for any reason (e.g., turn-in, transfer, deployment).

1.14.2. Process unserviceable SA/LW and or their parts for turn-in to Defense Logistics Agency (DLA) or other process following logistics guidance and DoDM 4160.21, **Volume 1, Defense Materiel Disposition: Disposal Guidance and Procedures**.

1.14.3. Help with processing product quality deficiency reports (PQDR).

1.14.4. Provide transportation for trainees to and from distant training facilities, as required and approved.

1.14.5. Provide vehicles for CATM personnel to transport range equipment, munitions and SA/LW, as well as tactical vehicles required to accomplish vehicle-firing training (e.g., High Mobility Multipurpose Wheeled Vehicles, Mine-Resistant Ambush Protected, or Joint Light Tactical Vehicle).

1.14.6. Jointly, with the Security Forces Squadron, develop a process that will accommodate one-stop shop for the customer to comply with equipping and training requirements of training with individual combat equipment (ICE) during qualification firing.

1.14.7. Coordinate with CATM to ensure serialized inventories of extended storage SA/LW are synchronized with CATM inspections, so inventories and inspections are conducted simultaneously. This prevents unnecessary removal of extended storage SA/LW from packaging and ensures accountability of SA/LW when CATM conducts inspections.

1.15. Security Forces/CATM Organizational Commander will:

1.15.1. Plan for new CATM range facility construction, range modification/rehabilitation and facility maintenance.

1.15.2. Ensure facility requirements are identified to the base facility review board. If necessary, conduct periodic follow-ups to ensure range construction projects maintain work order priority commensurate to the force protection mission. Establish milestones to ensure projects and work orders are tracked until completed. Delays in this process can result in range closure, hamper SA/LW maintenance and have a negative impact on readiness. Notify senior installation leadership whenever delays disrupt work order and or construction accomplishment.

1.15.3. Submit small arms range and support facility requirements to the base CE using an AF Form 332, *Base Civil Engineer Work Request* or approved automated CE system. The Work Request Review Board reviews/coordinates range requirements with applicable wing agencies, such as Security Forces, BE, Safety, and CE (Structural Design and Environmental Engineering). When a range requirement is identified for design, wing agencies participate in the design review process. Ensure the design for new facilities and major renovations (as defined in this manual) conforms to UFC 4-179-02 guidance and this instruction. **Note:** ARC (i.e., Air National Guard and the Air Force Reserve) remain the primary agency to provide design, construction and environmental expertise for construction and maintenance of small arms ranges and support facilities for ARC efforts, to include approving exemptions (deviations) and should be similar to active-duty consistent with DoDI 1225.08. Users may obtain UFC 4-179-02 and FC 4-179-3F at <https://www.wbdg.org/dod/ufc>. Firing range facilities to include classrooms and other associated portions of the complex must meet all training and maintenance required for current and projected SA/LW in use by all DAF users.

1.15.4. Ensure the CATM section submits budget forecasts for equipment and supplies to meet the installation SA/LW training and maintenance program, to include range equipment such as range cleaning services, advanced target systems, target retrieval systems, and virtual training systems (firearm simulators).

1.15.5. Review and approve all security forces unit munitions forecasts and complete reviews required by DAFMAN 21-209, **Volume 1**, *Ground Munitions*.

1.15.6. Ensure CATM is adequately funded by the installation to support all required qualification training and repair/maintenance of all military SA/LW assigned to the installation. Ensure CATM is adequately funded by the installation to support the enhanced contracted cleaning services required to limit the exposure of CATM personnel and trainees to ammunition residue and occupational hazards.

1.15.7. Ensure CATM personnel are available to conduct required SA/LW inspections. This requirement must be included in the wing mobility plan. **Note:** This service is dependent upon owner/user notification to CATM and minimum lead-time.

1.15.8. Ensure the CATM task priority meets the installation training and maintenance requirements for base defense, contingency plans and deployments including during range closures, instructor shortages and or instructor deployments.

1.15.9. Provide SA/LW inspection and repair support for all weapons assigned to the installation and other supported units per any signed support agreement.

1.15.10. Ensure CATM personnel do not attempt de-leading projects.

1.15.11. Approve the training plan to certify non-CATM personnel as a firing line official (FLO), range safety officer (RSO), chief range officer (CRO) and assistant instructor.

1.15.12. Appoint custodians and monitors as required. If munitions custodian, appoint custodian(s) following the guidance in DAFMAN 21-201, *Munitions Management*, using AF Form 68, *Munitions Authorization Record*.

1.15.13. Establish written guidelines to address procedures to postpone/cancel training during adverse weather conditions. As a minimum, these procedures cover severe cold, extreme heat, heavy rain, and lightning.

1.16. CATM Section Chief or civilian equivalent (CATM Manager) will:

1.16.1. Serve as the facility manager for the CATM base range complex.

1.16.2. Ensure assigned SA/LW, major parts, assemblies, ammunition, and explosives are properly safeguarded following the guidance in DoDM 5100.76_AFMAN31-101 Volume 2, *Physical Security of Sensitive Conventional Arms, Ammunition, & Explosives (AA&E)*.

1.16.3. Ensure CATM adheres to all safety precautions during operations.

1.16.4. Work with local CE environmental function to develop joint hazardous waste disposal procedures according to AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*, to ensure compliance with environmental regulations, to include federal, state, and local requirements, for disposal of hazardous waste, to include lead/heavy-metals, and to ensure the proper assessment, abatement, and removal of soil contamination.

1.16.5. Oversee the base SA/LW maintenance and inspection program.

1.16.6. Coordinate with CE, Safety officials and BE on technical issues pertaining to range facility maintenance, safety, occupational health, and design. Advise on plans for new range construction, modifications and/or rehabilitation to ensure the planned facilities meet mission requirements and range criteria directives. If needed, ensure CE submits all new range and major range renovation project planning documents (DD Form 1391) are sent to the AFIMSC (SARWG) for approval or disapproval.

1.16.7. Maintain a current copy of the base map indicating the plotted SDZ and VDZ for Air Force-owned and or controlled non-contained and partially contained ranges.

1.16.8. Oversee and track instructor and weapon maintenance evaluation programs. Ensure assigned instructors are trained, evaluated, and certified to perform CATM duties.

1.16.9. Submit a PQDR following the guidance in AFI 21-115 (Interservice), *Product Quality Deficiency Report Program* and Technical Order (TO) 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*, for SA/LW and replacement parts, as necessary. Submit PQDR's on new inspection gauges that fail initial calibration within 30-days upon failure notification.

1.16.10. Appoint custodians and monitors as required. If the commander delegates the duties of munitions custodian, appoint custodian(s) according to DAFMAN 21-201, using AF Form 68. If appointing an account custodian to maintain and account for all SA/LW, equipment, supplies and SA/LW repair parts, do so according to AFI 23-101, *Materiel Management Policy*. Additionally, appoint a TO monitor for CATM TOs.

1.16.11. Maintain ammunition accountability records for expenditures, issues, and turn-ins following the guidance in DAFMAN 21-201.

1.16.12. Develop and publish operating instructions (OI).

1.16.13. Establish and maintain a reference library (electronic preferred) for the CATM section.

1.16.14. Obtain annual training forecasts from each supported organization and provide guidance to unit scheduling personnel for obtaining and managing training quotas. This guidance is to include individual or group briefings and a scheduling handbook outlining requirements and procedures. Briefings and training are to include proper use of the Automated Readiness Information System (ARIS) to accomplish unit-scheduling responsibilities.

1.16.15. Develop and publish a CATM training schedule for base organizations.

1.16.16. Submit range design criteria exemptions (deviations) through the owning unit commander to the installation CE as outlined in [Paragraph 1.11.6](#), using the DAF Form 679, *Department of the Air Force Publication Compliance Item Waiver Request/Approval*.

1.16.17. Ensure test-fire and trial operation of base firing range after construction or rehabilitation.

1.16.18. Contact BE when changes occur which may alter work practices or when conditions exist that indicate the potential to cause a health risk.

1.16.19. Establish procedures, following the guidance in the precision measurement equipment laboratory (PMEL) guidelines, to ensure required SA/LW gauges receive calibration inspections within required timelines. Complete PQDRs for any new gauges that do not pass PMEL calibration inspections. Maintain three sets of calibrated gauges (primary, secondary, and spare set) for each type of SA/LW supported. **(T-2) Exception:** CATM is only required to maintain one set of calibrated gauges for ceremonial SA/LW (e.g., M14 Rifles for Honor Guard). **Note:** Required tools and gauges are listed in the applicable TO.

1.16.20. Brief unit weapon custodians and provide guidance on procedures for issue, maintenance, inspection and turn-in of all assigned SA/LW. This guidance includes individual or group briefings and a handbook outlining requirements and procedures. Briefings, training, and handbooks will include proper use of ARIS to accomplish unit weapon custodian responsibilities.

- 1.16.21. Maintain CATM section management information in ARIS following the guidance in this publication and ARIS guidance.
- 1.16.22. Oversee CATM proficiency training program to ensure instructors develop and maintain expertise with all SA/LW they train.
- 1.16.23. Review unit-level sustainment and or proficiency training programs by helping develop courses of fire, approving courses for use on the base firing range, certifying unit personnel as range officials and providing guidance on Air Force weapon handling procedures. CATM personnel are not required to conduct the unit level training, as unit assigned personnel handle this.
- 1.16.24. With the assistance of the base CE and Safety office, conduct annual inspections of all ranges and training facilities used by DAF personnel using risk management (RM) techniques. This includes range certification of non-DAF/non-DoD and off base firing ranges used for Air Force training. This ensures all ranges meet the intent of published Air Force safety standards and Air Force personnel are not exposed to unsafe conditions.
- 1.16.25. Maintain and validate CATM lesson plans.
- 1.16.26. Establish a membership on the CATM SharePoint® site to obtain the most current guidance and training materials.
- 1.16.27. Work with base local area network administrators to establish classified and unclassified organizational e-mail accounts for the CATM section. **Note:** If classified or unclassified or both organizational e-mail accounts already exist to which members of the CATM section can be added, this will satisfy this requirement.
- 1.16.28. Ensure assigned CATM personnel obtain and maintain the knowledge and skills necessary to provide subject matter expertise on weapons and munitions capabilities, weapon mix/placement and employment methods to ensure maximum effectiveness.
- 1.16.29. Ensure assigned CATM personnel are trained, evaluated, maintain skill proficiency, and participate in continuous learning.
- 1.16.30. Update the status of ranges and upload completed annual inspection reports in ARIS within five duty days after the annual inspection or when changes occur to the small arms range(s) used by the base.
- 1.16.31. Ensure range facilities are maintained in a safe condition and necessary repairs or upgrades are identified to the appropriate agencies in a timely manner.
- 1.16.32. Coordinate all range maintenance operations with base safety, environmental engineering, and BE to ensure all safety, environmental and health hazards are identified, and adequate preventive measures are implemented.
- 1.16.33. Ensure that all assigned personnel receive required training and that this training is documented as required by DAF and local directives for operations they perform that may expose them to health hazards such as lead dust, heavy metal dust, and other contaminants/hazards that collect on range surfaces.
- 1.16.34. Include time for range maintenance, SA/LW proficiency, and in-house training in the monthly schedule.

1.16.35. Develop the training and certification program to certify non-CATM personnel as a FLO, RSO, CRO and assistant instructor.

1.17. CATM Trainer will:

1.17.1. Assist CATM Section Chief with their roles and responsibilities.

1.17.2. Administer and track instructor and weapons maintenance evaluations. Ensure assigned instructors are trained, evaluated, and certified to perform CATM duties utilizing the Air Force Job Qualification Standard (3P0X1B).

1.17.3. Ensure enough personnel are trained and certified to perform FLO duties during live fire when adequate numbers of Air Force Specialty Code (AFSC) 3P0X1B personnel are not available.

1.17.4. Train and certify personnel, to include Security Forces (i.e., Defender Weapons Trainer [DWT] conducting qualification training), to operate the base small arms range in support of approved unit proficiency or sustainment training, recreational programs (if authorized), and non-Air Force range use following the guidance in this instruction.
Exception: This requirement does not apply to certified CATM personnel.

1.17.5. Establish and administer a CATM firearms proficiency training program to ensure instructors develop and maintain expertise with all SA/LW they train.

1.17.6. Assist base units in developing unit-level sustainment/proficiency training programs with courses of fire, approving courses for use on the base firing range, certifying unit personnel as range officials and providing guidance on approved weapon handling procedures.

1.17.7. Ensure assigned personnel receive explosive safety training.

1.17.8. Maintain instructor folder on 3P0X1B and or DAF Civilian equivalent assigned to a CATM position. At a minimum, the instructor file should be electronic and contain the following:

1.17.8.1. Instructor and or weapon maintenance evaluations.

1.17.8.2. Current DAF Form 522, *Ground Weapons Training Data*, AF Form 55, *Employee Safety and Health Record*, and training certificates.

1.17.9. Review student critiques, provide feedback, and address any concerns.

1.17.10. Conduct lead instructor evaluations.

1.17.11. Conduct annual instructor evaluations on a different SA/LW each year (evaluations cannot be on the same type of SA/LW for consecutive years).

1.18. CATM Instructor Supervisor will:

1.18.1. Be an AFSC 3P051B with the minimum grade of E-5 or a DoD civilian equivalent (see glossary).

1.18.2. Assist the CATM Trainer by performing on-the-job training (OJT) with CATM instructors on range operations and classroom procedures.

1.18.3. Conduct practice evaluations prior to an instructor receiving a lead instructor evaluation, as needed.

1.19. CATM Instructor will:

- 1.19.1. Be an AFSC 3P0X1B or a DoD civilian equivalent (see glossary). Only personnel currently task certified/qualified as outlined in this instruction and working CATM duties, such as conducting qualification training, inspecting/repairing SA/LW or other duties identified in this instruction may perform CATM functions. **(T-1)**
- 1.19.2. Train, qualify and certify personnel on Air Force SA/LW and courses of fire.
- 1.19.3. Conduct firing range operations and courses of fire following the guidance in this instruction and DAFMAN 31-131 V2. **Note:** The guidance in the family of publications takes precedence over local guidance.
- 1.19.4. Evaluate and correct student performance during training.
- 1.19.5. Maintain qualifications on all SA/LW and courses for which they are required to instruct, which they perform FLO duties and for which they have an arming requirement.
- 1.19.6. Maintain and personalize Air Force approved lesson plans with emphasis on enhancing student learning effectiveness.
- 1.19.7. Continuously improve teaching and training skills through practice and study.
- 1.19.8. Participate regularly in a proficiency training program to enhance coaching and training techniques.
- 1.19.9. Maintain proficiency on inspection and maintenance procedures.
- 1.19.10. Perform inspections and maintenance (repair) of SA/LW.
- 1.19.11. Through formal and on the job training, experience, and self-study, obtain and maintain the knowledge and skills needed to function as a subject matter expert on weapons and munitions capabilities.
- 1.19.12. Establish a membership on the CATM SharePoint® site to obtain the most current guidance and training materials.

Chapter 2

SECTION MANAGEMENT

2.1. Overview. This chapter provides guidance for efficient management of CATM, administration, and safe operation of weapons training, and maintenance facilities.

2.2. Section Management. The CATM section implements qualification training and executes the inspection and maintenance program. In some cases, this is an expansion of responsibilities outlined in DAFI 31-131 for the CATM organizational commander and the CATM Section Chief. The following Paragraphs aid in operation and administration.

2.2.1. Program Measurement. AF/A4S measures training, manpower, ammunition expenditure, range facilities, and firearm types and quantities on a recurring basis. This data is obtained through ARIS and other systems. Reports cover the fiscal year period 1 October through 30 September.

2.2.2. Reference Library. CATM sections will establish and maintain an up-to-date reference library (electronic references preferred) containing applicable DoD and DAF publications, TOs, US Army manuals/training circulars, commercial manuals, copies of MAJCOM and locally produced supplements and or OIs, as well as other guidance required to perform the CATM function. **(T-2) Note:** CATM unit type codes (UTC) should use electronic references.

2.2.2.1. CATM sections will establish an Enhanced Technical Information Management System (ETIMS) account. AF TOs provide instructions for the operation and maintenance of AF military systems and end items. CATM sections should establish a Warehouse Management System (WMS) account to ensure they are pulling the most current publications and forms and subscribe to implementing publications.

2.2.2.2. CATM will conduct monthly checks of DAF indexes for changes to the reference library and TO indexes for new or changed manuals covering tools (e.g., hand and power), equipment and accessories (e.g., binoculars, optics, night vision devices, machinery), gauges, ammunition, SA/LW, mounts, etc. to ensure current guidance on maintenance, repair, and handling is available. **(T-2)** Document monthly checks electronically or on a locally developed or general-purpose form.

2.2.3. Records Management. Manage records and files as outlined in the opening Paragraph to this instruction.

2.2.4. Operating Instruction. The CATM Section Chief will develop and maintain an OI(s) to provide guidance for local policies and procedures required to manage the installation's training, range operations, and maintenance programs in accordance with installation or squadron or both guidance. **(T-2)** As a minimum, include the following items:

2.2.4.1. Range Rules. This portion of the document sets the standards for the specific range(s) in question (rifle range, handgun range, shoot house, shotgun range, etc.). This includes all ranges the section may use periodically to include locations off the installation, sister-service and non-DoD ranges. Explain unique requirements for range operations, including special circumstances such as specialized firing or events. Include limitations and prohibitions for range activities as well as emergency notification procedures.

2.2.4.2. Personal Protective Equipment (PPE). Identify the operations and the required PPE. This includes all CATM activities and operations involving hazards and personnel. In addition, describe the care of this equipment.

2.2.4.3. Approved SA/LW. Identify the permitted and prohibited types for each individual range. For example, “rifles, handguns and shotguns are permitted; machine guns and automatic rifles are prohibited.”

2.2.4.4. Approved Munitions. Identify the permitted and prohibited munition types and calibers for each individual range.

2.2.4.5. Approved Laser Devices. Identify approved laser devices that may be used on the range(s), as well as laser safety procedures and equipment required.

2.2.4.6. Approved Targets and Barricades.

2.2.4.6.1. The CATM Section Chief must develop standards for their safe use and placement of targets based on range type and or configuration. **(T-2)** In addition, intermediate barriers may be set up to shoot through that create hazards of their own (e.g., glass, wallboard).

2.2.4.6.2. Personnel using steel targets for live fire on any range will follow the guidance in the Security Forces Training Reference Guide (SFTRG) 6. **(T-1)** The CATM Section Chief or Trainer will ensure compliance with the guidance on DAF ranges and provide advice to users on non-DAF ranges. **(T-2)**

2.2.4.7. Daily Range Opening and Closing Procedures. Identify all activities necessary for range opening and closing, including checks of facilities (classroom and cleaning area), equipment, communications, and the SDZ.

2.2.4.8. Lead Management. Explain lead management procedures such as remediation. In addition, this area could be used to define precautions for airborne and bulk lead hazards. Specific hazards are associated with exposure to lead and bullet residue. CATM personnel will not attempt to perform de-leading or lead decontamination projects. **(T-2)**

2.2.4.9. Explosive Safety. Define safety procedures including mishap and reporting procedures for handling, transporting, and storing of munitions and explosives following the guidance in Defense Explosive Safety Regulation (DESR) 6055.09_AFMAN 91-201, *Explosives Safety Standards*. Include vehicle preparation, securing the load, routes (both primary and alternate), coordinated safe havens, communication requirements, notification procedures, personnel and arming requirements and incident procedures as a minimum.

2.2.4.10. SA/LW and Munitions Transport (if applicable). Explain in detail the procedures for transporting SA/LW and munitions. Include vehicle preparation, securing the load, routes (both primary and alternate), coordinated safe havens, communication requirements, notification procedures, personnel and arming requirements and incident procedures as a minimum.

2.2.4.11. Hazardous Material (HAZMAT) Procedures. The CATM Section Chief will identify HAZMAT associated with local range operations and necessary safety precautions when dealing with these substances, as well as procedures for storing and handling HAZMAT. **(T-0)**

2.2.4.12. General Safety/Hazards. Identify potential hazards and mitigation procedures to abate each hazard including all operations regardless of frequency. Outline hazard abatement processes, procedures and responsibilities as directed in DAFI 91-202.

2.2.4.13. Annual Range Inspection Procedures. Identify procedures for conducting annual range safety and health inspections; include required tools, base agencies needed/requested, and report contents/routing.

2.2.4.14. Resource Protection. Use established standards for protecting sensitive conventional arms, major parts and assemblies, ammunition, and explosives in the custody of any component of DoD. **(T-0)** DoDM 5100.76_AFMAN 31-101 V2 outlines protection standards. CATM must refer to the base integrated defensive plan to ensure all local policies are followed. **(T-3)** Identify procedures for protecting sensitive assets during CATM operations such as: storage, range, classroom, and transportation.

2.2.4.15. SA/LW Maintenance Procedures. Define procedures for all maintenance, scheduling, repairs, documentation, parts accountability/inventory, and safety. Most parts are coded as pilferable items and are subject to Air Force audit review. This audit trail should accurately track the requisition of parts (from CATM), accountability and disposition of the end item.

2.2.4.16. Scheduling. Explain all necessary procedures and activities for scheduling training and range operations, including dealing with unit schedulers. Define all elements, which facilitate scheduling of classes, timeframes, cancellations, rescheduling, and no shows.

2.2.4.17. Instructor Proficiency. Define requirements for instructor proficiency training, frequency, purpose, and documentation.

2.2.4.18. Military Use of Ranges by Non-CATM Personnel/Units. Specify the procedures and practices for military personnel/units to use CATM facilities for official military training other than qualification training provided by CATM (unit-level sustainment training or proficiency or both). Describe scheduling, course of fire approval, range official certification process, identify personnel limitations, range restrictions, conduct, authorized and prohibited firing operations, mishap and hazard reporting procedures, opening, and closing procedures and emergency notification procedures.

2.2.4.19. Non-Military/Civilian Use of Ranges. Define the procedures and practices for personnel to use CATM facilities for other than official military training. Describe range official certification process, identify personnel limitations, range restrictions, conduct, authorized and prohibited firing operations, mishap and hazard reporting procedures, opening, and closing procedures and emergency notification procedures.

2.2.4.20. Certification of non-CATM Personnel. Identify the criteria and process for certifying personnel to operate the firing range. Include duration of certification and recertification procedures.

2.2.4.21. Range Closure and Cancellation Procedures. Identify procedures for range closures due to hazardous conditions. Define training cancellation procedures for adverse weather conditions as defined by the CATM section organizational commander. The final decision to conduct or cancel training on any given day rests with the CATM Section Chief.

Conditions to consider include severe cold, extreme heat, local lightning, heavy fog, heavy rain, etc.

2.2.5. Support Agreements (SA). CATM support of tenant units and other organizations will only be provided pursuant to an approved support agreement. The CATM Section Chief will work with the Logistics Readiness Squadron Support Agreements manager and the installation Staff Judge Advocate to create and maintain any such support agreements. **(T-3)** CATM maintains approved copies of all in-force SA in which they are involved.

2.2.5.1. SA - Training Support. The host CATM section will provide qualification training to those Air Force Reserve Command (AFRC) tenant units without their own AFSC 3P0X1B or DoD civilian equivalent personnel assigned. **(T-3)** Tenant AFRC units without enough of their own AFSC 3P0X1B or civilian equivalent personnel assigned and present during a Unit Training Assembly (UTA), request host CATM support to augment their personnel during qualification-training through the host-installation Security Forces/CATM organizational commander. If host CATM manpower support is required, it is provided if manpower permits. For AFRC units, this support includes complete access to all items necessary to conduct qualification training. Unless specified in the SA or agreed upon by the host Security Forces/CATM organizational commander, this support does not include ammunition. Formalize this training and/or support through an agreement following the guidance in AFI 25-201.

2.2.5.2. SA-Weapons Maintenance Support. The host CATM section will provide all SA/LW maintenance support, mandated in this manual, to those tenant units without their own AFSC 3P0X1B or DoD civilian equivalent personnel assigned. **(T-3)** Tenant units without sufficient numbers of their own AFSC 3P0X1B, or civilian equivalent personnel assigned and present during a UTA, request host CATM support to augment their personnel during SA/LW maintenance cycles through the host-installation Security Forces/CATM organizational commander. If host CATM manpower support is required, it should be provided if manpower permits. For AFRC units, this support includes complete access to and use of all SA/LW maintenance facilities, tools, gauges, publications, and any other items necessary for SA/LW maintenance. Unless specified in the support agreement or agreed upon by the host Security Forces/CATM organizational commander, this support does not include spare SA/LW parts. Formalize this training and or support through an agreement according to AFI 25-201.

2.2.6. Budget Requirements. The CATM Section Chief prepares and submits annual budget inputs for all resources necessary to accomplish the mission. The CATM section is responsible for the SA/LW maintenance and qualification training of the entire installation including tenant units with approved SA and geographically separated units assigned to the wing or with approved SAs and budgets accordingly.

2.2.7. Evaluations. Instructors who perform SA/LW training and or maintenance will have current evaluations as required in this manual dependent on their duties. **(T-2)**

2.2.8. Munitions.

2.2.8.1. Munition Authorizations and Forecasting. DAFMAN 21-201 outlines standard forecasting procedures along with DAFMAN 21-209 V1, AFMAN 21-209 **Volume 2, Demolition Munitions**, and the ground munitions authorization tables (GMAT) to develop

appropriate requirements forecasts. Prepare and submit a Peacetime Conventional Ammunition Requirements forecast using the Forecast and Allocation Module of the Agile Munitions Support Tool.

2.2.8.2. Handling of Material Potentially Presenting an Explosive Hazard. CATM will store, handle and process expended munitions residue following the guidance in DoDI 4140.62, *Material Potentially Presenting an Explosive Hazard (MPPEH)* and DAFMAN 21-201.

2.2.9. CATM will obtain a serialized listing from the base Logistics Readiness Squadron/Unit or Materiel Management Activity of all SA/LW, and associated equipment assigned to the installation, identified by unit at least annually. **(T-3)** This listing includes types and quantities of firearms, owning organizations (account codes), and points of contact. **Note:** This may also include local school/university Reserve Officer Training Corps (ROTC) programs with drill weapons. If automated, this listing can be used in a spreadsheet format as an individualized weapon status report, which provides a working resource for individual SA/LW actions such as inspections.

2.2.10. Maintain PMEL documentation provided by the PMEL office for all inspection gauges in use by the CATM section.

2.2.11. SA/LW Inspection Reports. CATM will complete an inspection report for every field-level serviceability inspection conducted, regardless of the type or reason for the inspection. **(T-2)** Describe the type of inspection (e.g., Semi-Annual, Pre-Embarkation, Pre-Issue, Turn-In), total number inspected, identified by type and status (extended storage, in-use or deployed).

2.2.11.1. The CATM Section Chief will sign the initial report within five duty days of completing the inspection. **(T-2)** List all uncorrected discrepancies and include the model, caliber, serial number, discrepancy, and required corrective action. Document discrepancies corrected at the time of inspection by the type and number with a brief description of the discrepancies and address the report to the unit's weapon custodian with a realistic suspense date to correct any discrepancies (not to exceed 30 calendar days). **(T-2)** For example: "Three M4 carbines found with firing pins installed incorrectly--Corrected at time of inspection." Ensure the cover memo or report instructs the custodian to obtain their unit commander's endorsement on the report after all discrepancies are corrected and before returning it to the CATM Section Chief. If owner/user maintenance or corrective action is required, CATM must complete a follow-up inspection within 30 calendar days of the initial report date. **(T-2)** The CATM Section Chief must complete a report (if open discrepancies continue to exist) or memorandum to the inspected unit weapon custodian (if all discrepancies are corrected) for all follow-up inspections, using the previous guidance for initial inspection reports. **(T-2) Note:** Refer to the CATM SharePoint® site for an example of an inspection report.

2.2.11.2. If no discrepancies are noted, the CATM Section Chief will prepare a memo to the unit weapon custodian indicating the date and type of inspection, as well as listing the quantity (by model), model, and storage status. **(T-2)** The memo includes a statement informing the unit that no further action is required.

2.2.11.3. The CATM section will maintain copies of the last two-unit inspection reports for each type of inspection and maintain pre-embarkation inspections until the deployed SA/LW returns to home station. **(T-2)** The CATM Section Chief will maintain statistics on inspections conducted in ARIS. **(T-2)**

2.2.12. Scheduling. The CATM Section Chief will maintain records of unit annual training requirements, requests for training, qualification training statistics, class/range schedules and range utilization data. **(T-3)** CATM will develop a scheduling handbook for unit scheduling officials that explains the process and identifies local requirements for obtaining CATM training quotas, as well as briefing unit representatives on these items. **(T-3)** CATM schedules enough classes for each weapon and course throughout the year to ensure unit training requirements are supported.

2.2.12.1. Training Schedules. Develop training schedules to ensure maximum use of CATM facilities and resources. Instructor availability is a key consideration when developing schedules. Schedules include time for inspections, weapon and equipment maintenance, range maintenance, instructor training/evaluation, instructor proficiency firing, and unit sustainment/proficiency training programs.

2.2.12.2. The CATM section will receive an annual training forecast from each supported unit. **(T-3)** This forecast identifies the number of personnel requiring qualification training each year by weapon and course and includes the commander's rationale or justification for the training (in-garrison/peace time arming requirement, permanent change of station [PCS] or deployment to a combat zone/designated hostile fire area). Refer to DAFI 31-117, *Arming and the Use of Force*, for additional guidance on arming plans. Unit annual training forecasts provide the basis for the CATM training schedule.

2.2.12.3. CATM uses the following priorities for scheduling individuals for training. The CATM organizational commander may modify these priorities when installation mission requirements dictate.

2.2.12.3.1. Qualification training of personnel filling a deployment tasking or deployment tasking to a combat zone in time of war or a designated hostile fire area that requires weapons qualification training, to include personnel zeroing weapons for deployment.

2.2.12.3.2. Qualification training of individuals being permanently reassigned overseas with a personnel processing code requiring qualification training.

2.2.12.3.3. Qualification training of personnel or units with a home station arming requirement, personnel who maintain qualification by virtue of their AFSC, to include zeroing for home station arming.

2.2.12.3.4. Qualification training of any other individuals requiring arming to support operational missions.

2.2.12.3.5. Mandatory unit sustainment training.

2.2.12.3.6. Unit proficiency training, other than mandatory sustainment training.

2.2.12.4. Unit scheduling officials schedule personnel for training through ARIS. ARIS is the only official database for Air Staff and MAJCOM agencies to access qualification

training and range utilization data. **Note:** If ARIS is not available CATM may implement temporary methods of conducting scheduling with supported units.

2.2.12.5. Due to the limited number of training days, units will maintain a 90-percent range utilization rate. **(T-3) Note:** This is determined by multiplying the number of students trained during a period (month, quarter, year, etc.) and dividing that by the number of potential range positions for the same period. The CATM organizational commander will establish a training utilization program to ensure units are notified in the event their utilization rate drops below 90-percent. The program may include no-show letters, attendance statistics, or unit range utilization data.

2.2.13. Trespass Notices. The CATM Section Chief will place legal notices to the public in the base bulletin and or base newspapers annually. **(T-3)** Place similar notices in local area newspapers if the base is considered an open installation, or all, or part of the range impact area lies outside secured base perimeters. **(T-2)** Give the location of the range or ranges, and state trespassing is not only illegal but also dangerous because of gunfire. In addition, give the office address, personnel to contact, and phone numbers to call in case there is a valid need for entry. Notices are not required at overseas locations where tensions are high, and the local threat could cause such notices to bring undue attention to the base or for fully contained ranges.

2.2.14. Safety and Health Training. CATM personnel will be trained to use all authorized equipment and know the potential hazards of the workplace, review occupational safety and health guidance, and be familiar with the Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for all hazardous products used in the section. **(T-0)** Such hazards include exposure to noise, airborne lead, cleaning solvents, various chemicals and improper range or cleaning room ventilation. The squadron training section ensures all CATM personnel receive periodic training in ground/weapons safety, use of force, and tactical combat casualty care (TCCC).

2.3. Qualification Training. The Section Chief is responsible for qualification training of assigned CATM personnel. CATM instructors will maintain live-fire qualifications on all weapons and courses of fire they are lead instructor certified, perform lead instructor duties, and for which they perform FLO duties. **(T-2)** They will also maintain qualification on any weapon they have an armed duty and or UTC requirement. **(T-0)**

2.3.1. Instructors performing CATM duties who are lead instructor certified or who qualify strictly to maintain instructional skills are not required to attend classroom training or participate in the semi-annual recurring training (classroom/performance evaluation) sessions for weapons with this requirement. If instructors qualify solely for teaching certification, they are also exempt from semi-annual live-fire qualification for weapons/courses with this requirement. Additionally, CATM instructors who qualify merely to provide training and who do not have an arming requirement with a weapon are not required to complete sustainment training and are only required to qualify once per year, regardless of the course requirements. **Note:** If tasked for in-garrison arming or deployment, CATM personnel must complete the entire course of fire for the applicable weapon and tasking/duty. **(T-0)**

2.3.2. Instructors assigned to a QFL3B will accomplish task certification on all weapons designated by Mission Capability Statement. **(T-2)** Training for unique SA/LW not provided/available at home station and maintenance training certification can be accomplished

at Air Education and Training Command (AETC) formal schools or at regional training centers. Live fire qualification is not required for personnel assigned to the QFL3B as the UTC is maintenance support and not training. When practical, it is highly recommended proficiency ammunition be used to increase instructor skills and knowledge of SA/LW supported by the QFL3B.

2.4. Proficiency Training. Permit and establish a proficiency training program for assigned personnel to become a more skilled instructor through training. Proficiency firing is conducted quarterly. Instructors do not wait until the last month of the fiscal year to expend the annual allotment authorized.

Chapter 3

CLASSROOM PROCEDURES

3.1. Overview. This chapter provides information to assist instructors in preparing for classroom and range activities. CATM operations are executed with the utmost professionalism and efficiency, with emphasis on continued improvement. Personnel must pass all course objectives by demonstrating their ability to safely employ and maintain the weapon(s) as well as effectively engage targets prior to being certified. **(T-0)**

3.2. Classroom Procedures. Effective classroom instruction and procedures enhance learning. Remove or reduce controllable distractions within the classroom. Ensure all material is adequately covered; shortcuts are not authorized. Every class will include the objectives outlined in DAFMAN 31-131 V2.

3.2.1. Instruction Procedures.

3.2.1.1. Lead instructors will only use approved lesson plans and slide presentations when conducting qualification training. **(T-1)** Lead instructors will ensure all information in the lesson plan (left and right columns) is presented so students can acquire intended knowledge and skills. **(T-2)** If the classroom is equipped, lead instructors must use the approved training slide presentations during qualification training. **(T-1)** **Note:** The CATM Section Chief may add but not subtract topics.

3.2.1.2. Lead instructors will ask the following questions prior to starting classroom instruction. **Note:** The CATM section should develop procedures to address responses that are perceived violation(s) of the UCMJ; this may include contacting the units' first sergeant and or on-duty security forces for assistance.

3.2.1.2.1. Has anyone consumed alcohol or any other intoxicating or hallucinatory drug or prescription medication or substance that could impair their judgment? **(T-3)**

3.2.1.2.2. Has anyone consumed any form of alcohol or used over the counter drugs or prescription medications that could impair their ability to handle a firearm within the last eight-hours? **(T-3)**

3.2.1.2.3. Is anyone on a profile (i.e., AF Form 469, *Duty Limiting Condition Report*) that would prevent them from conducting live-fire training? **(T-3)**

3.2.1.2.4. Did anyone complete an eight-hour shift immediately prior to training? **(T-3)**

3.2.1.3. Lead instructors will provide Combat Mindset training during all qualification-training classes (See SFTRG 6). **(T-1)** This training helps students understand the state of mind required to survive, eliminate the threat, and continue to fight.

3.2.1.4. Lead instructors are responsible to ensure learning is achieved. Instructors ensure all necessary preparations are accomplished prior to starting the class. Instructors continually evaluate all elements and materials to support training and ensure effectiveness. Ensure instructor assistance is provided to students having difficulty with the material.

3.2.1.5. Lead instructors are highly encouraged to provide additional information if it does not conflict with policy or procedures and is approved by the CATM Section Chief.

3.2.2. Lead Instructor and Tower Operator. The lead instructor and tower operator must be a task certified 3P0X1B or DoD civilian equivalent and be qualified on the weapon and course of fire on which they are providing training and assigned to a CATM duty position. **(T-1)** For OJT purposes, a 3P031B may perform as lead instructor under the direct supervision of a 3P051B, or DoD civilian equivalent until task certified. The tower operator is in addition to each firing point instructor and the tower operator may not serve as a firing line instructor. **(T-2)**

3.2.3. Breaks. Provide breaks at regular intervals (typically every 50 minutes).

3.2.4. Classroom Safety. Instructors will ensure a safe classroom environment. Mishaps are avoided when sound safety precautions are followed.

3.2.4.1. Primary instructors are not permitted to have live ammunition while performing lead-instructor duties. **Note:** Only instructors performing resource protection duties are permitted to be armed in the classroom and or cleaning area. Avoid arming assistant instructors and if necessary due to limited manpower, assistant instructors should be armed with a different type of weapon than that being instructed.

3.2.4.2. Instructors will ensure the bores of all weapons used for training are checked for obstructions by running a cleaning rod the full length of the bore and chamber (if weapon design permits) and will not allow live fire if not checked using this method. **(T-1)**

3.2.4.3. Students with an assigned duty weapon or students bringing a non-CATM weapon to training will clear their weapons (no live ammunition present) prior to entering the classroom. **(T-1)** CATM instructors will verify that all SA/LW are cleared before allowing them in the classroom using the same method outlined in [Paragraph 3.2.4.2](#). **(T-1)**

3.2.4.4. CATM instructors will inspect all dummy ammunition, including boxes/containers, for live rounds before daily classroom use, including rounds in student desks or other locations. **(T-2)** In addition, CATM instructors will inspect the classroom daily, before training, to ensure there is no live ammunition present. **(T-1)** **Note:** Only use authorized dummy ammunition for instructional purposes.

3.2.4.4.1. Instructors will ask students if they have live ammunition, dummy rounds, or blank rounds on their person before allowing the weapon to be brought into classroom. **(T-1)**

3.2.4.4.2. Other than rounds carried by resource protection personnel, live ammunition is not allowed in the classroom.

3.2.4.5. CATM sections should maintain two sets of training web gear for rifle and handgun classes.

3.2.4.5.1. Training gear used in the classroom should not be intermingled with the live-fire gear used on the range.

3.2.4.5.2. CATM officials must ensure (visually inspect) weapons, magazines, and gear is purged of live ammunition before returning the weapons and gear to the classroom environment, including magazines pouches. **(T-1)**

3.2.4.5.3. Trainees may use their issued duty gear, providing no ammunition is introduced into the classroom.

3.2.4.6. In addition to standard loading and clearing procedures, CATM will provide instruction on clearing barrel procedures during classroom training using the procedures and guidance in DAFMAN 31-131 V3.

3.3. Assistant Instructors. Assistant instructors perform key duties during qualification training, to include safety, resource protection, and coaching. In the classroom, they augment the primary instructor during portions of training requiring physical handling of weapons and during performance evaluation sessions. They assist trainees by reinforcing correct techniques and help promote a positive learning environment. On the firing line, they maintain a safe training environment for trainees and instructors. They are responsible for coaching and assisting shooters as necessary during practice phases of qualification training. Clear communication between the tower operator and FLO(s) is key to effective firing line operations. **Table 3.1** outlines student to assistant instructor ratios for classroom and range activities.

3.3.1. Assistant instructors are 3P0X1B, DoD civilian equivalent, or personnel task certified by the CATM Section Chief and qualified on the weapon and course of fire for which they are providing training. **(T-1)** Non-CATM personnel must have a 5-skill level in their primary AFSC. **Note:** This option only applies to rifle/carbine, handgun, shotgun, and submachine gun training.

3.3.2. FLO are 3P0X1B, DoD civilian equivalent personnel or personnel task certified by the CATM Section Chief and qualified on the weapon and course of fire. Non-CATM personnel must have a 5-skill level in their primary AFSC and may perform FLO duties for rifle, carbine, handgun, shotgun, and submachine gun training only. **Exception:** United States Air Force Academy (USAFA) cadets may perform FLO duties during Basic Cadet Training on the carbine and or handgun orientation and or qualification course at the USAFA after they complete all required training and certification outlined in **Paragraph 3.3.2.1** through **Paragraph 3.3.2.2.**

3.3.2.1. CATM sections will develop a comprehensive training and certification program to certify non-CATM personnel as a FLO, RSO, CRO, and assistant instructor. **(T-2)** When performing duties as FLO with task certified CATM personnel as the tower operator, non-CATM personnel will meet the student-to-instructor ratios listed in **Table 3.1**. At a minimum, training will include:

3.3.2.1.1. Range opening and closing procedures. **(T-2)**

3.3.2.1.2. Weapon and range safety. **(T-2)**

3.3.2.1.3. Loading and clearing procedures (weapons handling). **(T-2)**

3.3.2.1.4. FLO and RSO roles and responsibilities. **(T-2)**

3.3.2.1.5. Tower operator and CRO roles and responsibilities. **(T-2)**

3.3.2.1.6. Range operations and commands. **(T-2)**

3.3.2.1.7. Firing line procedures and evaluation techniques. **(T-2)**

3.3.2.1.8. Range (to include dye-marking training areas) and munition limitations. **(T-2)**

3.3.2.1.9. Coaching techniques. **(T-2)**

- 3.3.2.1.10. Course of fire requirements and procedures. **(T-2)**
 - 3.3.2.1.11. Instructor to student ratios. **(T-2)**
 - 3.3.2.1.12. Shooter errors and target analysis. **(T-2)**
 - 3.3.2.1.13. Emergency notification procedures. **(T-2)**
 - 3.3.2.1.14. Installation, removal, of dye-marking/blank firing adapters and attachments (if required). **(T-2)**
 - 3.3.2.1.15. Communication commands, tactical movement techniques (individual and team) and use of cover (if required). **(T-2)**
 - 3.3.2.1.16. Proper firing positions, to include urban firing positions (if required). **(T-2)**
 - 3.3.2.1.17. Instruct Shoot, Move and Communicate (SMC), if required. **(T-2)**
 - 3.3.2.1.18. Live-fire evaluation and or SMC evaluation. **(T-2)**
- 3.3.2.2. Training and Certification Documentation. The CATM organizational commander and the individual’s commander must approve non-CATM FLO, RSO, and CRO in writing. **(T-2)** CATM will maintain a copy of approval letters.
- 3.3.2.2.1. This certification is valid for one year and only pertains to host installation ranges and ranges operated by the host installation. Personnel must complete refresher training annually to maintain certification. **(T-2)** The CATM Section Chief may revoke certification if individuals fail to follow established guidance or if they perform duties in an unsafe manner on any DAF firing range.
 - 3.3.2.2.2. Document task certification in an automated training record system or paper-based, when approved. Document certified personnel, RSO and CRO certification on AF Form 483, *Certificate of Competency*. The CATM Section Chief will sign the AF Form 483 and personnel will maintain it on their person while operating the range. **(T-3)** CATM will maintain a locally developed training log of all personnel certified and indicate when their certification expires (refresher training is due) at the CATM section. **(T-3)** Retain this log for 2-years after the last certification date or as directed by the Air Force Records Disposition Schedule.

Table 3.1. Minimum Instructor to Student Requirements/Ratios. (T-1)

R U L E	If the weapon is	Then one classroom assistant instructor per:	Except for Paragraph 3.3.3 , one tower operator per firing line is required. In addition, one FLO per:
1	Rifles, submachine guns, carbines, pistols,	28 students (see notes)	3 students during day automatic/burst phases, when students are using automatic or burst capable SA/LW, and during all night fire phases 7 students during all semi-automatic day fire phases

	revolvers, shotguns		1 student during any training involving shooter movement with loaded SA/LW (shoot, move, & communicate)
2	Grenade launchers and anti-armor weapons	14 students (see notes)	Weapon
3	Machine guns and automatic rifles	14 students (see notes)	Weapon
4	Heavy machine guns (e.g., M2A1/MK19)	7 students	Weapon
5	Long Range Precision Rifles (e.g., M110A1)	7 students	Weapon

Notes:

1. A minimum of one assistant instructor is required for all classroom instruction.
2. If class size dictates a need for multiple assistant instructors, additional assistant instructors are only required during the weapon performance/evaluation portions of the class.
3. The requirement for one FLO per student during any training involving shooter movement with loaded SA/LW does not apply to shooter movement within the firing position, such as in the Rifle/Carbine Air Force Qualification Course (AFQC).

3.3.3. During live-fire training sessions, CATM may supervise up to three students for semi-automatic day fire phases specified under Rule 1 in [Table 3.1](#) without the presence of a tower operator. A tower operator must be present when four or more students are on the line. **(T-2)** This only pertains to rifle, carbine, handgun, shotgun, and submachine gun training programs. **(T-1)** All other safety requirements apply. When CATM personnel are firing their own instructor qualification training or proficiency ammunition, the CATM Section Chief may establish written procedures to conduct firing of up to six CATM personnel using only a tower operator. Firing line officials are required for non-tasked certified 3P031B Combat Arms Apprentice Course graduates until task certified on the weapon and course.

3.4. Instructor Skill Level. Certified instructors are responsible for the safety of all personnel participating in qualification training. [Table 3.2](#) outlines instructor skill level requirements.

Table 3.2. Instructor Skill Level. (T-1)

R U L E	If duty is: (See Note)	The individual possesses Air Force Specialty Code (3P0X1B includes DoD civilian equivalent)				Non-3P0X1B Task Certified 5-Skill Level Personnel (in accordance with
		Non-Task Certified 3P0X1	Task Certified DWT	Non-Task Certified 3P0X1B	Task Certified 3P0X1B	

						para 3.3.1 and/or 3.3.2)
1	Lead Instructor		X		X	
2	Assistant Instructor	X	X	X	X	X
3	Tower Operator		X		X	
4	Firing Line Official		X	X	X	X

Notes:

1. Non-CATM personnel may only perform FLO duties for handgun, rifle, carbine, shotgun, and submachine gun training.
2. Non-CATM personnel may not perform FLO duties on other weapons such as, grenade launchers, anti-armor weapons, machine guns, automatic rifles, and heavy machine guns.
3. For OJT purposes, a non-task certified 3P031B may perform as lead instructor and or tower operator under the direct supervision of a task certified 3P051B, 3P071B or DoD civilian equivalent until task certified.
4. Tasked certified DWTs may perform lead instructor, assistant instructor, tower operator, and FLO duties for Defender Qualification Courses only.

3.5. SA/LW Safety. CATM personnel will ensure a safe handling environment. **(T-1)**

3.6. Lesson Plans. The CATM Section Chief will certify each instructor’s lesson plan for personalization and accuracy every 12-months or whenever changes to policy, procedures or training occurs. **(T-2) Note:** A personalized lesson plan has questions, transitions, examples, training aid correlation, personal notes, and anything necessary to assist or enhance training. Instructors will maintain their own updated personalized lesson plans to use during instruction. **(T-2)** Document proof of lesson plan review electronically or on a form letter, general-purpose worksheet or locally developed form and place a copy in each lesson plan. **(T-2)**

3.7. Training Aids. Several types of training aids (including firearms/virtual training systems) are available. Good training aids and techniques can shorten the time needed for teaching, learning, and proficiency. Training aids encourage student interest and get them actively involved. Instructors should use them wisely and with ingenuity. The Army Training Command and most Training Support Agencies found on Army installations are possible sources for firearms related training aids. Additionally, “dry fire” practice is an excellent method of reducing the cost of training.

3.8. Cleaning Procedures. Students must clean and inspect the SA/LW they use for training as part of their evaluation. **(T-1)** CATM will instruct them on how to properly maintain their firearm(s) in accordance with procedures and equipment listed in the operator’s manuals. **(T-1)**

3.8.1. Students completing qualification training are not to use cleaning tanks or unapproved methods to accomplish the preventive maintenance evaluation portion of training. Personnel may only use cleaning solutions and lubricants approved in the applicable TO. CATM must ensure all use of solvents and chemicals meets Air Force and local environmental requirements and is approved according to AFMAN 32-7002, as well as ensuring safe handling procedures and appropriate implementation of ventilation requirements. **(T-0) Note:** Commanders may

authorize use of approved cleaning tanks or ultrasonic cleaners for mass cleaning that is not part of qualification or orientation training.

3.8.2. CATM instructors will not permit personnel to use unauthorized cleaners/solvents, such as automotive cleaners, degreasers, or unauthorized equipment/procedures. **(T-1)**

3.8.3. Brief students about safety precautions contained in the MSDS or SDS or both and inform students of the MSDS/SDS location for the type of solvent or lubricant used. The MSDS/SDS must be available to students upon request. **(T-1)**

3.8.4. Do not allow eating, drinking, tobacco products in the cleaning area. This reduces the chances of ingestion of transferred lead/heavy-metals residue or splattered cleaning solvents during cleaning operations. At a minimum, brief students to wash their hands with soap and cold water before eating, drinking, or using tobacco products. **Note:** Tobacco products include all products that may be configured to deliver nicotine, including but not limited to cigars, cigarettes, electronic cigarettes (e-cigarettes), stem pipes, water pipes, hookahs, vaporizers, smokeless products that are chewed, dipped, sniffed, or “vaped,” and any other nicotine delivery system that the Food and Drug Administration (FDA) defines as a tobacco product using the guidance in AFI 48-104, *Tobacco Free Living*.

3.9. Student Evaluations. Instructors will evaluate students on safety, the course of fire, operator skills, preventive maintenance, and function check of the firearm following the guidance in the applicable TO and the qualification course guidance. If an individual fails any evaluation in the training program, the individual is unqualified with the weapon until able to pass the failed portions of the evaluation(s). Reasons for failure are entered on the DAF Form 522 in ARIS. Students must perform all tasks without assistance to pass evaluations. **(T-1)**

3.10. Student Critique. Provide students the opportunity to accomplish a written critique of all phases of training. The primary instructor informs students of this program at the beginning of training and ensures student critique forms are made available.

3.11. Documentation. Proper documentation is required to ensure accurate ammunition accountability and proof of qualification. The CATM section is the only authorized entity to use ARIS to document qualification-training. **(T-1)** ARIS or manually completed DAF Form 710 and DAF Form 522 from the DAF E-Publishing website signed by a CATM instructor (3P0X1B or DoD civilian equivalent) are the only authorized source documents for qualifications (past or present). When the DAF Form 710 and DAF Form 522 information is entered into ARIS, the CATM lead instructor will verify the accuracy of the information before closing out the class. **(T-3)**

3.11.1. DAF Form 710 is a class roster, record of individual qualification, ammunition expenditure, range utilization, and firearm use.

3.11.1.1. Separate entries for multiple qualification phases are not required. For multiple phases, enter the total number of rounds fired, score as “---,” and status as qualified “Q” or un-qualified “UQ.”

3.11.1.2. If the individual does not meet minimum qualification standards, indicate in the remarks section what phase(s) the shooter failed. CATM uses only the standardized courses from ARIS and does not use any locally developed courses. Additionally, use the “remarks” section to explain any unusual annotations, mistakes or information that should

be captured such as, why students did not fire the prescribed amount of ammunition (e.g., “student #2 fired 3 additional rounds to confirm zero).

3.11.2. DAF Form 522 reflects the qualification status, type of firearm, date of qualification, and if appropriate, the individual's qualification for the award of the Small Arms Expert Marksmanship Ribbon (SAEMR). This form may be used for multiple qualifications.

3.11.2.1. The form may be initiated during the first period of training. Annotate rounds fired, score, status and both the student's and range official's signatures (student and range official signatures only required on manually prepared form) after completion of training.

3.11.2.2. Instructors do not sign the ARIS generated version of the form, as the system enters “ARIS Authenticated” in the signature block.

3.11.2.3. CATM personnel will annotate if the student qualified wearing ICE (deployment training) and or the types of holsters and other equipment the student is qualified to use in the remarks section using the drop-down menu in the equipment section of ARIS or manually adding items not in the drop-down menu. **(T-3)**

3.11.2.4. CATM will annotate any waivers from the published course of fire in the remarks section of the DAF Form 522 in ARIS and cite the authority for the waiver. **(T-2)** For example, if AF/A4SO approved a waiver, CATM will indicate that these tables/phases/orders of the course were not fired and provide a reference for the waiver. **(T-2)** For example, “Individual did not fire Phase V: CWDE Firing Techniques, of the Rifle/Carbine AFQC based on AF/A4SO waiver, 25 Sep 21.”

3.11.2.5. For qualification training, CATM will enter the total number of rounds fired by the student for the entire course and will only use one of the following statuses when completing firing records in ARIS: “Q” - qualified, “E” - expert, “UQ” - unqualified, “N/A” - not applicable (student did not complete training). **(T-1)** Separate entries for multiple qualification phases are not required. For multiple phases, enter the total number of rounds fired, score as N/A, and status as "Q" or "UQ." If the individual is unqualified, indicate in the “remarks” section what phases the shooter failed. **Note:** CATM uses only the standardized courses from ARIS and does not use any locally developed courses.

3.11.3. Organizations use ARIS for validation of qualification, previous training, or deployment training. **Note:** If a hard copy is desired, the individual's unit may print the form and maintain it to provide a record of training, use as a scheduling aid or provide a crosscheck of qualification training. CATM ensures that units/agencies that require printed copies of the DAF Form 522 are provided access to ARIS.

3.11.4. If ARIS is offline, all entries are made in ink or typed electronically on the DAF Form 710 and DAF Form 522. CATM will enter the data from manually completed documents into ARIS when ARIS becomes available, not to exceed one duty day from when the system is back online. **(T-3)**

3.11.5. If units need additional qualification courses added (e.g., sister service), they will request the AFSFC add them to ARIS. Locally developed or modified courses for qualification training are not authorized. **(T-1)**

3.11.6. To ensure students receive the appropriate type of training (initial, recurring, or remedial), student training records are obtained from ARIS or the student's hard copy DAF

Form 522. If the student's status cannot be determined, they qualify under initial training guidelines.

Chapter 4

INSTRUCTOR CERTIFICATION

4.1. Overview. This chapter explains requirements for instructors. Instructors undergo a series of initial and annual evaluations as well as continued proficiency training to ensure professional development.

4.2. Requirements. Instructors performing assigned duties either at home station or deployed must meet criteria for training and qualification identified in the DAF Enlisted Classification Directory (DAFECD). **(T-1)** The CATM Section Chief ensures all assigned instructors are trained, evaluated, participate in continuation training, and maintain skill proficiency.

4.2.1. For upgrade training, unit-training managers enter newly assigned 3P031B personnel into the appropriate upgrade training status code following the guidance in DAFMAN 36-2689, *Training Program*. AFSC 3P031B personnel should be utilized in a CATM duty position, to ensure effective and timely OJT and advancement to the 5-skill level.

4.2.2. Civilian CATM Instructors. To perform CATM duties civilian instructors must be graduates of the CATM Apprentice Course (or previous/future versions of the course) and in a CATM duty position. **(T-1)** If not a prior 3P0X1B, they must attend the CATM Apprentice Course once hired, regardless of previous experience. **(T-1)** HQ Air Force Personnel Center provides core position descriptions including medical requirements to accommodate the unique health risks associated with duties.

4.3. Instructor Evaluations. CATM personnel who perform lead instructor duties must successfully complete a lead instructor evaluation on each weapon for which they provide training before being task certified to instruct without supervision. **(T-2)**

4.3.1. Training Evaluations. The individual's trainer or Instructor Supervisor may conduct training evaluations. Other instructors may perform informal evaluations on any instructor to provide additional feedback on their performance. The evaluator critiques each instructor evaluated. The evaluator must provide feedback within two-workdays following the evaluation. **(T-3)** The instructor, supervisor and evaluator should be present during the feedback session. If instructor performance was unsatisfactory, include the Section Chief in the feedback session.

4.3.2. Lead Instructor Evaluations. The CATM Trainer will perform a lead evaluation once the individual has successfully completed two training evaluations. **(T-3)** Satisfactory completion of this evaluation authorizes an individual to perform lead instructor duties without supervision. The evaluator must be present for the entire program of instruction, including live-fire and preventive maintenance evaluation. **(T-1) Exception:** The immediate supervisor or someone higher in the chain of command conducts evaluations on the CATM Section Chief when they perform lead instructor duties. Instructors subordinate to the Section Chief do not normally conduct official evaluations on the Section Chief; however, task certified lead instructors subordinate to the Section Chief may conduct official evaluations on the Section Chief with AF/A4SO approval when necessary to meet mission needs. Higher headquarters CATM officials may also accomplish lead instructor and "no-notice" evaluations.

4.3.2.1. The evaluation by the CATM Trainer must cover the complete qualification course training program to include performance of tower operator duties and evaluating preventive maintenance. **(T-2)**

4.3.2.2. All tasks performed for lead instructor evaluations are rated on the evaluation checklist for certification. The instructor being evaluated must achieve at least a satisfactory rating on all areas to receive task certification. **(T-2)**

4.3.2.3. Once lead instructor task certified on one weapon, instructors only need to satisfactorily complete a lead instructor evaluation for additional weapons on which they conduct training. The trainer or instructor supervisor may conduct training evaluations for additional SA/LW; however, they are not required. Newly assigned instructors who were previously task certified on a weapon and completed a lead instructor evaluation do not require another lead instructor evaluation on the same weapon but must satisfactorily complete a lead instructor evaluation for weapons they are not certified to instruct. **(T-2)**

4.3.2.4. Once lead instructor certified, instructors that perform instruction duties will receive an annual evaluation each calendar year to ensure continued quality of instruction and training. **(T-2)** This evaluation occurs randomly within 60-days of the anniversary date of the previous annual evaluation or lead instructor evaluation if there was no annual evaluation. The CATM Section Chief or Trainer does not notify the instructor being evaluated until the day of the evaluation. This evaluation follows the same requirements as lead instructor evaluation. **Exception:** Common Remotely Operated Weapon Station (CROWS) II instructors must complete an annual instructor evaluation to maintain lead instructor certification. **(T-1)** For CATM instructors, the CROWS II evaluation is in addition to the annual no-notice evaluation required on a different weapon and course.

4.3.2.5. At large CATM organizations with multiple teams/crews, the CATM organizational commander may allow the highest-ranking CATM individual of the team/crew to conduct lead evaluations. **Note:** The 343d Training Squadron (TRS) commander will designate, in writing, CATM Section Chief and CATM Trainers, as defined in DAFI 31-131. The designated CATM Section Chief will provide CATM functions for all 343d TRS assigned instructors to facilitate individuals for their assigned courses and/or blocks of instruction.

4.3.3. Weapons Maintenance Evaluations. These evaluations should be conducted during actual inspections. Use the “Go” or “No-Go” scale to rate each item. CATM personnel must satisfactorily complete a weapons maintenance evaluation on each weapon before being task certified to perform inspections and or maintenance without supervision. **(T-2)** The Trainer, or individual’s supervisor or any CATM individual who is task certified to perform maintenance on the weapon(s) may conduct the evaluation. The CATM Section Chief will use the same procedures as those used for instructor evaluations in [Paragraph 4.3.2](#) for accomplishing annual weapons maintenance evaluations on assigned instructors.

4.3.4. Fielding SA/LW and Accessories. The CATM Section Chief is responsible to prepare the shop or section to field new SA/LW systems. The Section Chief is considered the installation’s SME on SA/LW, CATM training, and may need to self-certify when a new system is fielded. When a new SA/LW system, accessory, or enabler is fielded it is incumbent on the Section Chief to prepare the shop and or section. When a new system is fielded, use the following guidance:

4.3.4.1. The Section Chief familiarizes himself or herself with the approved lesson plan, applicable course of fire, and conducts live-fire qualification on the appropriate qualification course.

4.3.4.2. Once qualified, perform classroom instruction for his or her shop/section and conduct live-fire qualification. **Note:** The immediate supervisor or someone higher in the chain of command conducts evaluations on the CATM Section Chief when they perform lead instructor duties (see [Paragraph 4.3.2.](#)).

4.3.4.3. Conduct lead instructor evaluations on instructors, as required. If needed, use the same procedures outlined in [Paragraph 4.3.4](#) through [Paragraph 4.3.4.3](#) for maintenance evaluations, new accessories, and when instructor qualifications lapse.

4.3.5. Remedial Instructor Training. The CATM Trainer will provide additional training for an instructor rated unsatisfactory for any area. Provide a follow-up evaluation within 30-days (Air Reserve Component personnel have two UTAs to meet this requirement). Instructors must satisfactorily accomplish the follow-up evaluation before they are permitted to perform lead instructor or tower operator duties. **(T-2)** If an instructor receives an unsatisfactory rating on both formal evaluations and the follow-up evaluation, the CATM Section Chief will make a recommendation to the commander whether the individual should receive further remedial raining or have their instructor status (B-shred) revoked. **(T-2)** These individuals are not allowed to instruct classes or perform tower operator duties until the commander decides. Ensure the supervisor completes thorough documentation of remedial training in the individual's Air Force Training Record.

4.4. Documentation. Document all instructor and weapons maintenance evaluation results in an approved automated training record system or paper-based, when approved. CATM sections may use ARIS to record and track when evaluations are accomplished. The CATM Section Chief must file completed evaluation in the CATM section. **(T-3)** The completed evaluation forms should be electronic. Maintain completed evaluation checklists for one year from completion date, then dispose of them or return them to the individual upon reassignment or separation. Evaluators will use the fillable instructor and weapons maintenance evaluation forms prepared by AF/A4S and posted on the CATM SharePoint® site. **(T-2)** Modifications to the checklists are not allowed without approval from AF/A4SO. Maintain evaluations for senior noncommissioned officers who require evaluations but do not require an DAF Form 623, *Individual Training Record Folder*.

Chapter 5

SA/LW MAINTENANCE, INSPECTION, REQUIREMENTS, AND CONFIGURATION CONTROL

5.1. Overview. This chapter provides guidance on the installation's inspection and maintenance program as well as the basic requirements process or path to acquiring new, modified, or additional SA/LW, ground-munitions, accessories, enablers, or associated equipment. Base CATM personnel are responsible for the inspection and maintenance of SA/LW assigned to the installation and those required by an approved support agreement. Conduct inspections and repairs as outlined in applicable Air Force TO, Time Compliance Technical Orders and Technical Manuals. CATM will enter all inspections and maintenance on the AFTO Form 105, *Inspection Maintenance Firing Data for Ground Weapons*, in ARIS for each SA/LW inspected or repaired. **(T-2)**

5.1.1. Only tasked-certified CATM personnel are authorized to repair SA/LW. **(T-1)** Personnel assigned to the Air Force Small Arms Depot may perform maintenance (including depot-level) and test-fire SA/LW with proper training and certification. Units/personnel are not authorized to contract or hire civilian gunsmiths or other non-CATM personnel to repair, inspect, or modify SA/LW. **(T-1)**

5.1.2. When assigned to other U.S. military installations, units receive support from the servicing DAF installation's CATM section. If the servicing installation's CATM support is unavailable, AF/A4S may approve use of other Service qualified (CATM equivalent) personnel to inspect and repair SA/LW. When other agencies perform inspections, maintenance, or modifications, the owning unit of the SA/LW will provide a copy of the inspection report or repair documents to the host CATM section. **(T-2)** The host CATM section will enter the action performed on each SA/LW into ARIS. **(T-2)** **Note:** Air Force Life Cycle Management Center (AFLCMC)/EBU, may approve or establish repairs through contracts when requested and approved by AF/A4S.

5.1.3. The base CATM section is the focal point for all authorized SA/LW parts procurement and replacement. Using organization can transfer funds to the CATM account so CATM can control ordering of replacement parts for service weapons. CATM is the only organization authorized to procure SA/LW parts. **(T-1)**

5.1.4. CATM will maintain a permanent maintenance log of all maintenance performed and parts replaced on each repair (record all maintenance performed, even if parts are not used). **(T-2)** The weapons maintenance log provides a historical record of parts used and maintenance performed. The maintenance log includes the model, type, serial number, owning organization, maintenance accomplished, stock number/nomenclature of parts replaced, and total man-hours used to complete the repair for each weapon repaired. This log is maintained in the SA/LW maintenance shop to provide a historical record of parts used, maintenance performed, etc. This log is separate and should support data entered in ARIS. At a minimum, CATM will conduct an inventory of all SA/LW parts annually (every 12-months). **(T-3)** A non-CATM, disinterested NCO will observe and validate this inventory. **(T-3)** CATM personnel must ensure all parts are properly secured when not in use. **(T-2)**

5.2. Levels of SA/LW Maintenance.

5.2.1. Depot Maintenance. Maintenance beyond base level CATM capabilities (may include complete rebuilding of parts, assemblies, and end items). This could include parts, parts manufacture, modifications, testing, and SA/LW reclamation. Usually, depot maintenance is done in support of the Air Force supply system. The Air Force Directorate of Logistics (AF/A4L), Logistics Readiness Division (AF/A4LR), has depot maintenance policy responsibility with Air Force Materiel Command (AFMC) and AFLCMC/EBU as supporting agencies.

5.2.2. Field Maintenance (Organizational, Direct Support, and General Support). TO references to "Organizational Maintenance," refer to Army maintenance levels. In the Air Force, CATM personnel perform this level of maintenance and inspections in direct support of using organizations. This includes all inspections and maintenance of SA/LW assigned to the installation and governed by support agreements. This maintenance is limited to the repair of end items or unserviceable assemblies. These inspections and maintenance procedures are incredibly detailed/technical processes, requiring special training and equipment to be properly performed. Installation CATM sections are authorized to perform the following maintenance:

5.2.2.1. Service Weapons (non-match grade). Any handheld, shoulder-fired or crew-served SA/LW generally issued in the field. Crew-served is any weapon designed to fire a projectile and normally require more than one person to properly employ. In the Air Force, crew-served includes the M240B, M2A1, M3A1, and MK19. CATM personnel must perform inspections, to include gauging, in accordance with the weapon TO and this instruction. CATM sections are authorized to stock spare parts for maintenance. Use historical data, maintenance records, and anticipated mission needs to assist in determining stock levels of replacement parts. Stock at least one of every part for each type of weapon assigned to the installation. Use the total number of "in use" and packaged SA/LW, where maintenance support is provided, to establish a spare parts inventory.

5.2.2.2. Match Grade Weapons. Any handheld or shoulder-fired weapon designed, modified, or manufactured for use in competitive shooting. CATM personnel must perform inspections, to include gauging, in accordance with the weapon TO and this instruction. **(T-2)** For inspection and repair/replacement of specialized or fitted parts outside the scope of normal CATM sections, owning units are to refer these items to depot or the Air Force Small Arms Depot for support at the direction of the item manager. **Note:** Owning units are responsible for providing funding towards shipping, packaging and or procurement on required gauges/tools/parts through supply or depot channels for inspection/repair/replacement. Those Air Force shooting team personnel with SA/LW needing specialized inspection/repair coordinate with Air Force Services Center (AFSVC)/VMS, ATTN: AF Shooting, 2261 Hughes Ave, Suite 156, JBSA-Lackland, TX 78236-9852, Defense Switched Network 969-7352 or commercial (210) 395-7352, for shipment of SA/LW. The mailing address of the Air Force Small Arms Depot is 1520 Service Road, Suite 1, Lackland AFB TX 78236-5722. All other requests for match grade specialized inspection/repair go through AFLCMC/EBU.

5.2.2.3. Ceremonial Weapons. Military service and non-service model SA/LW used for drill team and honor guard purposes. CATM personnel must perform inspections, to include gauging, in accordance with the weapon TO and this instruction on all ceremonial

SA/LW capable of firing a live or blank ammunition cartridge. **(T-1)** Additional support is limited to those inspections to ensure units are conducting proper operator maintenance, and replacement of broken or worn parts preventing the proper operation of the weapon or posing a safety hazard. Replacement parts for some of these non-service model SA/LW (e.g., M1 Garand, 1903 Springfield) are not always available through routine military supply channels. The owner/user is responsible for coordinating maintenance outside the scope of local CATM sections with AFLCMC/EBU. CATM is not required to inspect non-firing (inert) ceremonial weapons, and the condition and care is the responsibility of the owning organization.

5.2.3. Operator Maintenance (Individual). This is maintenance performed by individuals and/or the assigned unit. This maintenance is limited to authorized disassembly, assembly, cleaning, lubricating, preserving, tightening some screws, adjusting sights, replacing slings, replacing spare barrel bags, etc., and performing preventive maintenance checks according to the weapon TO. Using organizations will not order or bench stock SA/LW parts, as this is outside the scope of operator maintenance.

5.2.4. Weapons Cleaning. Each unit possessing SA/LW is responsible for their own preventive maintenance cleaning and lubrication program (to include magazines, spare barrel kits, tripods, etc.) following the guidance in the weapon TO for both in-use and extended storage. CATM advises unit weapons custodians on cleaning frequency if local conditions warrant more frequent cleaning. As a minimum, owning units will perform preventive maintenance on all their assigned in-use (whether active or inactive) SA/LW to include cleaning, lubrication, and operator inspection, immediately after firing any type of ammunition and every 90-days, whether the weapon is fired or not. **(T-2)** Owning units are responsible for ensuring proper cleaning equipment/materials are available for each assigned weapon to include those in extended storage per each Operator's Manual. CATM sections will develop a weapon custodian handbook listing the needed cleaning items and general information needed in support of SA/LW. **(T-3)** This handbook also outlines weapon custodian responsibilities and procedures concerning CATM related requirements.

5.2.4.1. Units are responsible for developing a standardized method of documenting their required cleaning and preventive maintenance. Units may use an electronic general-purpose form for documenting this cleaning. The AFTO Form 105 is not used to document cleaning. CATM training weapons are exempt from this requirement.

5.2.4.2. CATM will review unit preventive maintenance (cleaning/operator inspection) documentation during SA/LW inspections and annotate findings on the weapon inspection report. **(T-2)**

5.2.5. Limited parts cannibalization may be accomplished by CATM personnel for the sole purpose of reducing the total number of unserviceable weapons assigned to a unit. This procedure is limited to SA/LW assigned within the same unit. An example of proper use of this procedure would be four SA/LW with four different broken parts such as a missing sling, cracked hand guard, pistol grip and stock. Placing all broken parts on one weapon would result in only one weapon being tagged for repairs versus four. When the weapon is repaired, all new parts are installed and annotated appropriately. **Exception:** Do not exchange parts expressly forbidden in the TO.

5.3. Procedures for Maintenance of Unserviceable Weapons. Owning agencies will take weapons needing repair to the base CATM section. **(T-3)** CATM personnel inspect the weapon and determine if they can repair it or if depot repair is needed. If CATM is to retain the weapon for repair, place a DD Form 1577-2, *Unserviceable (Repairable) Tag-Materiel*, on the weapon, until all repairs are made, and issue a receipt to the owning agency. Notify the owning agency when the weapon is repaired. If CATM does not retain the weapon for repair at the time of inspection, ensure coordination with the owning unit until repairs are made. CATM will place a completed DD Form 1577-2 on weapons needing depot maintenance and return them to the owning organization for turn-in to the logistics readiness squadron or materiel management activity. **(T-2)** Record the maintenance action on the weapons AFTO Form 105 in ARIS following the guidance in TO 11W-1-10, *Historical Data Recording of Inspection, Maintenance, and Firing Data for Ground Weapons*. **(T-2)** Process unserviceable parts/scrap material for turn-in to DLA disposition services. If activity is unable to receive unserviceable parts/scrap, CATM will coordinate demilitarization or disposal of unserviceable parts according to DoDM 4160.21 V1. **(T-0)** Where conflicts occur between TOs for the same weapon, follow the more stringent/detailed guidance.

5.3.1. Weapons requiring depot maintenance are shipped to depot as complete end items in the “As Issued” configuration, to include all accessories (i.e., magazines, slings, original optics, original sights, slings, spare barrel, spare barrel cases and printed copies of AFTO Forms 105).

5.3.2. Do not ship SA/LW cannibalized, stripped of parts, or those containing unserviceable parts, back to depot when they are repairable/replaceable by CATM, unless specifically authorized by AFLCMC/EBU. If MAJCOM, Functionals, or units have received approval as outlined in this instruction to add parts or accessories to Air Force SA/LW, CATM and/or the owning organization must remove them and return the weapons to “As Issued” configuration before returning them to depot or turning them into the logistics readiness squadron or materiel management activity, as excess items. **(T-1)**

5.4. Storage Definitions.

5.4.1. In-Use. Any SA/LW not stored and packaged according to applicable Special Packaging Instructions (SPI) as outlined on <https://spires.wpafb.af.mil/> are considered in-use and fall under one of two sub-categories. Regardless of the sub-category, they are still classified as in-use weapons.

5.4.1.1. Active In-Use. An active weapon is a weapon issued for duty within a period of 90-days. The weapon may or may not be assigned to an individual.

5.4.1.2. Inactive In-Use. An inactive weapon is a weapon that has been stored for a period of 90-days without use. The weapon may or may not have been assigned to an individual.

5.4.2. Extended Storage/Preferred Packaging. Only SA/LW stored and packaged according to applicable SPI fall into this category. All others are considered In-Use. Weapons removed from special packaging become in-use until they are properly returned to storage following the applicable SPI.

5.5. Inspection of Weapons. Only task certified CATM personnel will inspect military SA/LW assigned to all organizations. **(T-1)** Use the guidance in the following Paragraphs along with the TOs to conduct inspections. CATM performs weapons inspections to determine weapon serviceability, safety, discover conditions causing (or that could cause) failures, and to determine

if required preventive maintenance checks are being performed. Verify the serial numbers of all inspected SA/LW against the unit's Custodian Authorization/Custody Receipt Listing during all types of inspections and report any discrepancies to the logistics readiness squadron or materiel management activity. **(T-2)** Occasionally, new SA/LW are received, and accounts are established without custodians notifying the servicing CATM section. This same verification process is applied to units who are supported in accordance with an approved support agreement and that do not have their own assigned CATM personnel. The CATM section is responsible for obtaining sufficient levels of tools and gauges needed to accomplish inspections. Additionally, they must ensure gauges are processed through the servicing PMEL at intervals established in TO 33K-1-100-2, *TMDE Calibration Notes, Calibration Interval, Technical Order and Work Unit Code Reference Guide*. **(T-2)** Where conflicts occur between TOs for the same weapon, follow the more stringent/detailed guidance. See **Chapter 2** for inspection reports.

5.5.1. Organizations possessing SA/LW are responsible for the following:

5.5.1.1. Coordinating inspections with all applicable agencies (e.g., CATM, Traffic Management Office, Packing and Crating, Supply, and Resource Protection).

5.5.1.2. Preparing the SA/LW for inspection and initiating DD Forms 1574, *Serviceable Tag - Materiel*, for extended storage. Do not place DD Form 1574 on in-use SA/LW. CATM accomplishes initial creation of the AFTO Form 105 in ARIS for weapons not previously entered.

5.5.1.3. Ensuring all SA/LW are cleaned and ready for inspection, to include the mechanical zeroing of extended storage SA/LW.

5.5.2. Pre-Issue Inspection. The logistics readiness squadron or materiel management activity or the organization receiving SA/LW from depot or another installation must notify the CATM section within 10-days (ANG/AFRC within 30-days) to schedule a weapons inspection. **(T-2)** CATM personnel must inspect SA/LW within 30-days (ANG/AFRC within 60-days) of notification. **(T-2)** CATM must inspect all SA/LW prior to units placing them into operational service or extended storage. **(T-2)** This inspection consists of disassembly, gauging, proper assembly, and function check. If required, CATM personnel assist owning organizations in completing the SF 368, *Product Quality Deficiency Report*, as outlined in TO 00-35D-54. CATM personnel enter "Pre-issue Inspection/Gauged" on the weapon's AFTO Form 105 in ARIS.

5.5.3. Inspection of In-Use SA/LW. In-use SA/LW are those not in extended storage packaging in accordance with SPI. As a minimum, CATM personnel will perform this inspection on active in-use SA/LW semi-annually (every six months) and on inactive in-use SA/LW annually (every 12 months). **(T-2)** CATM will inspect active in-use SA/LW not used for operational purposes and used exclusively for training (except for CATM training SA/LW) annually (every 12 months). **(T-2)** CATM will complete these semi-annual and annual inspections within 60-days before or after the date of the previous inspection. **(T-2)** All in-use SA/LW inspected will have a complete serviceability inspection to include cleanliness, lubrication, authorized parts/accessories, and complete function check. **(T-2)** At least 25-percent of the SA/LW will receive full gauging in accordance with maintenance TOs. **(T-2)** AF/A4SO may increase this percentage. However, under no circumstances may this percentage be reduced to less than 25-percent. CATM will develop a local method of tracking SA/LW that have been gauged by serial number to ensure the same weapons are not gauged on subsequent

inspections, until all weapons have been gauged. **Exception:** This is not required if CATM gauges 100-percent of in-use SA/LW during all in-use inspections. This inspection may be accomplished at the time the SA/LW are used for firearms training or staggered throughout the year to meet requirements. Weapons found to have been painted or coated with a substance other than that authorized in the applicable TO are removed from service immediately. **(T-2)** Pre-deployment inspections and or post-deployment inspections satisfy the requirements of this Paragraph if they are accomplished within the required inspection period. **Note:** As a minimum, CATM will inspect the GAU-5A (Aircrew Self-Defense Weapons [ASDW]) annually and whenever the survival kit is unpacked. **(T-1)** CATM will work closely with authorized aircrew units and aircraft maintenance to schedule and conduct GAU-5A inspections.

5.5.3.1. At the time of inspection, CATM will ensure all quadrant sights, optics, fire controls, spare barrels, tripods, traverse and elevation mechanisms, and other subassemblies of crew-served weapons are inspected for serviceability. **(T-2)** CATM will add a statement to the inspection report describing the quantity and type of items inspected, the condition in which they were found, and whether corrective actions are needed or were accomplished. **(T-2)** All items with a serial number and open discrepancies should be reflected in the report to assist in accountability and tracking of corrective actions. CATM must inspect weapons not available for the inspection (temporary duty [TDY], issued, etc.) within 15 duty days upon return from TDY or issued status. **(T-2)**

5.5.3.2. CATM personnel will enter “Semi-Annual Inspection” or “Annual Inspection” (for inactive in-use SA/LW) on the weapon’s AFTO Form 105 in ARIS and “Semi-Annual Inspection/Gauged” or “Annual Inspection/Gauged” (for inactive in-use SA/LW) on those receiving full gauging. **(T-2)**

5.5.4. Inspection of CATM Training Weapons. CATM must complete a full serviceability inspection, including gauging, on all SA/LW assigned to the section in accordance with maintenance TOs semi-annually (ARC units may inspect CATM rifles and pistols annually). **(T-2)** This inspection may be accomplished at the time the SA/LW are used for firearms training or staggered throughout the year to meet requirements. At the time of inspection, ensure all quadrant sights, optics, fire controls, spare barrels, tripods, traverse and elevation mechanisms, and other subassemblies of crew-served SA/LW are inspected for serviceability. CATM personnel enter “Semi-Annual Inspection/Gauged” on the weapon’s AFTO Form 105 in ARIS. **(T-1)**

5.5.5. Inspection of Weapons in Extended Storage/Preferred Packaging. Units will not remove weapons from extended storage for use during exercises unless necessary and authorized by the installation commander. **(T-2)** Weapons stored in accordance with the SPI do not require any periodic inspection by CATM.

5.5.5.1. CATM will conduct a complete serviceability inspection, including gauging, on all weapons removed from extended storage packaging prior to deployment or placing into operational status. **(T-2)** CATM inspects weapons removed from extended storage/preferred packaging for deployment as outlined in [Paragraph 5.5.6](#). CATM inspects weapons removed from extended storage packaging for operational use as directed in [Paragraph 5.5.3](#), although they will gauge 100 percent of these weapons. Document the AFTO Form 105 in ARIS for these weapons as “Annual Inspection/Gauged.” Extended

storage inspections, including gauging, conducted within 120-days of deployment, or placing into operational status meet the inspection requirements in this Paragraph.

5.5.5.2. When weapons are removed from extended storage packaging and they will be placed back into extended storage/preferred packaging without being deployed or placed into operational status, CATM uses the following guidance for inspections. An example of this is opening a container of weapons to remove one weapon for deployment, but returning the remaining weapons extended storage packaging. **Note:** Weapons sealed in barrier bags in accordance with the SPI, where the bag has not been opened and there are no tears or perforations in the bag, do not require inspection. Inspection of these SA/LW takes a joint effort from the organization or unit possessing the SA/LW, Traffic Management Branch (Preservation, Packing and Packaging), logistics readiness squadron or materiel management activity and CATM. CATM personnel will perform a serviceability inspection immediately before placing/returning SA/LW to extended storage, following the guidance in the SPI. The owning organization must ensure weapons are properly packaged/sealed within 30-days of this inspection or re-inspection is required. **(T-2)** Pre-embarkation inspections and/or post-deployment inspections including gauging satisfy the requirements of this Paragraph if conducted within the specified times.

5.5.5.2.1. CATM will perform a serviceability inspection of 100-percent of weapons removed from extended storage/preferred packaging before units return the weapons to extended storage packaging. **(T-2)** Owing units will ensure all weapons are cleaned and lubricated prior to the CATM inspection and before they return the weapons to extended storage packaging. **(T-2)** The 100-percent CATM inspection includes a visual inspection for corrosion, damaged or worn or missing parts, unauthorized accessories and modifications, function check and proper cleaning and lubrication. CATM should pay particular attention to proper lubrication of the weapons to prevent corrosion during extended storage. All personnel, including CATM that handle weapons must wear lint-free, clean gloves to prevent contamination of the weapons prior to being repacked. **(T-2)**

5.5.5.2.2. CATM will gauge a minimum of 20-percent of each model weapon during these inspections and ensure that weapons gauged during previous inspections are not gauged again until the entire quantity of weapons of the same model have been gauged. **(T-1)** If CATM finds any unsatisfactory conditions (corrosion, failure to pass gauging checks, missing parts, etc.), they will gauge an additional five percent of the same model weapon, stored in the same manner. **(T-1)** If CATM finds unsatisfactory conditions on these weapons, they will gauge 50 percent of the same type of weapon stored in the same manner and if any unsatisfactory conditions are found on these weapons, they will gauge 100 percent of the same model weapons stored in the same facility. **(T-1)** CATM personnel will enter “Extended Storage Inspection/Gauged” or “Extended Storage Inspection/Not Gauged” as applicable on the weapon’s AFTO Form 105 in ARIS. **(T-2)**

5.5.5.3. When placing SA/LW in extended storage/preferred packaging for the first time, follow the guidance in [Paragraph 5.5.5.2.1](#) with the addition of gauging 100-percent of weapons being placed in extended storage. **(T-1)**

5.5.6. Pre-embarkation Inspections. Due to the time required to conduct these in-depth and detailed inspections, units alerted for deployment should contact CATM as soon as possible to schedule/conduct this inspection. CATM completes a full serviceability inspection, including gauging. If the weapon has received a serviceability inspection including gauging for other reasons within the required time, it satisfies the requirement for the pre-embarkation inspection and CATM annotates this on the AFTO Form 105 in ARIS. CATM will complete this inspection within 120-days of the weapon departing the installation for deployment or expeditionary training if the weapon will not return to home station before deployment. **(T-1)** This requirement should be included in the installation deployment plan. The Security Forces/CATM organizational commander may work with the installation deployment officer to establish a centralized location for this inspection. CATM must ensure all SA/LW, and associated equipment being deployed meet the applicable TO requirements. **(T-1)** CATM personnel will enter “Pre-embarkation Inspection” on the weapon’s AFTO Forms 105 in ARIS. **(T-2)** Ensure the unit sends the ARIS AFTO Form 105 with the SA/LW. Once weapons are inspected, remove from use until unpacked at the destination.

5.5.7. Post Deployment Inspections. Unit weapons account custodians will notify CATM and the logistics readiness squadron or materiel management activity within five duty days of weapons returning from deployed locations. **(T-2)** CATM personnel will perform a complete serviceability inspection on SA/LW returning from deployments, regardless of length. **(T-1)** Perform a complete serviceability inspection including gauging on SA/LW in accordance with maintenance TOs. **(T-1)** Weapons found to have been painted or coated with a substance other than that authorized in the applicable TO will be removed from service immediately. **(T-1)** Accomplish this inspection before placing the weapon in operational use not to exceed 60-days from the return date. **(T-1)** CATM personnel will enter “Post Deployment Inspection” on the ARIS weapon’s AFTO Form 105 and enter any maintenance accomplished while deployed if not previously entered. **(T-1)**

5.5.8. Turn-In Inspection. CATM will perform a complete serviceability inspection to include full gauging on all SA/LW and accessories being turned into the logistics readiness squadron or materiel management activity. **(T-1)** Only approved stock-listed items for the weapon are authorized for turn in. Non-standard items such as after-market slings, sights, grips, camouflage paint, or other items are removed and replaced (if applicable) with stock-listed items. SA/LW must include all “As Issued” configuration items/accessories when they are turned in. **(T-1)** CATM will ensure repair of the weapon (within their authorization) if parts are unserviceable. **(T-1)** CATM personnel will enter “Turn-in Inspection/Gauged” on the weapon’s AFTO Form 105 in ARIS. **(T-2)** CATM will notify the unit via memorandum (NSN, noun, & pricing) of missing accessories or parts required to return “As Issued” for complete end item turn-in. **(T-2)** The owning unit is responsible to fund replacement parts by transfer of funds to CATM prior to turn-in. **(T-2)** The owning organization ensures a DD Form 1574 is attached to the weapon and includes the AFTO Form 105 with the weapon.

5.5.9. Negligent Discharge of Government-Issued SA/LW Inspection. In the event of an alleged negligent discharge with a government-issued SA/LW, CATM will accomplish the following: **(T-2)**

5.5.9.1. A task certified CATM instructor will complete a full serviceability inspection, to include gauging, and perform a function check of the weapon involved per the applicable TO. **(T-2)**

5.5.9.2. If the discharge is determined to be deliberate by the investigating authority, CATM is not required to conduct any further inspection of the weapon. If the discharge is alleged to be caused by negligence or the person who discharged the weapon claims it was caused by a weapon malfunction, CATM will complete a test fire with the weapon to determine operational function, if safe to do so. **(T-2)** CATM should conduct the test fire on the installation's range.

5.5.9.2.1. If the TO includes test fire procedures, CATM will follow the procedures outlined in the TO. **(T-2)** If the TO does not include test fire procedures, CATM will test fire each mode of fire (safe, semi-automatic and automatic/burst, as applicable), with a minimum of five rounds in each mode. **(T-2)** The inspector will use the loading/clearing procedures in DAFMAN 31-131 V3. **(T-2)** CATM personnel should use the same ammunition (caliber, type, and lot number) used when the incident occurred, if possible.

5.5.9.2.2. CATM will provide the results of the inspection and or test fire to the commander of the person who discharged the firearm, the investigating authority, and the Security Forces/CATM organizational commander. **(T-2)**

5.5.9.3. If CATM identifies any deficiencies with the weapon they will submit a Product Quality Deficiency Report (PQDR) following the guidance in AFI21-2115, *Product Quality Deficiency Report*. For broken or missing parts that are repairable at the Field Maintenance level, CATM will repair the weapon when the investigating authority releases it. **(T-1) Exception:** If a PQDR is initiated or in progress, CATM will not repair the weapon until the PQDR is complete.

5.5.9.4. CATM will enter "Negligent Discharge Inspection" on the weapon AFTO Form 105 in ARIS, along with any maintenance accomplished and test fires conducted. **(T-1)**

5.6. Packaging Weapons. Packaging for shipment or storage takes a joint effort from the organization or unit possessing the SA/LW, Traffic Management Branch (Preservation, Packing and Packaging), logistics readiness squadron or materiel management activity, and CATM. Before packaging SA/LW, CATM personnel must inspect the SA/LW and complete the DD 1574 or DD 1577-2 (if required). **(T-1)** A completed ARIS generated AFTO Form 105 must accompany the weapon in shipment through supply channels if the weapon is being returned to depot. **(T-2)** Weapons will be prepared and packed for shipment or storage according to applicable SPI or TO. **(T-1)** The owning organization is responsible for funding, packaging and/or sealing SA/LW scheduled for shipment or storage. For example, M16 rifles will be packed for storage or shipment according to SPI 00-856-6885 or M9 pistols use SPI 00-317-2468.

5.7. SA/LW and Associated Equipment Requirements, Procurement, Modification, and Improvement Process. A verified and validated capability requirement or gap is essential when establishing a requirement, acquiring a new weapon system, munition, accessory, or identifying a needed modification or improvement. Needs or capability gaps should be identified by the MAJCOM Functional Manager and pushed forward to the appropriate Air Staff functional agency. The Air Staff Functional evaluates the shortfall following the guidance in AFI 10-601, *Operational Capability Requirements Documentation and Validation*. If the Air Staff Functional believes a new weapon, munitions, accessory, modification, or improvement to an existing system is required, initiate the requirements process using the DAF SA/LW – EG, championed through the DAF SA/LW – Capabilities Working Group (DAF SA/LW – CWG) point of contact. **(T-1)**

5.7.1. Accessories and Associated Equipment. Users or organizations are not authorized to obtain or use any accessory or associated equipment that are not approved in the applicable TO or on the Authorized SA/LW Accessories listing. **(T-1)** Most items on the listing are obtained through the Air Force supply system. AF/A4S and AFLCMC/EBU do not normally allow the commercial purchase of accessories or associated equipment for SA/LW without a validated requirement and or gap. Units submit a capability gap through the DAF SA/LW – EG to initiate the process to evaluate the gap. **(T-1)** Examples of accessories include scopes, aiming devices, adapters, mounts, sights, etc. Modified SA/LW parts also fall into this category. Units/individuals are not authorized to procure or install commercial parts, either standard or modified, for SA/LW or to otherwise modify SA/LW in any manner. **(T-1)** Examples include modified controls (e.g., triggers, magazine catch buttons, safeties, selector levers, trigger kits), stocks, handguards, springs, magazines, or similar items. If a unit has a capability requirement for a modified part, use the procedures in **Paragraph 5.7** to identify the capability gap. The items identified on the Authorized SA/LW Accessories list and items identified in applicable Air Force TO are the only items authorized for use on SA/LW. **(T-1)**

5.7.2. Units requesting non-standard/commercially purchased items (commercial parts, services, and accessories [grips, slings, lights, etc.] and ammunition), not specifically identified for use in applicable TOs or the Authorized SA/LW Accessories listing will follow the guidance in **Paragraph 5.7 (T-1) Note:** This does not apply to tools and fixtures used by CATM for repairs. If approved, certified CATM personnel must install and inspect all non-standard commercially purchased items regardless of the owning organization. **(T-1)** Air Force units/agencies procure SA/LW, accessories and ground munitions through approved Air Force logistics channels/processes only. Organizations are not authorized to use government purchase cards to purchase firearms, accessories, or ammunition per DAFI 64-117, *Government Purchase Card Program*.

5.7.3. Among other policies, all weapons and ammunition being procured or used by the DAF must be legally reviewed by AF/JAO and contracting personnel, as appropriate, prior to their acquisition per AFI 51-401 and receive certification per DAFI 91-205, *Nonnuclear Munitions Safety Board*. Firearms, ammunition, and associated accessories must be fully tested and evaluated to meet safety, survivability, and capability requirements standard for HAF and DoD.

5.7.4. These specifications/capabilities will be in the AF/A4S approved (DAF/ SA/LW – EG) requirements for all SA/LW requirements going through the formal process (after receiving and approving same) and will keep stakeholders and users abreast through the DAF SA/LW – EG process.

5.8. SA/LW Modifications. For logistic support, SA/LW systems are categorized and defined as support equipment items. A modification is defined as an alteration to a configuration item that, as a minimum, changes the form, fit, function, capabilities, or interface of the item. Modification of any kind is not authorized without approval from AF/A4S, through the DAF SA/LW – EG. **(T-1)** This includes any changes to the weapon from the “As Issued” configuration. The “As Issued” configuration is how the weapon is configured when issued to units as a new item.

Chapter 6

RANGE OPERATIONS

6.1. Range Use. Safety is paramount when operating firing ranges. At least a tower operator or CRO and a FLO or RSO must be present when conducting any live-fire operation. **(T-1)** CATM will ensure that during range operations, at least one individual is present at the range that has received, is current in and can administer TCCC or equivalent first aid training. **(T-2)** Personnel will not conduct live-fire training unless the range is safe for use in accordance with this publication. **(T-2)** The host base CATM section is responsible for the military CATM range program. CATM sections will develop a “range book” for use on the firing range during all live-fire operations. It will include all items necessary, to include a range safety plan, to operate the range safely; this book remains on the range while the range is in operation. CATM live-fire qualification training and operational preparation of military, DoD civilian and contract personnel have priority over any other use of the range. This includes test firing of repaired and zeroing firearms for operational use or deployment. **Note:** Tenant ARC units have range and facility priority on scheduled UTA weekends over non-Air Force users and non-mission essential training.

6.1.1. Unit-Level Sustainment and Proficiency Training Use. Organizations with approved sustainment, competition, or proficiency training munitions per DAFMAN 21-209 V1 and the GMAT may use the range on an “as available” basis. CATM sections should provide flexible scheduling options to ensure training does not interfere with qualification training. The CATM Section Chief must approve all live-fire courses and type of fire that units use on the base range to ensure they are safe and within the limitations of the range. **(T-2)** Units with approved courses and certified RSO may use the range without CATM supervision, at the discretion of the CATM organizational commander. Only individuals who are currently qualified on the weapon may participate in the proficiency, competition, or sustainment programs. **Note:** CATM is not required to provide ammunition, manpower, or SA/LW for other units to conduct unit proficiency, sustainment, or competition training but may provide range time on “as available” basis. CATM sections will assist units with development of their training program. **(T-3)**

6.1.1.1. All units using the range will have personnel task certified by the CATM Section Chief. **(T-1)** Units require the following: a CRO in the grade of E-6 or above, and RSO in the grade of E-5 or above or DoD civilians of equivalent grades in those positions. **(T-2)** **Exception:** Security Forces personnel with a minimum grade of E-5 may conduct CRO duties and USAFA cadets may perform RSO and CRO duties during live fire training events. The RSO to shooter ratio is 1:3 for personnel conducting unit sustainment and or proficiency training for rifle, handgun, submachine gun, and shotgun. **(T-1)** For all other weapon systems the RSO to shooter ratio is 1:1 to include any course where shooter movement is outside the firing position. **(T-1)** Personnel performing CRO and RSO duties will not perform any other responsibilities during range use. **(T-1)** Personnel performing CRO or RSO duties must be qualified on the qualification course equivalent, on the weapon(s) for which they conduct training. **(T-1)**

6.1.1.2. The CRO has overall responsibility for all range operations and safety. The RSO(s) supervise shooters on the firing line and maintain shooter safety during firing.

RSO(s) are responsible for safe range operations and will remain on the firing range until all SA/LW and ammunition have been cleared and removed from the range. (T-1)

6.1.1.3. The requirements in **Paragraph 6.1.1** and subParagraphs apply to non-DAF/off-base ranges, in addition to host agency range requirements, for personnel to be authorized to use non-DAF range. (T-1)

6.1.1.4. The intent is to permit the user to create a training program in-line with their operational needs. This effort does not replace qualification requirements but is additional training to maintain perishable skills. To be effective, CATM sections should be open-minded, creative, responsive to the unique training requirements of other specialties, and identify training capabilities within the restrictions of the firing range without compromising safety.

6.1.1.5. Unit commanders are encouraged to institute a training program that does not include live fire. Unit NCOs who are qualified on the SA/LW being trained can provide training to their personnel using Air Force Tactics, Techniques, and Procedures (AFTTP) 3-4, *Airman's Manual*, CATM lesson plans and instructor guides as references. See DAFMAN 31-131 V3 for dry firing training options. Additionally, mechanical training is a highly effective way to increase familiarity and should be accomplished at unit level using personnel qualified on the weapon to conduct training.

6.1.1.6. Individuals are not required to be qualified if participating in non-live fire training.

6.1.2. Recreational and Non-DAF Use. The installation commander may authorize range use for non-DAF personnel, recreational shooting activities, authorized civilian police agencies, and civilian shooting groups, including the firing of privately owned firearms following the guidance in AFI 32-9003. This activity cannot interfere with the completion of military training to meet mission requirements. Personnel must formally request and receive permission from the installation commander to use the installation's small arms range. (T-2) If approved, the local CES will issue a license or permit using the guidance in AFI 32-9003. Units/personnel are not authorized to use the range until a license or permit is issued. If the range is shared with the Morale, Welfare and Recreation Rod and Gun Club, then utilization of the range by individuals of the public must be approved following the guidance in DAFI 34-101, *Air Force Morale, Welfare and Recreation (MWR) Programs and Use Eligibility*.

6.1.2.1. If approved, CATM personnel, as a minimum, will brief the CRO on range safety, operation policies and procedures, and provide them written certification as outlined in this publication. (T-2) The CRO will ensure that they and the other person are a minimum of 18-years old and capable of summoning assistance, if needed. (T-2) When shooting competitions are conducted on ranges, the CRO will brief instructors, safety personnel, and those managing the event on operating procedures, methods and commands used. (T-2) All personnel, including spectators, are under the control of the CRO while on the range complex.

6.1.2.2. Firearms and ammunition fired on ranges cannot exceed range limitations. CATM will approve weapons fired on the range and the owner ensures the weapons are serviceable. (T-2)

6.2. Live-Fire Operations. Students and instructors will clear all weapons transported to and from the firing range. (T-2) Handguns may be transported to the range cleared, holstered, and

secured. Weapons may be transported to the range by each shooter once cleared by CATM personnel. CATM personnel will visually inspect the range(s) each day before the start of firing and when firing is completed. **(T-2)** Minor shot damage, erosion, peeling paint, etc., may become serious problems if not repaired early. Look for obvious indicators of potential safety problems (e.g., exposed rocks exceeding the size permitted on the range, loose boards on overhead baffles, debris in the backstop/bullet trap, insect nests, walkways). CATM should develop a simplified checklist using **Attachment 3** for daily use, focusing on the most critical items. **Note:** This is not the same type of inspection as the annual range inspection outlined in **Chapter 7**. The CATM Section Chief will postpone firing until unsafe conditions are corrected. **(T-1)** Document range condition, list maintenance needed and submit work requests using the AF Form 332 or approved automated CE system.

6.2.1. Prefire Briefing. Before firing begins, the tower operator or certified CRO will give a range safety briefing to all personnel scheduled to fire. **(T-2)** Brief all students on each order of fire. The Tower Operator or CRO will include, but is not limited to briefing, emergency procedures, each phase of fire, positions to be used, time limits, number of rounds, rounds per magazine and number of magazines used. **(T-2)**

6.2.2. Ready Line. The ready line is normally a yellow line placed to the rear of the firing line. Shooters will remain behind the ready line and at assigned firing position until they are given further instructions. **(T-2)** The tower operator will notify the shooters when to proceed from the ready line to the firing line. **(T-2)**

6.2.3. Firing Line. The firing line on most ranges is a red line where the shooter occupies a predetermined position and fires a course or order of fire. FLOs must observe all personnel approaching, occupying, or departing the firing line as this is one of the times when a breach of safety is likely to occur. Ground weapons at the firing positions with the actions open, safety on, and muzzles pointed downrange. Shooters will handle weapons only on the tower operator's command. **(T-2)** Do not permit anyone forward of the firing line until the line is declared "safe." "Safe" means SA/LW are visually inspected for safe conditions by range personnel, grounded with actions open, safety on, or holstered and secured. Handguns may be holstered under the "hot range" (i.e., loaded with a round in the chamber) concept providing line officials ensure handguns remain secured in place in between orders of fire. During orders of fire, range personnel must ensure no one assumes a firing position in front of the firing line and all shooters are aligned. **(T-2)** Firing is only permitted from the firing platform when using a partially contained baffled range. Authorization may be given to coaches to occupy the firing line during special events or training, as required. Once firing has been completed, range officials will clear all SA/LW prior to the SA/LW being removed from the firing line. **(T-1)**

6.2.4. Target Scoring. Range officials score and record student targets for qualification evaluation phases. Each shot not fired for any reason, other than ammunition or weapon malfunction, is counted as a miss. In the case of re-fires for malfunctions, the time allowed is prorated for the number of rounds remaining and the orders of fire. Return all serviceable rounds not fired for any reason (e.g., shooter does not fire all rounds within the time limit) to ammunition stocks for future use. Annotate this in the remarks block of the DAF Form 710. If a score is in question, the CATM Section Chief makes the final decision when on the range. If the CATM Section Chief is not on the range, the tower operator makes the determination.

6.2.5. Range Policing. Students police the range for spent brass, litter, and other materials. Range officials make sure the students in their area police the range. The tower operator or a designated instructor makes sure other range facilities, such as classrooms and cleaning areas (used by students during the training day), are cleaned and policed. Ensure students receive a briefing on all health hazards and protective measures before performing range policing operations.

6.2.6. Range Commands. The range commands listed are typical commands for conducting rifle, handgun, and shotgun courses of fire. **Note:** It may be necessary to repeat orders of fire, positions, number of rounds and time limits to ensure all shooters understand the order/phase of fire. Additional or substitute commands may be given if they do not violate safety rules or cause safety hazards. The following are examples of range commands:

6.2.6.1. Clear the range.

6.2.6.2. Is the range clear?

6.2.6.3. The range is clear.

6.2.6.4. Shooters move forward to the X position.

6.2.6.5. You may handle your weapons.

6.2.6.6. Shooters, this order of fire is X, you will fire X rounds in X seconds.

6.2.6.7. With X rounds load.

6.2.6.8. Is the line ready?

6.2.6.9. The line is (or not) ready.

6.2.6.10. Fire.

6.2.6.11. Are there any rounds remaining?

6.2.6.12. Instructors, take care of your alibi shooters.

6.2.6.13. Clear, ground, or holster and secure all weapons.

6.2.6.14. Make the line safe.

6.2.6.15. Is the line safe?

6.2.6.16. The line is safe.

6.2.6.17. Shooters and instructors move to mark and analyze your target (score, repair, change). 6.2.6.18. Is the bay clear?

6.2.6.19. The bay is clear.

6.2.6.20. Shooters, you may safely handle your weapons and make any sight adjustments.

6.2.6.21. Cease-fire. The tower operator gives cease-fire commands with the use of a distinctive loud whistle, buzzer, horn, verbally over a public address system or the disappearance of the target through a turning or dropping of the target by a target control system. If there is an emergency, such as an accident, unsafe condition, or aircraft within the VDZ, anyone who sees it, whether it is range personnel, shooter, or spectator, immediately yells, "cease fire!" in a loud, clear voice. The tower operator repeats the cease-

fire command and then commands, "make the line safe!" Regardless of who gives the cease-fire command, all shooters cease firing immediately. After range personnel correct the condition causing the emergency, firing may resume.

6.2.7. Road Guards. Post road guards along frequently traveled trails or footpaths, at places where anyone might enter range danger areas and where adequate fences, or barriers do not exist.

6.2.8. Communication. Firing ranges will have effective communications equipment for emergency notification and communicating with students and instructors. **(T-2)** Ensure systems are checked before live-fire operations. Do not operate any firing range without the ability to contact emergency services.

6.2.9. Display of Flag and Streamers. Display a red streamer, or a rotating red beacon or both at each range complex entry point. **(T-2)** A rotating red beacon is used during night firing. The streamer or beacon indicates the range complex is in operation and firing is scheduled. Place a sign near the range complex entry point, which reads "DANGER, FIRING IN PROGRESS WHEN RED FLAG IS FLYING (OR RED BEACON IS FLASHING)." **(T-2)** Streamers may be ordered or locally manufactured. Flagstuffs used to display the streamer can be no less than 20-feet in height. Flagstuffs used to display a rotating red beacon are at a height (depending on local conditions) allowing it to be visible to all personnel approaching the range complex. If multiple ranges exist, each individual range displays an additional red flag (at least 2-feet by 3-feet) or a rotating red beacon or both while the range is in operation. **(T-2)** Fully contained indoor ranges, with controlled access through secured doors, require a red range in use light (beacon) at each doorway.

6.2.10. Emergency Equipment. Ensure serviceable fire extinguishers are readily available during range operations and munitions movements. Ensure a serviceable first aid kit and a serviceable vehicle (military or civilian) is immediately available (on the range) any time the range is in operation. Provide an approved eyewash station for students and instructors in locations where chemicals or airborne particles are commonly experienced (firing and maintenance).

6.2.11. Unsafe Acts and Conditions. Range personnel have the responsibility to enforce proper safety procedures on firing ranges. They have the prerogative, authority, and duty to remove any person(s) from the firing line or the range whom they deem unsafe. Using appropriate military bearing and behavior, immediately remove any person(s) from the firing line who disregards instructions or violates safety practices. In the event an individual refuses to leave the range, contact on-duty Security Forces for assistance. Provide a written summary to the individual's commander with a courtesy copy to the commander of the CATM section for any person(s) that perform unsafe acts and conditions while on the range. Accomplish this within five duty days and before the individual is allowed to return for training. **(T-3)**

6.2.12. Safety Equipment. Units/sections will budget and forecast for the procurement of mandated personal safety equipment. **(T-3)**

6.2.12.1. Issued to CATM Instructors:

6.2.12.1.1. A red baseball type cap with the words CATM embossed or embroidered with 1-inch black letters. Previous issued COMBAT ARMS caps remain authorized until replaced through attrition. CATM personnel will wear a red baseball cap to allow

students, visitors, and shooters to rapidly identify CATM personnel for assistance and to report safety issues. **Note:** See DAFI 36-2903, *Dress and Personal Appearance of Department of the Air Force Personnel*, for additional guidance.

6.2.12.1.2. Eye protection with side protection or wrap around in design and shown on the Authorized Protective Eyewear List (APEL) is mandatory for all instructors working or observing live-fire operations. **(T-0)** CATM personnel are authorized and will be issued two pair of high-quality non-prescription or prescription shooting glasses. **Note:** Prescription inserts are available for specific APEL products and are ordered by the local military medical facility's optometry clinic per DAFMAN 48-123.

6.2.12.1.3. High-quality hearing protection, meeting the level of protection determined by BE to decrease the risk of permanent hearing damage. **(T-0)** Electronic, noise cancelling hearing protection is preferred, as well as hearing protection that provides two-way communication between range personnel.

6.2.12.1.4. Heat resistant gloves to wear during live-fire operations for safety and protection from the conditions, to include those performing FLO duties. Thin gloves are critical as they protect hands during immediate action procedures, clearing and repairing jammed SA/LW.

6.2.12.2. Provide to the students:

6.2.12.2.1. Hearing protection must be worn during live-fire training. **(T-0)** Dual hearing protection may be necessary (for students and instructors) depending on decibel levels and exposure time. BE officials will determine the protection level needed based on the noise levels and exposure time.

6.2.12.2.2. Eye protection meeting ANSI Z87.1 standards (maintain adequate quantities for all firing positions and observers) must be worn during live fire for all personnel occupying the range. **(T-0)**

6.2.12.2.2.1. Students who wear prescription lenses will coordinate with the Optometry Clinic at the Military Treatment Facility to obtain optical inserts for ballistic protective eyewear (BPE) following the guidance in AFI 44-117, *Ophthalmic Services*. Student's non-ballistic prescription lenses are not authorized to be worn on the range. **(T-1)**

6.2.12.2.2.2. CATM will provide BPE to students who bring issued optical inserts. The supplied eyewear must be a product listed on the APEL and be compatible with student's optical inserts. CATM should coordinate with the Military Treatment Facility's Optometry Clinic, to ensure the Optometry Clinic is ordering the correct inserts as they are device specific per AFI 44-117.

6.2.13. Use of Enhanced Performance Round (EPR) Ammunition. EPR ammunition is not authorized for use on any DAF indoor, baffled (partially or fully contained) or small arms range with a steel trap of any type. **(T-1)** This includes the M855A1, M80A1, M856A1 and M62A1 rounds. These rounds are only authorized for training on non-contained (impact) ranges with the required SDZ and VDZ. The preferred ammunition for use on indoor, baffled (partially or fully contained) and ranges with a steel trap of any type is frangible. Frangible ammunition, such as DoD Identification Code AA16, Cartridge, 9mm Frangible and AA40,

Cartridge, 5.56mm Jacketed Frangible Single Round reduce ricochet/splash back hazards, environmental/health lead hazards and significantly reduce wear and tear of range structures (walls, baffles, and bullet traps). This dramatically extends the life of the range and reduces repair costs and frequencies. Commanders should consider these factors when contemplating the use of standard, lead core ammunition. On indoor, baffled (partially or fully contained) and ranges with any type of steel trap, lead core ammunition may only be used when frangible ammunition is not available, there is a mission need, or the commander provides other justification for not using it. **(T-2)** Inform BE if lead core ammunition is used to ensure proper health protection measures are in place.

6.3. Range Maintenance. The CATM personnel and CE organization are responsible for upkeep and maintenance of ranges and range facilities. **Note:** Coordinate with the local CE organization to determine what agencies are responsible for specific maintenance tasks. Ranges require comprehensive regular and routine maintenance. A proactive maintenance and self-help program benefits maintaining a safe, professional, and long-standing facility.

6.3.1. CATM is typically responsible for minor maintenance, upkeep and the specialized cleaning required inside the ranges for ammunition residue. This may include items such as target systems/retrievers, repainting target numbers, close in mowing/weed removal, general clean-up, and other minor maintenance/repair activities.

6.3.2. Some operations require special personal protective equipment and associated training, such as protective suits and respirators. Activities that require specialized training and personal protective equipment, should be contracted out to trained professional for range and commercial steel trap residue, high efficiency particulate air (HEPA) filter replacement, emptying bullet collect containers and trap residue cleaning, and bullet waste collection handling. If contract services are not available, the CATM Section Chief must obtain guidance and support from base BE personnel. The CATM Section Chief coordinates these operations and training with the base BE element.

6.3.3. CE provides materials to the CATM section for approved minor maintenance and self-help projects. Deteriorated wooden material removed from the firing range may contain lead projectile residue. Check with the CE environmental function and/or ensure compliance with AFMAN 32-7002 before disposing of such material, as it may be hazardous waste. CATM personnel will not perform range maintenance if a risk of exposure to hazardous materials exists without obtaining guidance from BE. **(T-2)** Contracting this function to a company that specializes in this type of work, may be more cost effective and safe.

6.3.4. The CE organization provides maintenance to ensure continued operation of the range and range facilities. This maintenance includes, but is not limited to, the replacement of eroding earth, mowing/weed eating of large grass areas on the range complex, repair or replacement of baffles and baffle supports, and emergency maintenance. The CE scheduling office and the CATM section jointly schedule required range maintenance. The requirement de-lead or resurface backstops/bullet traps, replace or overhaul baffles, surface and repair range roads, parking lots, and range floors, paint range and range facilities, and repair or replace facilities is to be identified for scheduled maintenance. **(T-2)**

6.3.5. Bullet Residue Removal from Bullet Traps. The CE environmental flight advises on environmental protection requirements for the disposal of hazardous range residue. BE advises government personnel on health risk management/health hazard exposure controls, for range

and commercial steel bullet traps cleaning. Because these activities require specialized training and PPE, performance by trained professional contract services is highly encouraged. The frequency of routine cleaning and residue removal depends upon the amount of lead accumulated and the size and type of the spent lead collection system.

6.3.6. De-leading or Mining of Backstops. De-leading or mining of the range backstop is a CE maintenance responsibility. The CE environmental flight advises on environmental protection requirements for de-leading and/or mining backstops. Backstops consisting of earth or synthetic media that captures and retains bullets must be de-leaded or replaced periodically when the earth or synthetic media reaches capacity. BE advises government personnel on health risk management/health hazard exposure controls, for de-leading or mining backstops. The frequency of de-leading or replacement depends upon the amount of lead accumulated and the potential for unsafe conditions due to excessive lead build up.

6.4. Range Closures. When a range is closed for more than 120-days, the CATM organizational commander must notify AFSFC/S3T, and courtesy copy the MAJCOM/SF by memorandum or e-mail. (T-2) The AFSFC will provide a courtesy copy of the notification to AF/A4SO. At a minimum, coordinate with base safety, CE, BE and other applicable base/wing agencies. (T-2) Include the following information as well as updating the range status in ARIS:

- 6.4.1. Date closed or planned closure date. (T-2)
- 6.4.2. Estimated length of closure. (T-2)
- 6.4.3. Projected reopening date. (T-2)
- 6.4.4. Reason for closure (if possible, include costs of repairs). (T-2)
- 6.4.5. Type of training and number of people due training during period of closure. (T-2)
- 6.4.6. Nearest military and civilian installation with available range facilities. (T-2)
- 6.4.7. Actions taken to continue training. (T-2)
- 6.4.8. Date and length of time the range was last closed and reason. (T-2)

6.5. Range Safety. Personnel using the range must apply the RM process before conducting live-fire training. (T-2) Apply the RM process initially for first time use of the range and validate those conditions have not changed before each subsequent use. If new weapons, courses of fire or munitions are used that can change the original assessment conduct another RM. Use the information in the following Paragraphs as a basis for this process. Local conditions may require additional safety precautions.

6.5.1. Range Safety Plan. Range conditions could constitute safety hazards and cause bounce backs or ricochets. Excessive rain may erode berms and bullet catches, so they do not contain bullets; overhead baffles rot or become damaged and no longer stop bullets. Backstops (earth or metal) can develop a build-up of residue and pose ricochet hazards. If unsafe conditions are detected, report the safety hazards to the appropriate CE section and base safety official(s). Ensure a range safety plan is placed in the range book at every range tower/control booth. Use RM principles to develop the plan; a checklist format is permitted.

6.5.1.1. Inspect ranges for safety deficiencies before firing each day. If unsafe conditions are discovered, correct them before the start of firing. On impact ranges, check entry points for unauthorized entry and, where possible, inspect the impact area before the start of firing

to make sure personnel or equipment are not in the impact area. Ensure barriers and fences are in place.

6.5.1.2. A detailed plan of those predetermined hazards that could result in death or injury to any person at the facility and preventive measures. Include by hazard all preventive measures, first aid, emergency contact information and reporting instructions.

6.5.2. Range Safety Rules. Prominently display range safety rules on the firing range. The sign will include, but is not limited to, the following rules:

- 6.5.2.1. Treat all weapons as if they are loaded. **(T-2)**
- 6.5.2.2. Holster, clear, or secure all weapons when they are not in use. **(T-2)**
- 6.5.2.3. Keep the muzzle of the weapon under control at all times. **(T-2)**
- 6.5.2.4. Never point the weapon at anything you do not intend to shoot. **(T-2)**
- 6.5.2.5. No horseplay while on the range or while handling weapons. **(T-2)**
- 6.5.2.6. Do not handle weapons while personnel are down range. **(T-2)**
- 6.5.2.7. Do not handle weapons until instructed to do so by the range official. **(T-2)**
- 6.5.2.8. No smoking within 50-feet of the firing line. **(T-2)**

Chapter 7

RANGE CRITERIA, CERTIFICATION, AND INSPECTION

7.1. Range Design Overview.

7.1.1. To provide effective management of the planning and resourcing of small arms ranges and support facilities, AFIMSC, through the SARWG manages ranges. The Secretary of the Air Force Community Partnership office (SAF/IEI) will support AFIMSC with community partnership initiatives and AFIMSC will include this office in community partnership activities. AFIMSC will create a Small Arms Range Master Plan to manage programming of small arms ranges and will route this plan through the MAJCOMs. AFIMSC will incorporate the DAFSAMP strategy outlining SA/LW ranges and training facilities of the future.

7.1.2. AFIMSC will consider the following small arms range delivery options in this order: on base DAF-owned ranges, DoD/Federal ranges, directing the base to send personnel to DAF-owned ranges within the local area, directing temporary duty (TDY) to another location for small arms training (planned and budgeted by units utilizing O&M dollars funded by AFIMSC, as needed) or off-base community partnership range. In addition, AFIMSC will weigh lifecycle costs, quality and effectiveness of training, student throughput, days available to train, life span of range options, firing lane requirements, utilization, age, condition, and mission supported. AFIMSC will consult with AF/A4S and the MAJCOM/SF on the development of the Small Arms Range Master Plan that best meets mission requirements in the most cost-effective manner.

7.1.3. AF/A4S advises AFIMSC as needed and when strategic decisions affect which missions may change the management and resourcing of firing ranges. AFIMSC through the AFSFC should coordinate mission and firing range requirement changes with the MAJCOM/SF.

7.1.4. The Air Force Reserve Command Directorate of Logistics, AFRC/A4, shall consult with AFIMSC and AF/A4S using the AFIMSC analysis to select the appropriate solution for their installations.

7.1.5. The National Guard Bureau Directorate of Logistics, NGB/A4, should consult AFIMSC and AF/A4S using the AFIMSC analysis to assist in their selection of the appropriate solution for their installations. The National Guard Bureau Security Forces, NGB/A4S, should notify AFIMSC of any decisions on the execution of funds for ANG small arms ranges. ANG Wing Commanders will coordinate small arms range issues through NGB/A4. (T-2)

7.2. Range and Support Facilities Criteria. When planning, constructing, and rehabilitating any type of range or range complex use UFC 4-179-02, FC 4-179-03F, and this instruction. **Note:** For the ARC, use UFC 4-179-02, FC 4-179-03F, this instruction and, as amended or supplemented guidance (e.g., ANGH 32-1084) consistent with DoDI 1225.08. The UFC and FC includes facilities criteria for standardized small arms ranges and support facilities. The UFC is directive in nature. Range construction should consider the need to fire tracers (impact ranges only), target positions/distances (e.g., effective range of weapons, operational need, and courses of fire, etc.), target width (e.g., machine gun, rifle/carbine, area targets, etc.) and shooter positions (e.g., prone, kneeling, standing, barricades) used to engage the targets at varying distances. If the range will use firing stalls or divided firing points, design them to allow the tower operator an unobstructed view of the firing line and shooters.

7.2.1. The preferred training range for all installations is an outdoor non-contained (impact) range where real estate permits. Units should work with their local CE Real Property to see if relocation, lease, or purchase options are viable to obtain land for a non-contained (impact) range. When government-owned property suitable for a small arms range is not available, and where land acquisition is feasible, the base civil engineer will prepare the documents required for purchase or lease. Units should evaluate community partnerships or agreements with other local federal or municipal ranges that can provide improved training capability. When planning for a non-contained (impact) range, ranges should accommodate target placement out to the maximum effective range of the weapon (e.g., 50-meters for handgun and 600-meters for rifle). When the maximum effective range target distance is not viable, installation leadership should work creatively to move the target distance out further than 25-meters. For example, 100-meter target line is better than 25-meter target line. When a non-contained (impact) range is infeasible based on land availability or other mission requirements, the installation may plan for and construct an indoor range following the guidance in UFC 4-179-02 and FC 4-179-03. Indoor ranges are less desirable based on initial construction cost, higher annual operating cost, limitation on weapons training scenarios, and higher occupational health risk for instructors.

7.2.2. Secure the range and SDZ areas to prevent unauthorized entry using barriers to block roads, walkways, or paths.

7.2.2.1. Indoor fully contained ranges require barriers in the form of key-operated, locked doors or electrically locked doors to prevent entry while firing is in progress.

7.2.2.2. Non-contained (impact) ranges require several barriers and signs to make the range safe. The number of barriers required depends on the number of roads, walkways, and paths that lead into the SDZ. Attach reflective warning signs to barriers (see [Figure 7.1.](#)).

7.2.2.3. Use fencing to prevent personnel, animals, and vehicles from entering range SDZ(s). A chain-link fence around the complete range complex, including the SDZ, is preferred. Use barriers or gates to block access paths. On existing partially contained baffled ranges with earth side berms and an earth/metal backstop, as a minimum, install a 1.82-meter (6-foot) chain-link fence along the sides of the SDZ and on the downrange side of the impact area, incorporating the berms. Install the fence no closer than 5-meters (16-feet) from the toe of the berms and backstop. For fully contained ranges with concrete containment walls and an earth/metal backstop, as a minimum, install the fence from one wall, around the backstop, to the opposite wall when range components are exposed. For example, if the back side of the bullet trap and spent round-retrieval system is exposed, erect a fence to restrict access by unauthorized personnel. Provide a locked access gate for maintenance equipment.

7.2.3. Warning signs are positioned on the approaches to the range and along the perimeter of the SDZ if access is not otherwise restricted. Place signs along the normal boundaries of the range. Post the signs no more than 100-meters (328-feet) apart along the range perimeter, parallel to roads or paths. **(T-2)** Based on local topography, place signs close enough to give reasonable warning along other areas of the SDZ. Refer to [Figure 7.2](#) for proper location of warning signs. Signs must be bilingual where English is not the national language or multilingual where needed. Post bilingual signs on continental United States (CONUS) ranges located near foreign borders. **(T-2)** Consult the installation legal office for local policy on

bilingual signs. Construct warning signs in compliance with UFC 3-120-01, *Design: Sign Standard*. The warning signs should have standard red letters on a white background. Typical range signs are shown in [Figure 7.1](#).

Figure 7.1. Warning Signs.

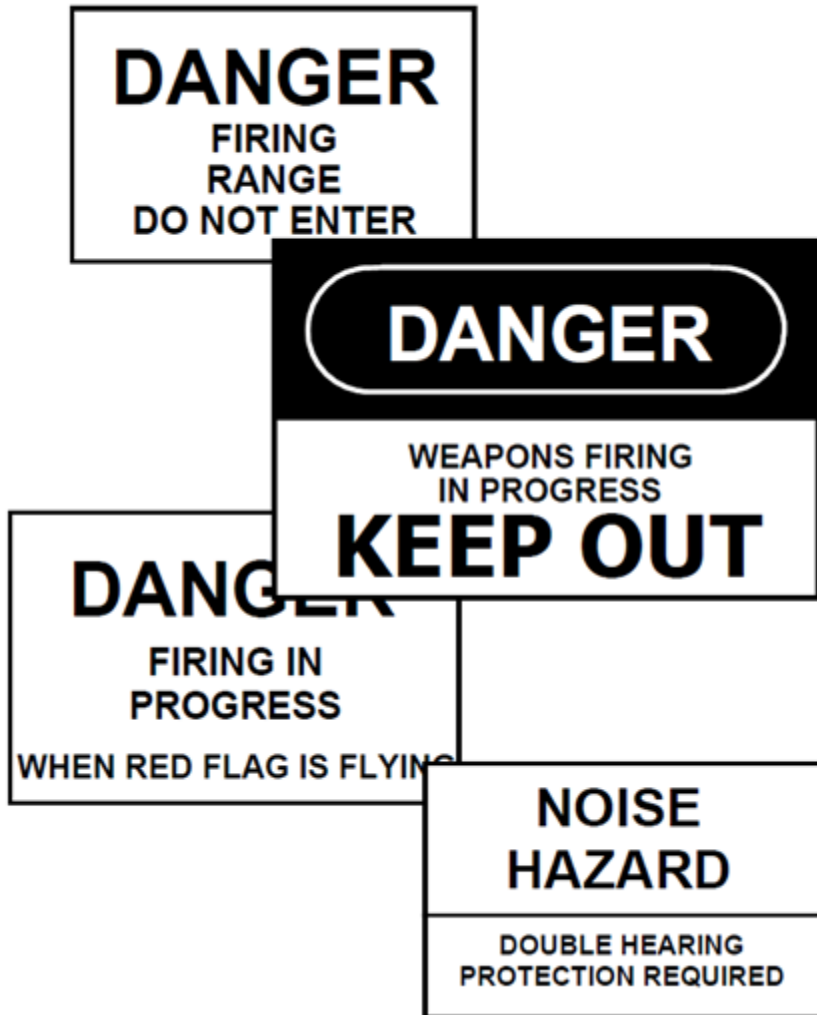


Figure 7.2. Warning Sign Locations.

Warning Sign	Location
Danger Firing in Progress When Red Flag is Flying	Approach roads
Danger Firing Range Do Not Enter	Fencing and barriers every 100m (328 ft)
Danger Weapons Firing in Progress Keep Out	Entry road
Noise Hazard Double Hearing Protection Required	Firing line

7.2.4. New range projects, to include major renovations will include an automated targeting system (e.g., Turning, Pop-Up, retrieval and Location of Miss and Hit Targets) and virtual training system to enhance training, expedite scoring, maximize range time, and mitigate hazardous exposure. **(T-2)**

7.3. Community Partnership Ranges and Facilities. When planning for a new or replacement small arms range, installation commanders may consider a partnership with local community law enforcement agencies or other activities to jointly construct and/or operate ranges and/or support facilities to support base training needs. This may result in cost savings to the DAF and the other agency by sharing the costs of construction, maintenance, and operation. **Note:** All requirements for design, construction, inspection, health protection, maintenance, and operation of small arms ranges in this instruction also apply to community partnership ranges when agreed upon. **(T-1)** The installation commander will coordinate with AFIMSC when considering or a community partner shows interest in a Community Partnership Range. **(T-2)**

7.3.1. To ensure compatibility with training needs, installation stakeholders will consider the following items before pursuing a community partnership range to replace a base range or in lieu of constructing a base range or to augment a DAF range.

7.3.1.1. All weapons (e.g., M110A1, Mk22, M2A1, M240B, M3A1, etc.) that are required to support the installation and or community needs. This should include night fire, vehicle

firing, automatic firing, tracer use, ammunition hazards, security risk/response time, surge priority use and all facets of the training required.

7.3.1.2. Enough firing points to support training throughput (number of personnel requiring training) of the base and or community partner between the different ranges.

7.3.1.3. The preferred configuration or type of existing (already built) partnership range is non-contained (impact), indoor fully contained, and outdoor partially contained, whereas the preferred configuration or type of new construction partnership range is either non-contained or indoor fully contained.

7.3.1.4. The total cost of renovating, maintaining, and operating the existing base range is more than all DAF costs associated with the partnership range over the life of the agreement.

7.3.1.5. Operational security to support unconventional forces.

7.3.1.6. Classroom availability that meets space requirements that are adequate to support base qualification training requirements.

7.3.1.7. Qualification training priority over other users or receives an acceptable priority to meet installation mission requirements (home station and deployment).

7.3.1.8. Access to the range necessary to accomplish installation training requirements.

7.3.1.9. Range allows for full execution of the qualification training courses contained in DAFMAN 31-131 V2 without a waiver and allows use of required types of ammunition.

7.3.1.10. Like capability regarding length of the training day for both CATM personnel and students. Accessing the range must not add more than 2-hours to the training day, including academic and live-fire training, as well as travel time to obtain/return weapons, ammunition or needed range equipment from the installation. Lengthy training days reduces the effectiveness of both instructors and shooters, resulting in an increased risk to personnel during live-fire weapons training.

7.3.2. If community partnership range facilities are intended to include unattended storage of SA/LW or ground munitions, planners ensure compliance with DoDM 5100.76_AFMAN31-101 V2 during planning and operation of the facility.

7.4. Facility (Range) Certification. Certify new and rehabilitated DAF ranges as meeting required specifications. This requirement also applies to community partnership ranges. Certification consists of the facility acceptance inspection, conducting a test-fire and trial operations. CATM must initially certify all DAF firing ranges before the first use and conduct a range safety inspection (every 12-months) thereafter.

7.4.1. Test-Fire. After construction or rehabilitation, and before conducting training and qualification operations, CATM must accomplish a controlled test-firing using tracer ammunition. **(T-1)** If tracer ammunition cannot be safely fired on the range, CATM personnel will fire ball ammunition with witness screens to conduct the test-fire. **(T-1)** Representatives from base Safety and CE will act as observers. **(T-3)** A CATM instructor will use the most powerful ammunition authorized for use on the range for the test-fire. **(T-1)** Remove all fire hazards from the range and areas surrounding the range. **(T-1)** Make sure firefighting equipment is immediately available when conducting range tests using tracer ammunition.

(T-1) Provide sandbags or other protection for the shooter during test firing. **(T-1)** Hang witness screens of paper when firing non-tracer rounds to see if splash back or ricochets are occurring at the bullet trap. **(T-1)**

7.4.1.1. Non-Contained Ranges (Impact). A test-fire is not required for a non-contained range. After the construction inspection confirms that the full SDZ land area is available and all barriers, fences and signs are in place, proceed to trial operations in [Paragraph 7.4.2.](#)

7.4.1.2. Fully Contained Ranges. Do not test baffles with direct fire. **(T-3)** To test for ricochet containment, the shooter must first fire service ammunition (non-tracer) from the prone position into the backstop and then at the floor. **(T-1)** CATM will use a test (witness) screen to check the ricochet potential of the range floor. **(T-1)** The test screen may be constructed from Celotex[®] (National Stock Number 5640-00-073-2803) or cardboard material, fashioned into a 1.2-meter by 1.2-meter (3.9-foot by 3.9-foot) four-sided cube. Place the test screen at various locations on the range floor. **(T-1)** Fire into the range floor in front of the test screen at various angles from the firing line. **(T-1)** To determine if ricochets would have left the range, sight along a small-diameter dowel placed through ricochet holes in the screen material. **(T-1)** Take corrective measures if the angle of departure and the sighting verifies that the bullet left the range. **(T-1)** To determine ricochet patterns, conduct tracer tests (if possible) using the same caliber of ammunition to be used on the range. If tracer rounds cannot be used, fire multiple rounds using the test witness screen to verify the path of the rounds. **(T-1)** Using tracer ammunition is the fastest and most efficient method of determining ricochet patterns and hazard potential.

7.4.2. Trial Operations. Trial operation of a new or rehabilitated range is mandatory. **(T-1)** The CATM Section Chief and an installation Safety representative will be present during trial operations. **(T-2)** One copy of the trial operations report must be included in the construction acceptance documentation. **(T-2)** The CATM section will retain an additional copy on file for the life of the range. **(T-2)** Include the following items in the report:

7.4.2.1. Date of construction completion. **(T-2)**

7.4.2.2. Date of trial operation. **(T-2)**

7.4.2.3. Course of fire. **(T-2)**

7.4.2.4. Type of weapon, caliber and ammunition used for the trial (This must be the most powerful ammunition intended for use on the range). **(T-2)**

7.4.2.5. Target system functioning (may be mechanical or fixed). **(T-2)**

7.4.2.6. Number of shooters who fired. **(T-2)**

7.4.2.7. Firing points used. **(T-2)**

7.4.2.8. Damage incurred or improperly functioning items. **(T-2)**

7.4.2.9. Initial hazardous noise survey report. **(T-2)**

7.4.3. Documentation. Document the procedures used, and the results of the test-fire and trial operations using the standard official memorandum format and receive approval from the installation commander or delegated authority. **(T-2)** The CATM section will maintain certification for the life of the range or until a new certification is required. **(T-2)** Load all

certified ranges, including non-DAF firing ranges into ARIS. If the base cannot accomplish this, contact AFSFC/S3T for assistance.

7.5. Annual Range Safety Inspections. CATM will inspect DAF and certify non-DAF ranges, to include other facilities using a locally developed guide and checklist following [Attachment 2](#), *Risk Management Evaluation of Existing Range Facilities* and [Attachment 3](#), *Small Arms Range Inspection Checklist* of this instruction. **(T-2) Note:** During DAF range inspections, ensure all potential problem areas are identified for maintenance. The CATM Section Chief will conduct a formal range inspection within 60-days (plus or minus) of the anniversary date of the certification or safety inspection date. **(T-2) Exception:** Air Force Office of Special Investigations (AFOSI), Strategic Programs and Requirements (AFOSI/XR) may approve use of civilian, civilian law enforcement agency or other non-DoD federal agency ranges by AFOSI personnel for sustainment/proficiency training. These ranges should be certified safe for use by federal, state, or local governments.

7.5.1. The CATM Section Chief will request assistance from base safety, CE environmental, CE maintenance and BE, as required for DAF-ranges. For non-DAF ranges, as a minimum, the CATM Section Chief will request assistance from base safety. Use the RM processes outlined in AFI 90-802, *Risk Management* and DAF Pamphlet (DAFPAM) 90-803, *Risk Management (RM) Guidelines and Tools*. The CATM Section Chief must develop a localized version of the Small Arms Range Inspection Checklist and consider unique items that are not included in the example. **(T-3)** The inspection, at a minimum, for non-DAF ranges covers basic range safety and Air Force training requirements. The range inspection ensures the facilities meet the intent of USAF training programs and do not expose Air Force personnel to unmitigated conditions or endanger others.

7.5.2. The CATM Section Chief along with CE personnel ensures all corrective actions and repairs comply with UFC 4-179-02 and this instruction. Local CATM officials may add inspection requirements as necessary to meet their situation. **Note:** UFC 4-179-02 applies when constructing new or undergoing major range renovations; it does not drive compliance of existing ranges built to older standards. Existing ranges are managed through the risk mitigation process using a locally developed guide and checklist following [Attachment 2](#) and [Attachment 3](#). As a minimum, inspect the items listed below on DAF-ranges.

7.5.2.1. Backstop Condition. Dirt backstops should be regularly checked for erosion. If installed, check the bullet deflector/bullet catch for bullet holes and ensure the structure is attached to the backstop. Check for erosion both behind the targets and at all points facing the shooters. Heavy lead buildup could cause ricochets. The Rod Test is used to detect excessive lead build-up within the face of the dirt backstop, tap a 3/8-inch rod at least 4-feet long into the earthen backstop using a 4-pound (maximum) hammer. Repeat this test on impact area from all firing points. The rod must pass unimpeded through the 3-foot layer of topsoil. **(T-3)** If the rod will not pass, the CATM Section Chief will coordinate required maintenance (removal of built-up lead or addition of earth) before continued use of the range. **(T-3)**

7.5.2.2. Deterioration of Baffles and Supports. Overhead and canopy baffles must completely stop all direct-fired rounds of the caliber/type with the greatest penetration authorized for use on the range. **(T-2)** Visually check each baffle to make sure rounds are not passing through them. The CATM Section Chief will ensure that baffles that are not

stopping fired rounds are modified to stop the rounds or firing is postponed until the base CE can repair or upgrade them. **(T-2)**

7.5.2.3. Exposed Rocks. On baffled ranges, remove rocks larger than 3/8-inch in diameter from the range floor, backstop, side berms (from the range floor to the top of the berm). Inspect these areas after severe weather as topsoil may erode and expose rocks. For impact ranges, remove large rocks and boulders creating hazards to shooters on the range or people on adjacent ranges.

7.5.2.4. Bullet Traps (Baffled Ranges with Metal Backstops). Check for excessive bullet residue and/or lead build-up in trap area. The cleaning schedule depends on the amount of use and the design of the trap. Periodically, maintenance personnel will remove bullet residue (lead, jacket, and other residual material) from the bullet trap. **(T-2)** Coordinate with the local CE environmental engineers to ensure compliance with requirements for disposal of hazardous material as outlined in AFMAN 32-7002. Unless certified to handle hazardous material, CATM will not remove or handle bullet residue from the bullet trap or filtration system. **(T-2)** Use of contractors for these actions is preferred. Inspect and maintain commercial backstops following the manufacturer's guidance. In addition, bullet traps will be inspected for warping of plates, closing/restriction of bullet entrance areas (trap mouth), exposed hardware or misaligned plates (causing ricochet hazards) or openings in any area allowing rounds/fragments of rounds to escape from the trap. **(T-2)**

7.5.2.4.1. CATM must ensure that targets are positioned to ensure that projectiles enter the bullet trap at the intended angle and impact the trap at the designed location from all firing points, target distances and firing positions used on the range. **(T-2) Note:** Follow bullet trap manufacturer's guidance, if available.

7.5.2.4.2. CATM must regularly inspect the area of the bullet trap where projectiles impact and adjust target positions (move aiming point up, down, left, and right) to avoid excessive wear in one area of the trap. **(T-2)**

7.5.2.5. Cracks in Metal Bullet Traps and Support Brackets. If cracks are detected in metal bullet traps or their supports, contact installation CE to repair the area in question as soon as possible. If there are dimpled areas in the steel, fired bullets could return toward the shooter or be deflected out of the bullet trap.

7.5.2.6. Impact ranges must possess an adequate SDZ from any location that shooters fire to ensure rounds fired remain within range boundaries. **(T-1)** The SDZs listed in Department of the Army Pamphlet 385-63, *Range Safety*, and VDZs listed in UFC 4-179-02 are the minimum requirements for DAF ranges and or ranges used by DAF personnel. **(T-1)** Plot DAF-range(s) SDZ and VDZ on base maps to prevent encroachment.

7.5.3. Documentation. CATM Section Chief will document the annual range safety inspection results and corrective action(s) necessary to resolve the unsafe condition(s). The report includes any discrepancies/safety items noted during the inspection and corrective action needed. If discrepancies are identified, the CATM Section Chief must include a completed DAF Form 4437, *Deliberate Risk Assessment Worksheet*, following the RM guidance outlined in [Attachment 2](#). **(T-2)** Coordinate the report through the base Safety office and other appropriate base agencies that participated. **(T-2)** After coordination with the base agencies, route the report to the Security Forces/CATM organizational commander notifying him or her

of the findings and recommended corrective action(s) for endorsement. **(T-2)** Provide a copy of the report to the installation commander for awareness. **(T-2)** The CATM Section Chief will maintain the last two inspection reports. **(T-2)**

TOM D. MILLER, Lieutenant General, USAF
DCS/Logistics, Engineering, and Force Protection

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

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AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

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FC 4-179-03F, *Air Force Indoor Small Arms Firing Ranges*, 1 April 2015

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Prescribed Forms

None

Adopted Forms

DD Form 1391, FY ____ *Military Construction Project Data*

DD Form 1574, *Serviceable Tag - Materiel*

DD Form 1577-2, *Unserviceable (Repairable) Tag - Materiel*

DAF Form 522, *Ground Weapons Training Data*

DAF Form 623, *Individual Training Record Folder*

DAF Form 679, *Department of the Air Force Publication Compliance Item Waiver request/Approval*

DAF Form 710, *Combat Arms Training Record*

DAF Form 847, *Recommendation for Change of Publication*

DAF Form 4437, *Deliberate Risk Assessment Worksheet*

AF Form 55, *Employee Safety and Health Record*

AF Form 68, *Munitions Authorization Record*

AF Form 332, *Base Civil Engineer Work Request*

AF Form 483, *Certificate of Competency*

AF Form 469, *Duty Limiting Condition Report*

AFTO Form 105, *Inspection Maintenance Firing Data for Ground Weapons*

SF Form 368, *Product Quality Deficiency Report*

Abbreviations and Acronyms

AETC—Air Education and Training Command

AFB—Air Force Base

AFCEC—Air Force Civil Engineer Center

AFCFM—Air Force Career Field Manager

AFI—Air Force Instruction

AFIMSC—Air Force Installation and Mission Support Center

AFLCMC—Air Force Life Cycle Management Center

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFOSI—Air Force Office of Special Investigations

AFOSIMAN—Air Force Office of Special Investigations Manual

AFPD—Air Force Policy Directive

AFQC—Air Force Qualification Course

AFR—Air Force Reserve

AFRC—Air Force Reserve Command

AFSC—Air Force Specialty Code
AFSFC—Air Force Security Forces Center
AFSVC—Air Force Services Center
AFTO—Air Force Technical Order
ANG—Air National Guard
APEL—Authorized Protective Eyewear List
ARC—Air Reserve Component
ARIS—Automated Readiness Information System
BE—Bioenvironmental Engineering
CATM—Combat Arms Training and Maintenance
CC—Commander
CCMCK—Close Combat Mission Capability Kit
CE—Civil Engineer
CRO—Chief Range Officer
CROWS—Common Remotely Operated Weapon Station
DAF—Department of the Air Force
DAFECD—Department of the Air Force Enlisted Classification Directory
DAFI—Department of the Air Force Instruction
DAFMAN—Department of the Air Force Manual
DAFPAM—Department of the Air Force Pamphlet
DCS—Deputy Chief of Staff
DD—Department of Defense Form
DLA—Defense Logistics Agency
DoDD—Department of Defense Directive
DoD—Department of Defense
DoDI—Department of Defense Instruction
DWT—Defender Weapons Trainer
FC—Facilities Criteria
FLO—Firing Line Official
GMAT—Ground Munitions Authorization Tables
HAZMAT—Hazardous Material
HRA—Health Risk Assessment

ICE—Individual Combat Equipment
MAJCOM—Major Command
MSDS—Material Safety Data Sheet
NCO—Noncommissioned Officer
NGB—National Guard Bureau
OI—Operating Instruction
OJT—On-the-Job Training
OPR—Office of Primary Responsibility
PCS—Permanent Change of Station
PMEL—Precision Measurement Equipment Laboratory
PPC—Personnel Processing Code
PQDR—Product Quality Deficiency Report
RM—Risk Management
ROTC—Reserve Officer Training Corps
RSO—Range Safety Officer
SA/LW—Small Arms and Light Weapons
SAEMR—Small Arms Expert Marksmanship Ribbon
SAR—Small Arms Range
SDS—Safety Data Sheet
SDZ—Surface Danger Zone
SF—Security Forces
SFTRG—Security Forces Training Reference Guide
SMC—Shoot, Move and Communicate
SME—Subject Matter Expert
SPI—Special Packaging Instruction
TC—Training Circular
TCCC—Tactical Combat Casualty Care
TDY—Temporary Duty
TO—Technical Order
UFC—Unified Facilities Criteria
UQ—Unqualified
USAFA—United States Air Force Academy

USAF—United States Air Force
USSF—United States Space Force
USC—United States Code
UTA—Unit Training Assembly
UTC—Unit Type Code
VDZ—Vertical Danger Zone
VTS—Virtual Training System

Office Symbols

AF/A1—Air Force Deputy Chief of Staff, Manpower and Personnel
AF/A4—Air Force Deputy Chief of Staff, Logistics, Engineering and Force Protection
AF/A4S—Director of Security Forces
AF/A4C—Director of Civil Engineer
AF/A4L—Director of Logistics
AF/A4SO—AF/A4S, Operations Division
AF/A4LR—AF/A4L, Readiness Division
AFCEC/CF—Air Force Civil Engineering Center, Facility Engineering Division
AFCEC/COS—Air Force Civil Engineering Center, Operations, Engineering Division
AFCEC/COSC—Air Force Civil Engineering Center, Operations, Civil and Cost Engineering Branch
AFLCMC/EBU—Air Force Life Cycle Management Center, Weapons Superiority Division
AFOSI/XR—Air Force Office of Special Investigations, Strategic Programs and Requirements
AFRC/A4—Air Force Reserve Command Directorate of Logistics
AFSFC/S3T—Air Force Security Force Center, Training Division
AFSVC/VMS—Air Force Services Center, DAF Fitness and Sports Division
MAJCOM/SF—Major Command, Security Forces
NGB/A4—Air National Guard Director Logistics and Installations
NGB/A4S—Air National Guard, Director of Security Forces
SAF/IEI—Deputy Assistant Secretary of the Air Force for Installations

Terms

Armed—A person equipped with a firearm that has a live round of ammunition in a magazine inserted into the firearm, chamber, or cylinder.

Capability—The ability to execute a specified course of action. It is defined by an operational user and expressed in broad operational terms in the format of an Initial Capabilities Document.

Certification—A formal indication of an individual’s ability to perform a task to required standards.

Compatibility—The capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference.

Contingency Operations—A military operation that is either designated by the Secretary of Defense as a contingency operation or becomes a contingency operation as a matter of law (10 USC 101[a][13]). It is a military operation that: a. is designated by the Secretary of Defense as an operation in which an individual of the Armed Forces are or may become involved in military actions, operations, or hostilities against an enemy of the United States or against an opposing force; b. is created by definition of law. Under 10 USC 101 (a)(13)(b), a contingency operation exists if a military operation results in the (1) call up to (or retention on) active-duty of an individual of the uniformed Services under certain enumerated statutes (10 USC **Sections 688, 12301(a), 12302, 12304, 12305, 12406, or 331-335**); and (2) the call up to (or retention on) active-duty individuals of the uniformed Services under other (non-enumerated) statutes during war or national emergency declared by the President or Congress.

Contingency—A situation requiring military operations in response to natural disasters, terrorists, subversives, or as otherwise directed by appropriate authority to protect United States interests. (JP 5-0)

Deployment—The movement of forces into and out of an operational area. See also deployment order; deployment planning; prepare to deploy order. (JP 3-35)

DoD Civilian with Equivalent Qualification—A DoD civilian who has graduated from the AFSC awarding Small Arms or CATM Technical School.

Firearm—Defined in Section 921 of Title 18, U.S.C.

Firing Line Official—The assigned individual(s) on the firing platform who enforces safety procedures, policies, and coaches shooters during range training.

Firing Line—The line where SA/LW are fired and where no one may move in front/forward of during firing. A red line located as close as possible to the front of the firing position.

Firing Position—The point or location where a weapon, other than demolitions, is placed for firing. (For demolitions, the firing position is the point or location where the firing crew is located during demolition operations).

Functional Manager—The office of primary responsibility for a particular Air Force specialty. Examples: AF/A4S for Security Forces; AF/A4C for civil engineers; AF/A1 for personnel and education and training specialists.

Go/No-Go—The stage where an individual has gained enough skill, knowledge, and experience to perform the tasks without supervision. Meeting the task standard. No-Go indicates they cannot meet the task standard.

Health Risk Assessment (HRA)—Application of professional judgment (fully qualified BE officer, civilian industrial hygienist, or BE Craftsman [4B071]) based on qualitative and quantitative information such as exposure measurements and estimates, mathematical modeling, and/or observations of work practices to identify and assess chemical, physical and biological health hazards.

High Threat Area—Deployment location where the theater commander requires all personnel be fully qualified to participate in the force protection mission based upon the threat condition. Deployment requirements are usually identified in the deployment tasking order.

Impact Area—The land area and associated airspace within a training complex intended to capture or contain ammunition, munitions, or explosives as well as resulting debris, fragments, and components from various weapon system employments.

In-Garrison—Performing duties at home station or on the installation at a non-deployed location.

Operational Requirements—User or user representative generated validated needs developed to address mission area deficiencies, evolving threats, emerging technologies, or weapons system cost improvements.

Range—An area reserved and normally equipped for qualification/practice in SA/LW delivery and/or shooting at targets.

Ready Line—The line located behind the firing line. Serves as a “staging” area for shooters to receive pre-fire range commands. Usually identified by a yellow line located behind the firing line.

Security Forces/CATM Organizational Commander—The unit commander of the organization performing the base CATM function or the unit CATM function. Usually the Security Forces squadron commander.

Small Arms and Light Weapons—Small arms and light weapons are defined as man-portable weapons made or modified to military specifications for use as lethal instruments of war that expel a shot, bullet, or projectile by action of an explosive. Small arms are broadly categorized as those weapons intended for use by individual members of armed or security forces. They include handguns, rifles and carbines, submachine guns, and light machine guns. Light weapons are broadly categorized as those weapons designed for use by two or three members of armed or security forces serving as a crew, although some may be used by a single person. They include heavy machine guns, hand-held under-barrel and mounted grenade launchers, portable anti-aircraft guns, portable anti-tank guns, recoilless rifles, man-portable launchers of missile and rocket systems and mortars.

Surface and Vertical Danger Zone—The ground and airspace designated within the training complex (to include associated safety areas) for vertical and lateral containment of projectiles, fragments, and debris, and components resulting from the firing, launching, or detonation of weapons systems to include explosives and demolition.

Tower Operator—The person who monitors the entire range at all times, paying particular attention to the firing line.

Trainer—A trained and qualified person who teaches personnel to perform specific tasks through on-the-job training methods. Also, equipment that the trainer uses to teach personnel specified tasks.

Training Complex—Includes all firing ranges, SA/LW training facilities, associated impact areas and maneuver training areas within the installation/community boundary.

Attachment 2

RISK MANAGEMENT EVALUATION OF EXISTING RANGE FACILITIES

A2.1. Overview. Risk Management is a tool used to assess the risks associated with continued use of existing firing ranges that do not satisfy the minimum criteria outlined in this publication and UFC 4-179-02 using the DAF Form 4437. For further information on RM, refer to AFI 90-802 and DAFFAM 90-803. CATM and base agencies use the guidance and processes for RM along with the criteria identified in this publication and UFC 4-179-02 to determine the condition and corrective actions needed when inspecting Air Force small arms ranges. Additionally, the small arms range inspection checklist in [Attachment 3](#) provides a listing of key areas that should be inspected for potential safety, health, and or environmental problems. **Note:** Range criteria is contained in UFC 4-179-02.

A2.2. 5-Step RM Process. RM is a continuous, systematic decision-making tool consisting of five primary steps that define the formal RM process associated with deliberative RM considerations. The five steps of the process are listed and broken down into several sub-steps called “actions” as follows:

A2.2.1. Step 1. Identify the Hazard. This step has three actions:

A2.2.1.1. Mission/task analysis (e.g., training personnel to fire weapons).

A2.2.1.2. Listing the hazards (e.g., fired rounds leaving the range).

A2.2.1.3. Listing the causes (e.g., baffles are of insufficient thickness). Listing the causes of the hazards is the action where deficiencies or discrepancies are items found to not satisfy the UFC 4-179-02 criteria. A tabular method for recording these actions and steps is prescribed in [Paragraph A2.2.2](#).

A2.2.2. Step 2. Assess the Hazards. This step has four actions:

A2.2.2.1. Assess hazard exposure. Exposure is measured in terms of time, proximity, volume, or repetition (e.g., 1,000 rounds fire weekly).

A2.2.2.2. Assess hazard severity. Determine severity of the hazard in terms of potential impact on personnel, equipment, mission, or activity. Hazard severity is determined by the following severity categories:

A2.2.2.2.1. Category I: Catastrophic (i.e., mission failure, death, system loss)

A2.2.2.2.2. Category II: Critical (i.e., major mission degradation, severe injury, or major system damage).

A2.2.2.2.3. Category III: Moderate (i.e., minor mission degradation, injury, or system damage).

A2.2.2.2.4. Category IV: Negligible (i.e., less than minor mission degradation, injury, or system damage).

A2.2.2.3. Assess probability. Determine the probability that the hazard will cause a negative event of the severity assessed. Probability may be determined through estimates or actual numbers (if available).

A2.2.2.3.1. Probability A – Frequent, daily, often, 10^{-1} or greater frequency.

A2.2.2.3.2. Probability B – Likely, three weeks, occurs several times, 10^{-1} (10%) to 10^{-2} (1%).

A2.2.2.3.3. Probability C – Occasional, six months, will occur, 10^{-2} (1%) to 10^{-3} (.1%).

A2.2.2.3.4. Probability D – Seldom, five years, could occur, 10^{-3} (.1%) to 10^{-6} (.0001%).

A2.2.2.3.5. Probability E – Unlikely, past five years has not occurred, rarely, 10^{-6} (.0001%) or less.

A2.2.2.4. Complete risk assessment: Combine severity & probability estimates to form a risk assessment for each hazard. Assign a risk assessment level based on the combination of procedures in steps A2.2.2.2 and A2.2.2.3. See Figure A2.1.

Figure A2.1. Sample Risk Assessment Matrix.

Risk Assessment Matrix			PROBABILITY*					
			Frequency of Occurrence Over Time					
			A Frequent (Continuously experienced)	B Likely (Will occur frequently)	C Occasional (Will occur several times)	D Seldom (Unlikely; can be expected to occur)	E Rarely (Improbable; but possible to occur)	
SEVERITY*	Effect of Hazard	Catastrophic (Death; Loss of Asset, Mission Capability or Unit Readiness)	I	EH	EH	H	H	M
		Critical (Severe Injury or Damage; Significantly Degraded Mission Capability or Unit Readiness)	II	EH	H	H	M	L
		Moderate (Minor Injury or Damage; Degraded Mission Capability or Unit Readiness)	III	H	M	M	L	L
		Negligible (Minimal Injury or Damage; Little or No Mission Capability or Unit Readiness)	IV	M	L	L	L	L
*See DAFPAM 90-803 for more information.			Risk Assessment Levels					
			EH = Extremely High H = High M = Medium L = Low					

A2.2.3. Step 3. Develop controls and make decisions. Effective control measures reduce or eliminate one of the three components (probability, severity, or exposure) of risk. Decision makers at the appropriate level choose the best control or combination of controls based on the analysis of overall costs and benefits. This step has five actions:

A2.2.3.1. Identify control options: Each control measures should eliminate or mitigate the risk of a hazard. Controls may be applied using multiple means engineering, physical, administrative, or operational methods.

A2.2.3.2. Determine control effects: Select the control options desired for consideration. With controls identified, the hazard should be re-assessed, taking into consideration the effect the control will have on the severity and/or probability. The new estimated value(s) for severity and/or probability and the change in overall risk assessed from the Risk Assessment Matrix should be recorded.

A2.2.3.3. Prioritize the control measures: For each hazard, prioritize those risk controls that will reduce the risk to an acceptable level. The best controls will be consistent with

mission objectives and optimize use of available resources (manpower, material, equipment, funding, and time).

A2.2.3.4. Select risk controls: For each identified hazard, select those risk controls that will reduce the risk to an acceptable level. The best controls will be consistent with mission/activity objectives and optimum use of available resources (manpower, material, equipment, funding, and time).

A2.2.3.5. Make Risk Decisions. Analyze the level of risk for the operation or activity with the proposed controls in place. Determine if the benefits of the operation/activity now exceed the level of risk the operation/activity presents. When a decision is made to assume risk, the factors (cost versus benefit information) involved in this decision should be recorded.

A2.2.4. Step 4. Implement Controls. Implementation requires commitment of time and resources. Once the risk control decision is made and an implementation plan developed for initiating the controls, assets must be made available to implement the specific controls. This step has three actions:

A2.2.4.1. Make the implementation clear to all parties.

A2.2.4.2. Establish accountability and responsibility for implementing risk-control measures. The accountable person is the one who makes the decision (approves the control measures) and hence, the right person (appropriate level) must make the decision.

A2.2.4.3. Provide support to those tasked to implement the control measures.

A2.2.5. Step 5. Supervise and Evaluate. This step involves the determination of the effectiveness of risk controls throughout the operation. There are three actions in this step:

A2.2.5.1. Supervise the implementation of the control measures to ensure controls are effective and remain in place; identify changes requiring further RM; and action is taken to correct ineffective risk controls.

A2.2.5.2. Evaluate the effectiveness of the control measures risk reduction and cost implication. Process evaluation should be systematic. Establish metrics/tools to accurately measure effectiveness.

A2.2.5.3. Provide feedback to continually make improvements to the RM process. Feedback informs all involved as to how the implementation process is working and whether the controls were effective. The feedback loop completes the circular RM process and validates successful risk reduction or identifies the need for additional mitigation actions.

A2.3. Formal Risk Assessment. A formal risk assessment succinctly documents the results of the deliberate 5-Step RM process and supports follow-on decision-making processes. Decision options typically involve determining whether one or more course of action should be pursued (e.g., implementing equipment improvements, safety or warning device improvements, operational improvements, technical improvements, policy/procedure improvements) and whether a risk should be accepted, mitigated, or rejected. A risk assessment supports decision-making processes by objectively identifying a hazard, assessing its risk, thoroughly analyzing potential options for mitigation, and making a recommendation. The DAF Form 4437 can be used to conduct the formal risk assessment. Refer to [Table A2.1](#) and [Figure A2.2](#) through [Figure A2.3](#) for

examples of the 5-Step RM process with some common small arms range discrepancies and a completed DAF Form 4437. Unit commanders should include the formal risk assessment resulting from their RM process when submitting exemption (deviation) requests from design criteria.

Table A2.1. Small Arms Range RM Process Example.

Discrepancy	STEP 1	STEP 2			STEP 3		STEP 4	STEP 5
	Hazard	Severity	Probability	Risk	Control Options	Decision (from Risk Assessment Matrix)	Implement	Supervise/Evaluate
Vertical baffles are not faced with at least 19mm of fire retardant/pressure treated plywood.	Potential to shoot through the baffle and bullets/riochets leave the range containment.	I	D	H	Face Vertical Baffles with 19mm of fire retardant/pressure treated plywood.	Install correct plywood. I,E=M	Install 19mm of fire retardant/pressure treated plywood.	Ensure repairs and materials are in accordance with UFC 4-179-02.
Projectiles impacting sidewalls creating large craters.	Ricochets towards firing line.	II	C	H	Re-position firing points to minimize the projectiles impacting the sidewalls.	Firing points repositioned. In accordance with UFC 4-179-02. Will yield: II,E=L	Reposition firing points in accordance with UFC 4-179-02.	Verify projectiles no longer impact the sidewalls.
Sidewall berm has an opening that is visible to some firing positions.	Bullets leave the range containment.	I	A	EH	Fill in the opening or establish a procedure to not use those firing positions.	Fill opening. Will yield: IV,D=L.	Fill in opening.	Re-inspect to verify opening has been closed and projectiles are longer leaving range containment.
Sidewall berm has an opening that is visible to some firing positions.	Lead pollution, outside of containment.	II	A	EH	Fill in the opening or establish a procedure to not use those firing positions; lead-free ammunition.	Fill opening. Will yield: IV,D=L;	Fill in opening. Prevent rounds from leaving and lead pollution.	Re-inspect to verify opening has been closed and lead pollution is no longer occurring.

Surface water runoff can leave the range.	Lead pollution, outside of containment.	II	C	H	Water monitoring program, including surface water samples and groundwater monitoring wells or use lead-free ammunition.	Lead Free Ammo. Will yield: IV, E=L	Use lead free ammunition.	Ensure lead-free ammunition is used and continue to monitor results from Water Monitoring program.
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Figure A2.2. Sample DAF Form 4437 (Page 1).

DELIBERATE RISK ASSESSMENT WORKSHEET								
AGENCY DISCLOSURE NOTICE: Use of this form is recommended, however, failure to complete a Deliberate Risk Assessment may have a negative effect on mission effectiveness at all levels and lead to failure of preserving assets and safeguarding health and welfare. AUTHORITY: DoDI 6055.01, AFPD 90-8 and DAFI 90-802. PRINCIPAL PURPOSE: Conduct a formal risk assessment and ensure the assessment is properly documented for future evaluation and reference. ROUTINE USES: Used to develop and enhance awareness and understanding of at-risk activities and behavior of personnel both on- and off-duty. SYSTEM OF RECORDS NOTICE: Not applicable.								
1. EVENT/MISSION/TASK OF RISK ASSESSMENT:				CONTROL #:				
A. SHORT NAME (If applicable)				B. START DATE	C. END DATE			
				2025-01-10	2025-06-27			
D. DESCRIPTION Small Arms Qualification Training for Home Station/Contingency/Permanent Change of Station Requirements								
2. PREPARED BY:								
A. LAST NAME, FIRST, MI Smith, John A.			B. RANK/GRADE MSgt		C. DUTY TITLE/POSITION CATM Section Chief			
D. WORK EMAIL john.smith.703@us.af.mil			E. PHONE DSN/COMM DSN: 312-222-1111		F. UNIT 123 SFS			
G. UIC/CIN (as required)			H. TRAINING SUPPORT/LESSON PLAN OR OPORD (as required)					
3. SUB-TASK/SUB-STEP AND RISK ASSESSMENT (Fields expand as needed. Add, Remove and Move Sub-Task/Steps with left side controls)								
SEVERITY Effect of Hazard	Risk Assessment Matrix		PROBABILITY* Frequency of Occurrence Over Time				RISK MANAGEMENT 	
	Catastrophic (Death, Loss of Asset, Mission Capability or Unit Readiness)	I	EH	EH	H	H		M
	Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	II	EH	H	H	M		L
	Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	III	H	M	M	L		L
	Negligible (Minimal Injury or Damage, Little or No Mission Capability or Unit Readiness)	IV	M	L	L	L		L
*See DAFMAN 90-802 for more information. Risk Assessment Levels: EH=Extremely High, H=High, M=Medium, L=Low								
#	A. SUB-TASK/SUB-STEP	B. HAZARD	C. INITIAL RISK LEVEL	D. CONTROL	E. HOW TO IMPLEMENT WHO WILL IMPLEMENT	F. RESIDUAL RISK LEVEL		
1	RM Range Checklist item B.2. LAW UFC 4-179-02, para. 2-3.3.	Ricochet/Backsplash: Vertical, structural support columns are not faced with a minimum of 0.75 in (19mm) fire-retardant plywood.	EH (I, A)	Vertical baffles are faced with 25mm of untreated plywood. Unit is purchasing fire retardant plywood.	How: Submit work order Who: CATM Section Chief	H (III, A)		
2	RM Range Checklist item B.12. LAW UFC 4-179-02, para. 4-10.2.	Ricochets towards firing line: Projectiles impacting sidewalls are creating large craters.	EH (I, A)	Interim: Position shooters on firing line to minimize the projectiles impacting the sidewalls.	How: Instructor brief students/submit work order Who: CATM Section Chief	H (II, B)		
3	RM Range Checklist item B.14. LAW UFC 4-179-02, para. 2-3.3.	Ricochet/Backsplash: Vertical, structural support columns are not faced with a minimum of 0.75 in (19mm) fire-retardant plywood.	EH (I, A)	Vertical baffles are faced with 25mm of untreated plywood.	How: Submit work order Who: CATM Section Chief	H (III, A)		
4	RM Range Checklist item H.10. LAW UFC 4-179-02, para. 4-3.1.2.	The firing platform does not have clear distance for the length of the firing line. Obstruction include: support beams, and and the control tower.	M (III, C)	Instructors will use additional caution when operating in the vicinity of tower and support beams. Students will be briefed on these obstructions.	How: Instructor brief students/instructors Who: CATM Section Chief	M (III, C)		

Figure A2.3. Sample DAF Form 4437 (Page 2).

Show/Hide Help	#	A. SUB-TASK/SUB-STEP	B. HAZARD	C. INITIAL RISK LEVEL	D. CONTROL	E. HOW TO IMPLEMENT WHO WILL IMPLEMENT	F. RESIDUAL RISK LEVEL
+ ▲ - ▼	5	RM Range Checklist item D.5. IAW UFC 4-179-02, para. 3-2.2 and DAFI 31-131.	Barriers are not in place to prevent unauthorized access to range complex.	M (II, D)	Longterm: Install warning signs.	How: Install warning signs IAW DAFI 31-131 Who: 123 CES	L (II, E)
+ ▲ - ▼	6	RM Range Checklist item D.6. IAW UFC 4-179-02, para. 3-2.2 and DAFI 31-131.	Fencing is not in place to prevent unauthorized personnel from gaining access to the range complex.	M (II, D)	Longterm: Install fencing.	How: Install warning signs IAW DAFI 31-131 Who: 123 CES	L (II, E)
+ ▲ - ▼	7	RM Range Checklist item H.7. IAW UFC 4-179-02, para. 4-3.1.2.	The control tower is not placed to the rear of the 14 foot firing platform.	L (III, D)	Longterm: Brief instructors and students on the tripping hazard.	How: Submit work order Who: CATM Section Chief	L (III, D)
+ ▲ - ▼	8	RM Range Checklist item H.11. IAW UFC 4-179-02, para. 5-10.1.	The overhead baffles are not 8 feet above the firing line/ range floor.	H (III, A)	Longterm: Submit work order to install angled baffles 8 feet above the range floor.	How: Install angled baffling Who: 123 CES or contractor	L (IV, E)
+ ▲ - ▼	9	RM Range Checklist item I.2. IAW UFC 4-179-02, para. 5-10.3.	The exhaust fan system is being impacted by ricochets.	M (IV, A)	Longterm: Place a work order to install angled baffling.	How: Install angled baffling Who: 123 CES or contractor	L (IV, E)
G. COURSE OF ACTION							
H. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED HIGH (I-C&D; II-B&C)				I. PREPARER SIGNATURE			
4. ATTACHMENTS (Once the preparer has signed files can be viewed only)						<input type="checkbox"/> Include Attachments	
5. APPROVAL COORDINATION (Add Coordination as Applicable/Limited to 3) <input checked="" type="checkbox"/> Approval Coord 1 <input type="checkbox"/> Approval Coord 2 <input type="checkbox"/> Approval Coord 3							
5.1.A. ORG/OFFICE WG/SE		5.1.B. DUTY TITLE/POSITION Ground Safety Supervisor		5.1.C. NAME, RANK/GRADE Jane Smith, MSgt			
5.1.D. COORDINATION 1 COMMENTS							
5.1.E. COORDINATION 1 ACTION Concur			5.1.F. DATE 2025-01-13		5.1.G. COORDINATION 1 SIGNATURE		
8. RISK ACCEPTANCE AUTHORITY (Once signed form will lock except "Risk Assessment Review" and "Feedback and Lessons Learned")							
A. APPROVAL/DISAPPROVAL OF EVENT/MISSION Approved			B. APPROVER LAST NAME, FIRST, MI			C. RANK/GRADE Lt Col	
D. APPROVER COMMENTS							
E. DUTY TITLE/POSITION 123 SFS/CC		F. DATE 2025-01-25		G. APPROVER SIGNATURE			
7. FEEDBACK AND LESSONS LEARNED							
8. ON-GOING RISK ASSESSMENT REVIEW (Applies to on-going Operations/Activities (limit 10))						<input type="checkbox"/> Include On-Going Risk Assessment	

Attachment 3

SMALL ARMS RANGE INSPECTION CHECKLIST

A3.1. Overview. CATM and other base agencies use the range inspection checklist in **Table A3.1** along with AFI 90-802, DAFPAM 90-803 and UFC 4-179-02, as well as this publication, to conduct range safety inspections and to verify compliance with design criteria. This checklist is not all-inclusive, and units should reference the other sources listed above, along with any guidance provided by manufacturers, to ensure all pertinent items are inspected and maintained. Use RM principles and procedures to determine appropriate actions when problems are identified.

A3.2. Development of Local Checklist. With the assistance of other base agencies (e.g., CE environmental, safety, BE), CATM modifies this checklist to identify items that apply to their specific range, add items that are not already on the list and remove items that are not needed. CATM should update the local checklist annually and when changes occur that may alter work practices or when conditions exist that indicate the potential to cause a health, safety, or environmental risk.

Table A3.1. Small Arms Range Inspection Checklist.

Small Arms Range Inspection Checklist			
Section A. Range Information.			
Range Name/Location:			
Range Type (Partially Contained, Fully Contained, etc.):			
Target Distance(s):			
Calibers/Types of Rounds Approved for Use:			
Section B. Category I: Catastrophic Hazard Severity (Projectile Containment).			
<p>B. Range construction/design should ensure projectiles do not leave the range or range SDZ and should ensure rounds do not produce hazardous ricochets within the range. Answering “No” to the questions in this section indicates a Category I (Catastrophic) hazard severity. Range closure until the discrepancy is resolved is highly recommended. Note: Some older ranges were designed to allow non-direct fired projectiles (ricochets) to leave the range at steep angles because the associated Surface Danger Zone (SDZ) was large enough to contain the bullets, mitigating the risk. For partially contained baffled ranges, if the range has an adequate SDZ, some of the risks associated with non-direct fired projectiles leaving the range, may have already been mitigated. Direct-fired rounds should never escape the range on any type of baffled range.</p>			
	Yes	No	N/A

1.	On a baffled range, is the range constructed to prevent any “Blue Sky” visible from all firing points and positions?			
2.	On a baffled range with vertical baffles, are the baffles faced with approved splatter prevention materials outlined in UFC 4-179-02?			
3.	On a fully contained range are the angled or flat overhead baffles faced with UFC 4-179-02 approved splatter prevention materials within 16.5 ft (5m) from the last firing position?			
4.	On a fully contained baffled range with angled overhead baffles with bottom edges point toward the target line, do the baffles overlap by minimum of 6 inches?			
5.	On a range with an earthen backstop, is the backstop designed to stop a direct fired round by embedding it into the backstop no closer than 6.5 ft (2m) from the top of the backstop?			
6.	If a range has vehicle access points or doors down-range, are these areas constructed in such a way as to not allow access during range operations and to not allow the escape of rounds?			
7.	Are armor piercing, tracer, intentional incendiary munitions, ammunition with energy up to 2,500 foot-pounds (3,390 Newton meters) prohibited from being fired on indoor ranges using metal backstops?			
8.	At indoor ranges, when using a pre-existing building, are all pre-existing openings filled with bricks or masonry?			
9.	On a machine gun tube range, do rounds fired at the maximum elevation permitted by the tube intersect the backstop at least 6.5 ft (2m) from the top?			
10.	If the range floor is concrete, is it constructed of smooth concrete and does it slope toward the target line to eliminate ricochet hazards to personnel firing on the firing line?			
11.	For indoor ranges, are joints and cracks in the concrete floor sealed to prevent accumulation of gun powder residue (explosive and fire hazard)?			
12.	If side containment walls are in place, are they constructed with a surface that prevents ricochets back towards the firing line?			
13.	Are concrete block sidewalls filled solid with grout?			
14.	On a range with vertical, structural support columns, are the columns faced with baffle material to prevent bullets from impacting and damaging the structural support column?			
15.	On an M203 range, when metal targets are positioned on multi-bay ranges, are targets positioned to ensure they do not create a ricochet hazard for other ranges?			
16.	On a range with a bullet trap system, are exposed surfaces within the backstop present a sharp angled surface faced with angled steel facings to ensure bullets are deflected into the deceleration chamber and not back to the firing line. Check for worn or blunt edges that may present a ricochet hazard?			

Section C. Category II: Critical Hazard Severity (Projectile Containment).				
<p>C. Range construction/design should ensure projectiles do not leave the range and should ensure rounds do not produce hazardous ricochets within the range. Answering “No” to the questions in this section indicates a Category II (Critical) hazard severity. Range closure until the discrepancy is eliminated or immediate mitigation should be considered.</p>				
1.	Are large rocks removed from the firing range floor to eliminate ricochet hazards?			
2.	Are ranges built to ensure ground baffles are not used? (mitigate by removing)			
3.	On a baffled range, are the canopy baffles constructed to extend down range far enough to prevent rounds from escaping the range between the first overhead baffle and the canopy?			
4.	On a baffled range, after inspection of the backside of the steel overhead and canopy baffles are the baffles free of any bullet dents or partial penetration?			
5.	On a range with an earthen backstop or side berms, is the backstop or side berm faced with 4 ft (1.2m) of fine soil that is free of rocks and debris and consistent with soil that would pass through a #4 sieve test?			
6.	On a baffled range that includes an earthen backstop, does a line drawn from the leading edge of the firing line to the bottom edge of the last down-range baffle, intersect the earthen backstop at least 6.5 ft (2m) from the top?			
7.	Does the protective construction on continuous walls extend both down range and to the rear of the firing line provide containment of the most powerful ammunition allowed on the range?			
8.	On a machine gun tube range, are the tubes positioned correctly so the muzzle of the weapon is placed at least 6 inches into the tube?			
9.	On a machine gun tube range, are the tubes designed to ensure the muzzle of the gun is as close to the center of the tube as possible?			
10.	When using an optional wall or deflector plate on a machine gun tube range berm, do rounds fired from the gun, at the maximum elevation permitted by the tube, intersect the backstop at least 2 ft (.6m) below the wall or deflector plate?			
11.	On a range with a steel baffles or steel bullet trap system, have all steel plate joints been ground to ensure there are no gaps exceeding 1.6 mm between them or have joints been covered with lap plates of the same material?			
12.	If barricades are made of steel or concrete, are they covered with a soft wood to prevent ricochets?			
13.	If the range floor is pea gravel, is the gravel at least 6 inches deep with less than 10 % of the gravel exceeding 3/8 inch in diameter and does the pea gravel extend from the firing line to the backstop?			

14.	Has the excessive lead test (Rod Test) been conducted within the last 12-months?			
15.	If the backstop fails the Rod Test, have steps been taken, such as mining or adding additional soil, to eliminate the ricochet hazard?			
16.	On an M203 range, are metal targets constructed to ensure rounds do not ricochet back towards the firing line?			
17.	On an impact range, are targets used for other weapon systems positioned so they do not interfere with other training or pose a ricochet hazard?			
18.	On a range with a backstop deflector plates, are exposed steel plate edges chamfered to a 45-degree angle to a fillet approximately 4mm thick?			
Section D. Category II: Critical Hazard Severity (Exterior Range Safety).				
<p>D. Range construction/design should ensure personnel exterior to the range are as safe as possible. Answering “No” to the questions in this section indicates a Category II (Critical) hazard severity. Range closure until the discrepancy is eliminated or immediate mitigation should be considered.</p>				
1.	On an impact range, is the SDZ equal to 100 percent of the maximum range of the most powerful ammunition authorized for the range?			
2.	On a machinegun tube range, is the SDZ at least 700 meters?			
3.	On a partially contained baffled range, is the SDZ equal to 50 percent of the maximum range of the most powerful ammunition authorized for the range?			
4.	Does the vertical danger zone (VDZ) meet the minimum required height for the most powerful ammunition used on the range?			
5.	Are barriers and signs in place to prevent unauthorized access into the firing range SDZ?			
6.	Are fences placed to prevent unauthorized personnel access into the firing range complex?			
7.	Are the range complex and the SDZ(s) reflected on the base master plan map?			
8.	Is the maximum range/caliber of the most powerful ammunition authorized for use on the firing range clearly posted for all personnel to see?			
9.	If fire doors are required, are all doors equipped with hardware to allow for opening from the inside only?			
10.	On a new range, are all doors or windows prohibited forward of the firing line?			
Section E. Category III: Moderate Hazard Severity (Environmental).				
<p>E. Range construction/design should eliminate, reduce, or mitigate environmental hazards such as lead, heavy metal and other contaminants/hazards that are produced during the operation of small arms ranges. Answering “No” to the questions in this section indicates a</p>				

<p>Category III (Moderate) hazard severity and risk of environmental contamination. Range closure may be considered until the discrepancy is eliminated, but immediate mitigation should be accomplished.</p>				
1.	Are fired rounds, lead dust, lead fragments and other residue contained to ensure they do not land in waterways, wetlands, or other areas where the water is unprotected or processed through non-filtered drains (primary impact area and/or range fan)?			
2.	Is the range floor graded properly to ensure standing water does not collect?			
3.	Is surface water runoff from the range floor prevented from entering surface water bodies?			
<p>Section F. Category III: Moderate Hazard Severity (Occupational Health).</p>				
<p>F. Range construction/design should eliminate, reduce, or mitigate occupational lead contamination and exposure to health hazards. Answering “No” to the questions in this section indicates a Category III (Moderate) hazard severity and risk of occupational health hazards/unacceptable exposure to hazards for shooters and range personnel. Range closure may be considered until the discrepancy is eliminated, but immediate mitigation should be accomplished.</p>				
1.	Has the CATM Section Chief coordinated with BE to ensure an evaluation of the ventilation system has been accomplished and that the system is operating properly to adequately control potential hazards?			
2.	When enclosing the firing line on baffled ranges is the airflow and quantity tested to ensure sufficient airflow and ventilation is still maintained?			
3.	Are the range floors, wall, and surfaces free of carpet or other material (i.e., blown on acoustical material) where lead dust can be trapped, or which is not conducive to lead dust removal?			
4.	Perform smoke test at each lane to validate the air flows down range away from the firing line.			
<p>G. Category III: Moderate Hazard Severity (Sound/Noise Exposure).</p>				
<p>G. Ranges should be located where environmental nuisance noise is as low as possible and constructed to mitigate occupational noise exposure. The BE Flight/Element determines the level of hearing protection required, based on range conditions and sound levels during firing. Answering “No” to the questions in this section indicates a Category III (Moderate) hazard severity and occupational health risk for shooters and range personnel. Range closure may be considered until the discrepancy is eliminated, but immediate mitigation should be accomplished.</p>				
1.	Is ambient noise level below 85 dBA?			
2.	Is the range located where environmental nuisance noise impact adjacent facilities and their mission?			
3.	Are instructors and shooters required to wear hearing protection during range live-fire operations?			

4.	Has the CATM Section Chief implemented/enforced the BE HRA recommendations to ensure hearing protection of all personnel?			
5.	Has the CATM Section Chief coordinated with BE to ensure that hearing protection provides adequate protection?			
6.	Is sound absorption material in indoor ranges installed to reduce the reverberation rate to below 1.3 seconds?			
7.	Inspect the condition of interior sound absorbing materials.			
H. Category III: Moderate Hazard Severity (Ground/Range Safety).				
H. Range construction/design should eliminate, reduce, or mitigate potential for injuries to range personnel or shooters. Answering “No” to the questions in this section indicates a Category III (Moderate) hazard severity and increased risk of safety mishaps. Discrepancies should be eliminated or mitigated as soon as possible.				
1.	Is the depth of the firing platform at least 14 feet (4.3m)?			
2.	Is there 2 feet (.6m) of space between the outermost shooting lanes (first and last firing point) and the sidewalls?			
3.	Are lighting levels provided as specified in UFC 4-179-02?			
4.	Is the firing line constructed to eliminate tripping hazards?			
5.	Does the range floor slope to the target line to ensure proper drainage?			
6.	Are firing positions on the range 5 feet (1.5m) from center to center?			
7.	Is the firing range control tower/booth placed to the rear of the firing platform to eliminate firing platform encroachment?			
8.	Is the centerline of targets between 6 in (.15m) and 60 in (1.5m) above the firing platform?			
9.	Are targets for each firing lane fully visible from all shooting positions on the designated firing point?			
10.	Does the placement of the control tower allow for an unrestricted view of all firing positions on the firing line, as well as the entire down range area of the range?			
11.	Is the bottom of the canopy baffle and overhead baffles at least 8 ft (2.4m) above the firing line/range floor to allow a clear and unobstructed view of the targets?			
12.	On a machine gun tube range, are the tubes separated a minimum of 12.14 feet from center to center?			
I. Category IV: Negligible Hazard Severity (Utilities).				
I. Range construction/design should ensure utilities are protected from damage. Answering “No” to the following questions indicates a Category IV (Negligible) hazard severity and risk of facility damage. Discrepancies should be eliminated or mitigated as soon as possible.				

1.	Are all utilities that are located down range, protected from direct-fired rounds and ricochets?			
2.	Are the openings for heating, ventilation and air conditioning located behind baffles to prevent damage caused by bullets?			
3.	Are new buildings constructed to ensure all pipes and conduits are concealed in the walls, above ceilings, under floors, or behind protective baffles?			