

21 November 2017

Installation
RANGES, TRAINING AREAS, AND TRAINING FACILITIES

FOR THE COMMANDER:

OFFICIAL:

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History. This publication has major revisions. The portions affected by this major revision are listed in the summary of change.

Summary. This regulation prescribes United States Army Maneuver Support Center of Excellence (MSCoE) policy for the scheduling and safe conduct of training at Fort Leonard Wood (FLW) ranges, training areas, and training facilities.

Applicability. This regulation applies to all units and personnel conducting training on the FLW Military Reservation. Shooting ranges located at the FLW Outdoor Adventure Center are not subject to all requirements listed in this regulation since their purpose is recreational, not training. The Outdoor Adventure Center will have, in effect, standing operating procedures (SOPs) for range safety and use and coordinate these through Range Operations and the Maneuver Support Center of Excellence (MSCoE) Safety Office (MSO) for approval. Procedures for recreational ranges will be covered in these SOPs and may vary from procedures outlined in this regulation.

Proponent and Exception Authority. The proponent of this regulation is the Directorate of Plans, Training, Mobilization, and Security (DPTMS).

Supplementation. Supplementation of this regulation is prohibited without prior approval by Headquarters, MSCoE.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Commander, MSCoE (IMLD-PLT), Fort Leonard Wood, MO 65473-5000

Distribution. Electronic medium only and posted on the FLW Web site.

Summary of Change

to

FLW Reg 210-14, Ranges, Training Areas, and Training Facilities

FLW Reg 210-14, 19 October 2009 has undergone major revisions.

- Updates the grade level for the OIC and RSO for small arms and machine guns (paragraph 1-4).
- Adds range certification program (paragraph 1-5).
- Updates scheduling procedures (Chapter 2).
- Updates the use of scheduling of simulators (EST 2000, call for fire trainer, VBS2 & RVTT, and dismounted Soldier), (paragraph 2-7).
- Updates safety, special requirements and limitations (Chapter 3).
- Adds establishing a maneuver box (paragraph 3-8).
- Adds reduced, covert and blacked-out lighting operations (paragraphs 3-11d and e).
- Adds noise complaint procedures (paragraph 3-28).
- Updates Chapter 5, airspace and airborne operations.
- Updates Appendix B, range facilities.
- Appendix C changed to local training areas (LTAs).
- Appendices C through H are re-lettered to align them with the revised text in this regulation.
- Deletes Appendix G, environmental permit compliant and replaced with range and training area map with depiction of cantonment.
- Adds Appendix G, range and training area map with depiction of cantonment area.
- Updates Appendix L, CBRN hasty decontamination training sites.
- Adds Appendix O, tornado procedure guidelines on live-fire ranges.
- Adds Appendix P, standing operating procedures (SOP) for small arms range safety area (SARSA).
- Adds Appendix Q, Army aircraft; aviation route structure.
- Adds Appendix R, Army aviation; night vision device (NVD) operations.
- Adds Appendix S, Army helicopter; aviation routes.
- Adds Appendix T, Army helicopter training areas.

- Adds Appendix U, aviation route structure.
- Adds Appendix V, civilians on ranges and training areas.
- Adds Appendix W, noise complaint form.
- Adds Appendix X, environmental compliance.

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Chapter 1

INTRODUCTION

1-1. Purpose

- a. To enable realistic combat readiness training through proper utilization of available facilities on the FLW Military Reservation consistent with appropriate environmental regulations, procedures, and safety measures to prevent injury to personnel or damage to property.
- b. To establish standard terminology pertaining to range operations.
- c. To establish procedures for requesting the use of ranges, training areas, maneuver areas, and training facilities.
- d. To establish responsibilities and procedures for the safe and effective conduct of training on ranges, training areas, maneuver areas, and training facilities under the terms of current environmental regulations and permits.
- e. To provide a list of range facilities (see Appendix B), local training areas (see Appendix C), training areas (see Appendix D), MOUTs/TTBs (see Appendix E) and bivouac sites (see Appendix F), available at FLW.

1-2. References

Referenced publications and forms are in Appendix A.

1-3. Explanation of acronyms, abbreviations and terms

Acronyms, abbreviations, and special terms used in this regulation are explained in the glossary.

1-4. Responsibilities

- a. G-33, (OPCON) Combat Training Company (CTC).

- (1) Provides general supervision, control, and coordination of all cadre-operated BRM/HG ranges and training areas on FLW.

- (2) Coordinates with DPTMS and the DPW Environmental Division to ensure the protection of training resources, compliance with FLW Environmental Permit(s), Environmental Awareness (protection of natural and cultural resources in compliance with environmental laws and regulations), execution of the Vegetation Fire Management Program, and all other natural resources field operations, and actively support the Integrated Training Area Management (ITAM) program.

- b. Range Operations.

- (1) Reports any serious incidents to the Garrison Commander, DPTMS, MSO, and Directorate of Emergency Services, as appropriate.

- (2) Provides the command and control and overall responsibility for the safe operation and conduct of all ranges and training areas.

(3) Coordinates with DPTMS and Environmental Division, DPW, to ensure protection of training resources, compliance with FLW environmental permit(s), Environmental Awareness (protection of natural and cultural resources in compliance with environmental laws and regulations), execution of the Vegetation Fire Management Program and all other natural resources field operations, and actively support the ITAM program.

(4) Conducts general inspections of ranges and training areas to—

(a) Ensure that committees, units, and agencies conducting training comply with applicable safety regulations.

(b) Ensure that responsible units and the units that train on ranges and training areas properly maintain those ranges and training areas.

(c) Inspect the daily risk assessment and ensure that the range SOP is on hand.

(d) Ensure that adequate communications are available at each range and training area. Coordination will be made with DPW, Logistics Readiness Center (LRC) and the Network Enterprise Center (NEC) for installation of new communication equipment or repair of existing equipment as required.

(e) Check real property facilities, latrines, grounds, and signs for maintenance requirements and coordinate maintenance and repair through Range Maintenance.

(f) Validate that OICs have received proper clearances when opening a range for live-fire.

(g) Validate that OICs and Range Safety Officers are range safety certified.

(5) Coordinates with and advises recreational shooting range managers on safety, range procedures, and other issues pertinent to range operations.

(6) Forwards requests received from units concerning maintenance of facilities within the range complex through Range Operations to DPW.

(7) Coordinates with the General Leonard Wood Army Community Hospital (GLWACH) to ensure ambulance coverage for the entire range complex at all times.

(8) Ensures that a member of Range Operations remains on duty 24 hours a day.

(9) Coordinates with the Fire Department on all fire protection matters, including the investigation of all fires on ranges and training areas.

(10) Investigates all serious incidents on the ranges and training areas and notifies the G-33, CTC, DPTMS, MSO, and Directorate of Emergency Services, as appropriate.

(11) Maintains a range clearance log when firing is being conducted on any range.

(12) Ensures that Range Operations acquires and releases restricted airspace R4501 A through H with Waynesville Regional Airport at Forney Field or Kansas City Center, Federal Aviation Administration (FAA), as required.

(13) Maintains, in conjunction with ITAM and the Natural Resources Branch, DPW, an overlay depicting current training area boundaries, off-limits areas, environmentally sensitive areas and environmentally sensitive areas involving permit compliance provisions, impact area range fans, indirect firing points, observation posts, and impact areas.

(14) Coordinates maneuver area usage with the day and night firing schedule.

(15) Disseminates wet bulb globe temperature (WBGT) reading and heat categories.

(16) Disseminates post wind-chill temperature equivalent reading and cold categories.

(17) Disseminates fire danger classification received from the Natural Resources Branch DPW, and Fire Department, as required, and implements the Fire Danger Class Restriction Chart at Appendix H.

(18) Grants training area and range occupation and clearance to units.

(19) Monitors all vehicles and foot marches as defined in paragraph 3-19 of this regulation.

(20) Monitors all FLW environmental permit provisions affecting ranges and training areas.

(21) Maintains coordination with the MSO on all safety matters relating to range and live-fire operations, as appropriate.

(22) Develops and implements an on- and off-post range safety educational program in coordination with the MSO; Public Affairs Officer (PAO); Quality Assurance Specialist; Ammunition Surveillance (QASAS); Provost Marshal (PM); and local Explosive Ordnance Detachment (EOD) unit commander.

(23) Ensures that selected Range Operations personnel receive range safety training. At least one member of the Range Operations organization should be a graduate of the Army Range Safety Course. When the UXO recognition training program is implemented, at least one member of the Range Operations organization, and other appropriate personnel, should be UXO qualified through training provided by the EOD.

(24) Monitors training, in coordination with the using unit, to ensure that all unit activities are in compliance with applicable environmental regulations. Where applicable, Range Operations will maintain meteorological and blasting records in support of these environmental regulations.

(25) Monitors the range complex amnesty point.

(26) Acts as the point of contact (POC)/proponent for site or development of new training areas and ranges.

c. Range Operations personnel only will coordinate with EOD personnel for the destruction/removal of dud/unexploded ordnance (UXO) on ranges and in artillery/mortar impact areas. A dud/UXO log will be maintained at Range Operations.

d. Range OIC. The Range OIC must—

(1) Be in the rank of E-6 (small arms and machine guns) or above (civilian GS-7 or above) (see Chapter 4-1). EOD team leaders will assume duties of OIC for all EOD operations.

(2) Be familiar with OIC duties outlined in DA Pam 385-63/MCO 3570.1C, Chapter 1-6.

(3) Be responsible for the overall safe conduct of training and the proper use of facilities.

(4) Be physically present on the firing range/training area.

(5) Appoint a Range Safety Officer (RSO)/Smoke Control Officer (SCO) to help perform safety responsibilities. Additional Assistant Range Safety Officers (ARSO) may be appointed as required (see AR 385-63/MCO 3570.1C, and DA Pam 385-63).

(6) Determine when it is safe to fire.

(7) Supervise the procedures for misfires, hang-fires, and cook-offs.

(8) Open and maintain communication with Range Operations by radio (primary) or phone (secondary) and ensure that qualified personnel monitor communications at all times.

(9) Supervise, control, and conduct all activities on the range. This includes authorization to retain the company for police of the range after training is finished.

(10) Ensure that each range has an SOP, including a properly documented DD Form 2977 (Deliberate Risk Assessment Worksheet).

(11) Ensure that the RSO/SCO possesses a current FLW Form 377-1 (Range Safety Officer Card) and is informed of his/her duties.

(12) Ensure that only authorized firing is conducted.

(13) Maintain accountability of, ensure proper storage of, and safeguard all ammunition and explosives.

(14) Practice supply discipline. Do not remove ammunition from sealed containers earlier than is necessary to prepare it for firing. Ensure ammunition is not wasted to avoid "live ammunition turn-in."

(15) Ensure that a range facility is safe and in good working order before training begins.

(16) Report major maintenance requirements to the responsible unit. If range is inoperable, notify Range Maintenance.

(17) Report major environmental sustainability issues such as excessive erosion and areas showing signs of stress from heavy use to ITAM office.

(18) Ensure that personnel do not violate "no smoking" areas.

(19) Ensure that the range flag is raised prior to opening a range and red lights on the flagpole and range limiting panels are visible on night ranges. Notify Range Operations immediately if a red light is inoperative.

(20) Ensure that weapon malfunctions, accidents involving ammunition or explosives, and other serious incidents are reported immediately to Range Operations. Ensure the preservation of the site and that equipment is only released upon the approval of Range Operations, Safety Director, and QASAS.

e. RSO. The RSO's sole responsibility is safety, and his place of duty is the firing line (no coaching or individual training except at Range 13). RSOs will not be assigned any additional duties. Be in the rank of E-5 (small arms or machine guns) or above (civilian GS-5 and above) (see Chapter 4-1). Civilian contractors may serve as RSO ONLY. The RSO will:

- (1) Refer to Chapter 4-1 of this regulation.
- (2) Be familiar with duties outlined in AR 385-63, Chapter 1-9.
- (3) Have a current FLW Form 377-1 in his possession.
- (4) Be responsible for the final determination before firing that:
 - (a) Weapons are properly positioned.
 - (b) Only authorized ammunition, to include proper charge, fuze, and fuze settings are used.
 - (c) Firing settings and weapons are within prescribed safety limits and verified.
 - (d) Appropriate safety measures are taken and the surface danger zone (SDZ) is clear of personnel.
 - (e) Personnel engaged in firing and within noise hazardous areas will wear authorized and properly fitted hearing protection.
- (5) Order an immediate cease-fire or check-fire when any unsafe condition is observed.
- (6) Verify to the OIC and Range Operations that all weapons are clear upon completion of firing, and record duds/UXO and their exact six-digit coordinate location.
- (7) Brief all personnel on dud/UXO areas and the danger of duds/UXO.
- (8) Confine all firing to the established limits of fire and impact areas.
- (9) Ensure that personnel are alert for aircraft, wildlife, and other personnel in impact areas.
- (10) Ensure that ammunition is drawn only on the command of the OIC, and confirm accountability of all expended and UXO ammunition or demolitions.
- (11) Ensure weapons are loaded only on the command of the RSO or tower personnel.
- (12) Ensure that weapons not in use on the firing line have the magazines removed, bolts locked to the rear (or forward with a chamber plug), and placed on "safe."
- (13) Ensure that there is no running on the firing line. Running is not permitted on the firing line except on ranges that are specifically designed to incorporate other training.

(14) Ensure that no personnel move in front of the firing line until all weapons that are on status “**green**” have been cleared, checked, and personnel on the firing line are instructed to move forward by the RSO or tower personnel.

(15) Ensure that all weapons are on status “**green**,” cleared and that personnel have no live/blank ammunition, expended brass, or residue in their possession prior to departure from the range. See Range SOP for range clearance procedures.

f. Training Unit Commander. The training unit commander will determine the use of chamber plugs on the ranges. Soldiers training on the convoy live-fire range (CLFR) will not use chamber plugs at any time during training.

g. SCO. There will be a range safety-certified individual (E-6 or above or civilian GS-7 or above) present on site whenever smoke training operations are conducted. This is not only for ranges but also for units that conduct smoke operations as part of a field training exercise (FTX). The SCO will be reported to Range Operations prior to opening an area for training. The SCO is responsible for enforcing paragraph 3-9 of this regulation and, with the RSO, for ensuring that minimum safe distances are strictly adhered to and discrepancies are promptly reported to Range Operations.

1-5. Range certification program

a. IAW AR 385-63/MCO 3570.1C; the range safety certification program will be integrated into organizational training.

b. Once satisfied through training and testing, individuals are qualified to perform the duties of range officer-in-charge (OIC) and range safety officer (RSO) for demolition, hand grenades or rappelling (as required), company commanders will provide a copy of their certification memorandum to Range Operations.

c. The Range Officer (RO) will provide personnel to conduct the installation level OIC/RSO certification. All OIC/RSO candidates will attend one of the twice a month (1st and 3rd Wednesdays of each month). Range Safety Briefing and provide a copy of their OIC/RSO certification memorandum signed by their unit commander.

d. The Range Safety Briefing is one hour in duration and is immediately followed by a written examination. All candidates must achieve a minimum score of 70% in order to receive a Range Safety Card, FLW Form 377-1; issued by the Range Operations and valid for 1 year. Additional certification training is required for hand grenade, demolition, or rappelling.

e. Range Operations and the MSCoE Safety Office (MSO) will monitor the effectiveness of the installation range safety certification program.

1-6. General

a. This regulation applies to all personnel entering or using ranges, training areas, or facilities on FLW. Commanders are responsible for ensuring that all firing and usage of training areas is conducted in compliance with this regulation, and other regulations applicable to the range and training area complex.

b. Range Operations supervises and enforces installation range safety and coordinates range use, maintenance, modification, and installation of ranges and training facilities in accordance with (IAW) this regulation and the policies of the Commanding General (CG), MSCoE. Range Operations has final approval for all training conducted on the range complex.

c. Range Operations will brief personnel of units visiting FLW on the proper use of installation ranges prior to range usage. This will include an ITAM program sustainable range briefing.

d. The range and training area map is at Appendix G and is available from the fire desk (graphic mode) at Range Operations. Military users may also request hard and/or digital copies from ITAM, located at building 5260.

e. Recreation area maps are published separately and are available at the Outdoor Adventure Center, Building 2290.

1-7. Restricted areas

a. All ranges, training areas, and impact areas are restricted. Entrance to these areas is prohibited without proper clearance from Range Operations.

b. Range Operations procedures for authorizing downrange access are provided below:

(1) The following procedures provide a safe method of going downrange for personnel with a valid need to do so. These procedures will be followed by all personnel entering potential impact areas. This includes all ranges that are active and areas that could become active if an unscheduled range is opened.

(a) Authorization to go downrange.

1 Call or visit Range Operations to request permission from the Range Operations Officer to go downrange.

2 The firing desk technician will notify the OIC/NCOIC to cease-fire.

3 The OIC/NCOIC will ensure that the firing lines are cleared and weapons are on status “**green**” (weapon cleared and on safe; magazine out of weapon; and finger off the trigger). Every weapon must be in the weapon rests or on the ground, and all personnel must leave the firing line. Firers will stay in the area designated by the safeties or (when on the convoy live-fire range) truck/track commanders. No one is allowed to enter the impact area. On the Convoy Live-fire Range, safeties will ensure that all weapons are in “**green**” status prior to exiting the dismount engagement area to mount back on the vehicles.

4 The firing desk technician will log the name(s) of personnel going downrange and the clearance window in the firing desk technician log.

5 The firing desk technician will annotate the affected range/training area and the time of cease-fire in the Range Facility Management Support System (RFMSS) and issue clearance to go downrange.

(b) Clearing personnel from downrange.

1 The supervisor or person receiving access will call or visit Range Operations to report their mission is complete and all personnel are present from downrange.

2 The fire desk operators will annotate in RFMSS and notify the OIC/NCOIC on the affected range that the range is clear to fire.

(2) Under no circumstances will personnel proceed beyond the firing line and into an impact area before coordinating with Range Operations.

c. Permanent dud/UXO impact areas are located within Ranges 10, 19, 25, 36, 50 and the old hand grenade range (North of Range 31 - Grid Square 7373) and are unsafe for entry. For Range 36, you must have approval by and be escorted by EOD personnel. Entry into these areas is strictly prohibited except in an emergency and then only with the approval of Range Operations and escorted by EOD. The perimeters of these areas are marked with red, black, and white signs reading "Danger-Impact Area-Keep Out" or "Dud/UXO Impact Area."

d. For non-training events see paragraph 3-9, Recreational Activities, and paragraph 3-18, Environmental and Natural Resources, as well as Range Operations.

e. Personnel desiring access to historic cemeteries located outside of the cantonment area will coordinate with Range Operations and the Natural Resources Branch, DPW.

f. Firebreaks are off-limits to all vehicles. Firebreaks are not harden. Only vehicles associated with a fire fighting are allowed entry by Range Operations.

1-8. Deviations

a. Requests for deviations to this regulation or other applicable regulations will be submitted a minimum of 90 days in advance through Range Operations, DPTMS, and G-33 to Commander, MSCoE (IMNE-LNW-PLT), Fort Leonard Wood, Missouri 65473-5000. There is no assurance that such requests will be approved. Waivers may be requested on a case-by-case basis for each event or as a blanket waiver for the entire fiscal year. Blanket waivers must be renewed annually. Approved waivers will be present on the range/training area during training.

b. Deviations to training support packages (TSP), programs of instruction (POI) or standing operating procedures (SOP) that have an impact on range operations must be submitted in writing through Range Operations, DTPMS, G-33 and Combat Training Company (CTC), a minimum of 21 days prior to the training event. Deviations to TSP/POI will void the range composite risk management assessment; therefore, the training unit will provide a composite risk management assessment approved by the training unit chain of command. The residual risk cannot be lower than the original range composite risk management assessment.

Chapter 2

SCHEDULING OF RANGES, TRAINING AREAS, AND TRAINING FACILITIES

2-1. Scheduling procedures

a. EOD is not required to schedule emergency ordnance disposal, however, coordination with Range Operations must be conducted prior to the event.

b. Units training at FLW, training events at all ranges, training areas, bivouac sites, maneuver areas, rappel points, firing points, drop zones, observation points, and TADSS operational simulation trainers must be scheduled through DPTMS Scheduling Branch utilizing the modernized Range Facility Management Support System (RFMSS).

c. RFMSS is an internet/web-based software program that allows DPTMS Range Operations Scheduling Branch to manage FLW training resources. It also allows units that use FLW shared training resources the ability to request, reserve and monitor their scheduled training. Access to FLW RFMSS is managed by the FLW RFMSS functional administrator (FA).

(1) To request a new user account: Go to the below link (this information is also on the RFMSS log in page); **CAC users** <https://rfmssbackup.belvoir.army.mil/leonardwood/pages/login.aspx> **Non-CAC users** <https://rfmss.belvoir.army.mil/leonardwood/pages/login.aspx>. Once the RFMSS login page populates, select request new account and complete all of the pertinent information. Once completed, click submit. In order to activate your requested account, you must send an email through your BN/BDE Scheduler requesting that your account be activated.

(2) Detailed instructions are provided in the RFMSS Scheduling Standard Operating Procedures (SOP). A copy of the SOP is stored in the library menu on the home page (main menu) screen in RFMSS. Users can view and/or print this document.

(3) If you are having trouble requesting a new account contact the DPTMS Range Operations Scheduling Branch (573) 563-5197.

d. All training events within the MSCoE Plaza Complex (Hoge Hall, Lincoln Hall, Thurman Hall, and Clarke Library) must be scheduled through RFMSS and/or the G-3 Registrar office using their approval procedures. Contact the Registrar at (573) 563-8023.

e. The Museum personnel are responsible for processing RFMSS request for facilities located within the Museum complex.

f. Resources for annual events (for example, conferences, changes of command, or retirement ceremonies), will be submitted in RFMSS no earlier than (NET) 1 year and no later than (NLT) 6 months prior to the event (NOTE: only one POC for each event). Early submission is necessary to ensure that facilities are available.

g. All non-tenant units/agencies (not stationed at FLW) will schedule training through the DPTMS Non-Tenant Unit Training Coordinator/Reserve Component Operations at (573) 563-4073. The Standing Operating Procedures (SOP) describes procedures to support non-tenant units desiring to train at Fort Leonard Wood. A copy of the SOP is stored in the library menu on the home page of RFMSS. Users can view and/or print the document.

h. Contact the Public Affairs Office to receive guidance in order to receive CG, MSCoE, approval for the use of training facilities by schools, local and state government agencies, organized clubs, and civic associations. Requests will be submitted IAW Chapter 4-3 and Appendix V, civilian personnel on ranges/training areas. Request will comply with Department of Defense (DoD) and Department of the Army (DA) regulations and directives governing the use of Federal property by civilian activities.

i. Units who desire to use ranges and training areas will submit their requests into the FLW RFMSS. Requests must include location, event, date/time and number of personnel to be trained; weapons and

DODIC's are required under the WPNS and AMMO TAB (Demo & Pyro are listed as weapons) for all fire events. In addition, any coordination instructions must be included in the communication block of the request. Request only those areas actually required for the date and time required. Blanket requests will not be accepted.

j. Requests will be complete and submitted without conflicts. Events will be identified as specifically as possible. Other than bivouac and FTX, requests for facilities longer than a 24-hour period are not allowed without approval.

k. It is the responsibility of the requesting unit to monitor the status of their requests. Upon submission, requests are assigned a Range Operations Number Identifier (RCNI). Appendix I, identifies the codes used to provide the status of the request.

(1) Units must never assume that their requests are approved. Requests submitted but not placed in a reserve status are not justification for the unit to use the requested facility. Units must monitor and follow up on the status of their requests, if request is not in a reserve status, initiate coordination to resolve any discrepancies.

(2) A unit cannot bump a unit that has already submitted a request, no matter what level the request is at.

(3) Scheduling priorities are based on the Command Training Guidance (CTG). However, certain events may assume equal consideration or take priority over previously reserved requests. Examples of these events are real world contingencies, mobilization, range maintenance, EOD clearance operations and those activities directed by the CG, MSCoE.

(4) Excessive land or facility requests that clearly exceed requirements, must be justified by the unit. Land and training resources are limited and must be managed in a responsible manner.

l. Request for "same day" of training must be submitted via email to DPTMS Range Operations Scheduling Branch. Any cadre supported facilities require G-33 approval if request under 2 weeks. See Appendix J of the RFMSS SOP for cadre supported facilities.

m. Reserved RFMSS requests only provide access to facilities on the date/time facility is reserved. It does not secure logistical support or personnel.

n. Surrounding area access is not granted upon reserved requests for ranges, training areas, maneuver/hunting areas, bivouac sites, rappel points, firing points, drop zones, or observation points. Area access is granted only by a reservation for that specific MA, TA or range.

o. Units must conduct direct coordination with the range cadre or restricted site cadre NLT 72 hours prior to scheduled training.

p. Range Operations fire desk technician's monitors resources reserved for the day of training. Units will contact Range Operations via Land Mobile Radio (LMR) or FM to occupy a training facility. Units that fail to occupy reserved facilities will be reported as a no-show. Coordination can be made with Range Operations in the event of unusual circumstances.

q. Units must request artillery or mortar firing areas by their designated firing points (see Appendix B). Range Operations will verify all firing data and safety fans generated by the firing unit prior to the request being placed in a reserve status.

r. Gammon Field is used only for changes of command, changes of responsibility, graduation ceremonies, and installation events.

s. No unit will request for another unit, any requests of this nature will be disapproved.

2-2. Changes to reserved training

a. Changes to reserved scheduled training are not authorized without approval from the appropriate commander.

b. Changes will be made only if they do not conflict with other unit training and are IAW and compliant with this regulation and FLW/DPTMS RFMSS Scheduling SOP.

c. Changes to reserved training or late requests inside the 2-week window will have approval from the appropriate battalion commander.

d. Cadre supported resource requested under 2 weeks from the training date require approval by the battalion commander, G-33, additionally, for live-fire ranges; restricted airspace, and ammunition must be coordinated.

e. Coordination for airspace, ammunition and the appropriate approval level granted is required at the time the change request is submitted via email. A new request will not be submitted in RFMSS as the original request will be modified by DPTMS Range Operations Scheduling Branch.

f. All coordination and approvals will be in the body of the email request (NO ATTACHMENTS). The brigade level scheduler will submit the change request to DPTMS Range Operations Scheduling Branch using the correct 414 change request format (Appendix B, FLW/DPTMS RFMSS Scheduling SOP for format).

g. DPTMS Range Operations Scheduling Branch will process requests received after 1400 hours on the following workday. These requests must also comply with conditions outlined in 2-2b.

h. Maneuver areas will not be reserved within 24 hours, due to recreation activities taking place in those areas that are open for recreation.

2-3. Late requests

a. A new request will be submitted (may be added to existing RCNI) if the training has not been reserved. Unit will comply with paragraph 2-2.

b. After all coordination has been made, the unit will submit a new RFMSS request with battalion commander approval. Format memo portion of the email coordination request as follows:

- Request Control Number Identifier (RCNI):
- Date /time group (DTG):
- Facility:
- Event:
- Request Change to:
- DTG:
- Facility:

- Event:
- Justification:

2-4. Co-use of training facilities

a. Units requesting to occupying a training facility where another unit already has this facility requested/reserved requires a co-use agreement. In any case, the approving authority for a co-use agreement rest with the commander of the first unit that requested the facility.

b. Requests for co-use will be made by email. This allows for date/time confirmation and POC information. The co-use approval is required to be cut and pasted into the RFMSS request. If the facility is a cadre supported facility and it is requested under 2 weeks, the co-use approval is required to be sent to G-33 along with the request for under 2 weeks cadre support. The unit is required to submit a RFMSS request (on an existing RCNI, if possible) and paste all required approvals in the communication block of the request prior to forwarding the request to the next level. Co-use agreement format is as follows:

- Unit Identification (with POC name & phone number)
- Facility number
- Description of training to be conducted
- Duration of training (beginning and ending dates/times)
- Number of Soldiers to be trained
- Number and type of vehicles to be used during training
- Ammunition and pyrotechnics to be used during training

c. For all training resources, co-use requests will be from the commander of the requesting unit, to the commander of the unit that has the training resource reserved/first requested. After co-use is grated, the requesting unit will submit the RFMSS request and paste the co-use approval in the communication block of the request.

d. Units jointly occupying a training facility are responsible for the police and maintenance of the area for which they occupy. All units jointly occupying a training facility will occupy through Range Operations. Units will comply with all FLW regulations and ensure the safety of personnel and protection of the environment.

2-5. Installation requirements

a. If the installation requires a resource previously reserved by a unit, DPTMS Range Operations Scheduling Branch will notify (in writing) the brigade-level scheduler. Units may submit requests to move training to an alternate facility, if open. Requests must be received within 3 working days after notification, follow the guidelines below:

- (1) During this period, the affected unit will determine an alternate site/date for training.
- (2) Request will only address facilities removed by the installation.

b. DPTMS Range Operations Scheduling Branch will assist the affected unit in securing training on new/date time. Another training unit will not be removed to accommodate displaced unit unless the reserved unit agrees to move. If a unit agrees to be displaced, they must notify DPTMS Range Operations Scheduling Branch via email through the brigade scheduler. Agreeing unit will follow the same guidelines of this paragraph.

- c. Exceptions will be made if the displaced unit will not have time left to recoup training.
- d. Units affected by these events will be exempt from 2-2b and 2-2e.

2-6. Weather-related cancellations

a. Training will not be cancelled and rescheduled based on forecasted inclement weather conditions. Because of the unpredictability of Missouri weather and the fact that there are procedures in place to ensure that units are not considered no-shows because of inclement weather, cancelling and rescheduling training based on forecasts is not an efficient or effective use of scheduling resources.

b. The unit commander, executive officer or 1SG will determine if training should be cancelled due to weather. Once the decision to cancel is made the unit commander, executive officer or 1SG will notify Range Operations to cancel their reservation due to weather.

c. Requests to reschedule resources that were not used due to inclement weather or safety must be submitted to DPTMS Range Operations Scheduling Branch within 3 working days of originally training date. During this period, the affected unit will determine a reschedule date for training. Unit will submit their request to reschedule the cancelled training via email through their brigade scheduler. The email must identify the original event/date/time/facility (as listed in RFMSS), and the new/date/time/facility (see Appendix B of the SOP for 414 format). If DPTMS receives the written request within 72 hours to reschedule the cancellation, battalion commander approval is not required.

2-7. Scheduling of simulators

a. Training simulators: Engagement Skills Trainer (EST), Call-for-Fire Trainer (CFFT), and Reconfigurable Vehicle Tactical Trainer (RVTT) must be scheduled in RFMSS. Units will email their requests to the appropriate POC. Email approvals will be pasted into the communication block of the RFMSS request.

b. Contact TSC for a copy of their policies and procedures for the use of training aids, devices, simulator and simulations (TADSS) or call 573-596-4604.

2-8. Priority of use

Brigades/units that have dedicated training resources for training-specific ranges, training areas, or facilities, subordinate units have "first shot" on use of those facilities. Units will submit their training requirements into RFMSS (see Appendix A of the SOP). Training facility/scheduling priorities on FLW are IAW the CG's Command Training Guidance (CTG) listed below:

Priorit y	Training Resource	Priority	Training Resource
1	Units Alerted for Deployment	8	CCC/ WOES
2	IRR MOB Training	9	Functional Courses (Supporting GWOT)
3	MTTs deploying ISO TO&E Units	10	FORSCOM/ MTOE Units
4	IET BCT (PH I-III)	11	PCC
5	BOLC B	12	Functional Courses
6	AIT/OSUT (PH IV- V)/ITRO	13	Reserve/ NG, AT and Inactive Duty
7	NCOES/ NCOA		

Chapter 3

SAFETY, SPECIAL REQUIREMENTS, AND LIMITATIONS

3-1. General

a. Persons in charge of or using ranges, training areas, maneuver areas, and training facilities are responsible for compliance with the safety requirements of this regulation and with applicable technical manuals (TMs) and field manuals (FMs). A copy of this regulation, delegation of authority, composite risk management worksheet, and approved deviations, range SOP, and Range Safety Data Card (artillery and mortar firing points), as well as other applicable manuals and publications, will be present at all ranges during live-fire and demolition operations.

b. Training at areas not designated in RFMSS as training facilities requires the approval of the RO. Requests to establish temporary ranges and training areas or to modify existing facilities will be submitted by memorandum to the RO. Include the type of range or exercise; type of task to train; training footprint; proposed location; list of facilities required; and any pertinent explanations, overlays, risk assessments, ARTEP, SOPs, and TSPs/POIs that support the change. Restore temporary ranges and training areas to their original condition prior to clearing the training site unless granted prior approval by the RO.

c. Reserve Component (RC) units scheduled to fire artillery or mortars at FLW will coordinate with RC Operations Officer, DPTMS, and Range Operations. Range Operations coordinates with Aviation Division, DPTMS, not less than 72 hours prior to the scheduled firing. Coordination with the Kansas City Center, FAA, by Range Operations is required 24 hours in advance when the maximum altitude of the projectiles will exceed 2,200 feet above mean sea level (MSL).

d. Do not fire recoilless rifles and rocket launchers from the interior of buildings.

- e. Armor-piercing ammunition will not be fired on any range that has automated targets.
- f. Do not use live ammunition in place of rifle grenade cartridges or propelling devices.
- g. Follow safety conditions in DA PAM 385/MCO 357.1C and appropriate FMs and TMs when firing rocket launchers.
- h. The RSO will provide a safety briefing to all participating personnel prior to any training that involves blank or live-fire or the use of any pyrotechnic devices.
- i. All Soldiers conducting weapons firing, demolitions, and rappelling will remain in proper uniform at all times (physical training (PT) uniform are not allowed on ranges). Warrior tower will be governed by Training and Doctrine Command (TRADOC) and FLW guidance. Kevlar helmets will be worn during all tactical training in IET subjects except as directed by the senior commander and TRADOC Reg 350-6 for the prevention of heat injuries. The senior commander determines the uniform for permanent party Soldiers. Individual body armor (IBA) will be worn on Ranges 4, 12, 26B thru 26F, 31, 33, 36 and 38. The EOD team leader will determine the uniform for EOD personnel performing EOD operations.
- j. Danger areas will be designated by range warning signs on all major roads and trails. Range warning signs will indicate the exact limits of the impact or dud/UXO areas. The boundaries indicated by these signs will not be crossed without approval from Range Operations.
- k. Ranges and Training Areas on FLW are considered dangerous 24 hours a day. Personnel or units will not enter any range facility (unless properly scheduled) without clearance from Range Operations. Range cadre performing maintenance or occupying a range or training area for any reason will notify Range Operations immediately upon occupying.
- l. The fire desk technician on late shift will review daily the 24-hour maneuver area announcement, shared training resource schedule, and training area schedule for conflicts that could cause an unsafe condition and require a scheduled range or training area to close. Once the document has been reviewed, the reviewing firing desk technician will publish maneuver areas open for recreational use for that day. The maneuver area recording will list all maneuver areas open for recreational use.
 - (1) Changes must occur 48 hours in advance when possible. The fire desk technicians have the final say in whether an area is open or closed.
 - (2) In the event there is a scheduling conflict that impacts training next to an open area and corrections cannot be made, the Range Operations Officer and fire technician supervisor will be notified immediately.
 - (3) Units may sign for a bivouac/training area the day prior to scheduled training in RFMSS, but the unit cannot set up or occupy that site until the next day. This is important, as the area will generally be open. This is to avoid the conflict of Soldiers setting up bivouac/training in an open area and coming into conflict with recreation users.
- m. Caution all Soldiers that snakes, spiders, ticks, and injurious plants (for example, poison ivy) are common on ranges and training areas, especially during warm weather months.

- n. Caution Soldiers on key environmental issues affecting the operation of the range or training area.
- o. When conducting mechanical training, clear all weapons prior to training and inspect dummy ammunition to ensure absence of live ammunition. Check all toolboxes, spare parts boxes, and other containers to ensure that no live ammunition is present.
- p. Do not fire blank ammunition at individuals within a distance of 25 meters. Blank adapters will be installed on weapons at all times.
- q. When using the Close Combat Mission Capability Kit (CCMCK) do not fire at individual within a distance of 1.5 meters. Soldiers must wear in conjunction with the Army combat helmet (ACH) approved personal protection equipment (PPE) for protection of the eyes, head, neck, and groin. The simunition FXR or eye tactical protective face mask must be worn. Failure to wear approved (PPE) can result in permanent partial disability due to the projectiles impacting the unprotected head, eyes, face, neck, or groin. Head shots are prohibited. All skin must be covered by a minimum of one layer of clothing (including combat gloves). Soldiers will wear single hearing protection.
- r. The RSO will ensure that an ammunition shakedown is conducted of all personnel at the completion of all training that utilizes any type of ammunition prior to leaving the range or training area.
- s. DA Pam 710-2-1, paragraph 11-14, outlines the guidance for minimum rank required for personnel performing as the RSO and signing the explosive consumption report. A warrant officer or above will perform duty as the unit's RSO when Category I items are used in live-fire exercises. IAW AR 190-11, Appendix B-2, Category I weapons are non-nuclear, man-portable missiles and rockets in a ready-to-fire configuration; for example, the AT-4 anti-tank weapon.
- t. Bloodland Range Troop Trail is closed to wheeled vehicles except for trail vehicles following foot marches. Vehicle use must be approved by the RO. Speed limit for authorized vehicles is 10 MPH.

3-2. Limitations

All firing will be confined to the established limits of fire and impact areas. These areas are identified by left and right firing limit markers. Under no circumstances will the OIC or other personnel approve the firing of any type of ammunition outside established limits of fire without the approval of the Range Officer. Under no circumstances will the OIC or other personnel approve the firing of any type of weapon from firing positions or at targets that are not within the established and approved surface danger zone (SDZ) without the approval of the Range Officer. No portion of the surface danger area for a weapon or explosive can intersect or cross the following areas without a deviation from safety criteria as defined in DA Pam 385-63.

- a. Federal or State highways.
- b. Railroad right-of-ways.
- c. FLW reservation boundaries.
- d. Built-up areas of the reservation.
- e. Areas where troops are maneuvering, except as prescribed in AR 385-63/MCO 3570.1C.

3-3. Range/training area SOPs and risk management

a. An SOP will be present on all ranges/training areas. The responsible unit for each range/training area will write SOPs and update them, as necessary and forward copies of the SOPs to Range Operations and DPTMS. SOPs will outline the operation, safety and environmental restrictions, and procedures for each range/training area. SOPs must be approved by the RO, DPTMS, and the Garrison Commander or the school commandants prior to implementation.

b. Risk Management is required for each range and training area. The CG, MSCoE, has delegated approval authority for extreme high-risk to general officer commandants and high-risk training events at the BDE CDRs per FLW 385-10. Responsible units will conduct risk management IAW FLW Regulation 385-10. Requests for safety waivers will be submitted IAW paragraph 1-6 of this regulation.

3-4. Range/training area utilization reports

Range Operations will track maneuver and firing range utilization and furnish reports as required.

3-5. Privately owned vehicle (POV) parking

POV parking on ranges/training areas are allowed only in designated hardened parking areas (blacktop or gravel) normally located at fixed facilities. Artillery firing positions are off-limits to all POVs.

3-6. Communication system

a. Outside the cantonment area. All units conducting training outside the cantonment area (i.e. ranges, training areas, convoys and foot marches) will maintain LMR or FM communication with Range Operations at all times. When communication is lost with Range Operations, all training will cease until it is restored.

b. Two means of communication. Units are required to establish two means of communication on live-fire ranges. The primary means of communication will be land mobile radio (LMR) P-25 (trunk) radio. Secondary means of communication may be telephone. Cell phones are **NOT** an acceptable means of secondary communication.

c. Radio Nets. The permanently assigned Range Operations operational nets are frequencies; Very High Frequency (VHF) 148.025 and FM 36.45. The net control sign is "RANGE OPERATIONS." Do not use Range Operations operational nets as administrative nets or as a tactical frequency for units participating in training exercises. Units will utilize Range/Training area number for call sign or unit's designation as call sign. The use of internal call signs with Range Operations is not authorized.

d. Telephones. The telephone number for the Range Operations Fire Desk is (573) 596-2525. The assigned telephone numbers for range facilities are listed in Appendix B. Telephone extension numbers for training areas are listed in Appendixes B and D.

e. Telephone maintenance and repair. The maintenance and repair of all installed telephone equipment on ranges and training areas is the responsibility of DPW and NEC. Under no circumstances will using units attempt to repair or alter telephone equipment. Splicing into lines is prohibited. Report damaged or malfunctioning telephone equipment to Range Operations.

f. Live-fire ranges.

(1) Prior to any live-fire exercise, the unit or range cadre will contact Range Operations and:

(a) Request to occupy the range. Unit will provide the RSO and OIC to Range Operations.

(b) Unit will request a **“HOT STATUS”** when the unit is ready to conduct live-fire. A **“HOT STATUS”** serves as approval to commence firing. The OIC or a qualified representative will monitor communications equipment throughout the period of firing.

(2) Upon completion of firing, the unit/activity will obtain a **“COLD STATUS”** and **“CLOSING”** time from Range Operations indicating that the range is no longer in a live-fire status, and will provide the following information:

(a) Number of personnel trained.

(b) Number of rounds expended by DODIC.

(3) Units will notify Range Operations and request to depart the range.

(4) Units will identify themselves by using the unit designation and the artillery/mortar firing point or exercise number. Units using multiple firing points or training areas are required to maintain communication with Range Operations through the Fire Direction Center (FDC) controlling the firing points or exercise. OICs will ensure that communication is maintained between headquarters elements and sub-units occupying training areas, firing points, or conducting training exercises.

(5) In the event of communication failure (internal or external), units will call an immediate “cease fire” until communications are restored.

3-7. Bivouac sites, military operations on urban terrain (MOUT) sites, tactical training bases (TTBs), training and maneuver area procedures

a. The Range Operations fire desk operators monitors resources reserved for the day of training. Units will contact or visit Range Operations to occupy a training facility. Units that fail to occupy requested facilities within the day scheduled will be reported as a no-show. Coordination can be made with Range Operations in the event of unusual circumstances.

b. When signing for a bivouac site, TTB, or MOUT, the unit will coordinate with Range Operations to inspect the site. Only personnel that are in the grade of E-5 or above with a valid FLW Form 377-1 (Range Safety Officer Card) will be authorized to sign for the site. The unit representative signing for the site and a Range Operations inspector will conduct a joint inspection of the site during daylight hours using the appropriate In/Out Processing Checklist (see samples at Appendix J).

c. Upon occupation of a bivouac, TTB, MOUT site, training or maneuver area the unit will establish and maintain communication with Range Operations. When communication has been established, the unit will request an occupy time (fire desk operator will provide an occupy time and their two-letter initials).

d. The following will be reported to Range Operations when occupying a training facility that is reserved in RFMSS for the unit:

(1) Unit designation.

(2) Training site to be occupied.

(3) Training to be conducted.

(4) Unit phone and POC.

(5) RSO.

(6) OIC when using pyrotechnics.

e. Vegetation removal and soil disturbances will be IAW paragraph 3-18 of this regulation.

f. Open fires are prohibited. Fire are permitted in burn barrels or other confined unit and must be approved by request to the Senior Fire Officer (SFO), and then only with the approval of Range Operations just before starting the fire.

g. Do not place obstacles (such as concertina wire and logs) outside the bivouac boundaries or on any lettered or numbered road without the written approval of the RO. Obstacles must be removed before Range Operations will clear unit from the facility. All obstacles will be annotated on the unit overlay.

h. Properly dispose of all waste to prevent the creation of unsanitary or unsightly conditions. Do not bury waste of any kind in training areas.

(1) Liquid waste. Dispose of liquid waste from kitchens, showers, and baths as indicated in FM 21-10. Waste generated from food preparation will be drained, bagged, tied, and placed in an installation trash dumpster.

(2) Garbage. Collect garbage (paper, cans, and bottles) in bags and store in garbage cans until it can be transferred to installation trash dumpsters/FLW recycling center. Do not leave garbage behind when vacating a site. All food waste will be returned to the DFAC, to include MRE packaging. All ammunition dunnage will be returned to the ASP.

(3) Human waste. Field latrines are prohibited. Permanent latrines are located on some bivouac sites. Portable latrines are available for use through DPW.

(4) Portable Latrines.

(a) Portable latrines will not be furnished at locations where adequate permanent latrines exist.

(b) Portable latrines will be requested by submitting a memorandum (see Appendix K), to the DPW, Operations Branch or send an email request to: usarmy.leonardwood.usag.mbx.dpwpl@mail.mil Requests must be received at least 2 weeks in advance. Requests will include, at a minimum, date(s) for latrine support, number of personnel (broken down by male and female), unit point of contact with phone number, and a detailed strip map with 6-digit grid coordinates.

(c) For a normal bivouac period (5 days, 4 nights), portable latrines will be furnished at a rate of one per 25 males and one per 25 females.

(d) Portable latrines will be serviced IAW the services contract. Additional service will be performed only when contents of tank are within 6 inches of the seat. When these conditions exist, units will call DPW at 596-7021.

(e) Latrines are not to be used as trash receptacles. Units will be required to remove any bottles, wrappers, and other inorganic matter that is found by latrine service personnel.

(f) Units will not move portable latrines.

(5) Permanent Latrines.

(a) Permanent latrines are serviced by DPW every 30 days. Service includes pumping, cleaning, and disinfecting latrines. Additional service will be performed only if contents of pit are within 6 inches from the seat in four-hole latrines and 1 inch from the top of the pit in six-hole latrines. When these conditions exist, units should call DPW at 596-7021 for pumping.

(b) Between 30-day servicing, latrines will be cleaned and maintained by units. This will include sweeping and mopping the floors, washing the seats and urinals, picking up trash, and stocking toilet paper.

(c) Lime will not be put in latrine for odor control. Lime causes build-up in latrine pits by reducing the effectiveness of bacteria digester added during 30-day servicing.

(d) Latrines are not to be used as trash receptacles. Units will be required to remove any bottles, wrappers, and other inorganic matter that is found by latrine service personnel.

(e) Latrine repairs, to include unclogging of urinals, will be requested on DA Form 4283, Facilities Engineering Work Request. Service orders will be forwarded through the unit S-4 to DPW Work Management Branch.

i. Units will not park any vehicles or water trailers on concrete pads at the TTB's.

j. Upon completion of bivouac site, TTB or MOUT, units will coordinate with Range Operations for an inspection of the site. A Range Operations inspector and a unit/activity representative (E-5 or above) with a valid FLW Form 377-1 (Range Safety Officer Card) will conduct a joint inspection of the bivouac site/MOUT/TTB. Inspections are conducted during daylight hours. In the event that the unit departs before daylight, leave a rear detachment for the inspection and to obtain clearance. The unit will clear all deficiencies noted during the inspection, within 24 hours.

3-8. Establishing a maneuver box (MB)

a. General. In order to reduce the amount of certified range safety officers (RSO) required for a unit to train in multiple training areas (TAs) at once, units may coordinate with Range Operations (RO) to establish a maneuver box (MB). A MB is defined as a set of adjoining training areas (does not include any live-fire ranges) that are under the control of one RSO.

(1) All MBs will be assigned to a central location within the MB, Tactical Training Base (TTB) or a bivouac site, and will have (1) RSO assigned. Changing RSOs is authorized, but it must go through RO prior to the change becoming effective.

(2) The MB will be opened on the 1st day training and closed on the last day of training through RO.

(3) TAs within the MB must be opened and closed with Range Operations by the RSO IAW RFMSS through RO.

(4) Training events that require the use of pyrotechnics will be scheduled in RFMSS as a “firing event”. All other scheduled events will be scheduled as “non-firing” events and the use of pyrotechnics will not be authorized. DES/Demolitions/Urban Breaching will not be authorized in conjunction with MB.

(5) RSO may request a “pyro window” at any time during their training exercise. Once approved by RO, pyro can be used in any opened TA within the MB. An OIC will be required to be within the MB while the “pyro window” is open.

(6) Additional TAs outside of the MB requires separate RSO.

(7) The following terms will be used when opening or closing a MB or TA.

(a) Type of Occupancy. One of these must be called in immediately upon arriving on site. When the unit occupies its first site it may immediately assume any three of these statuses:

1. Occupied – Occupied is reporting the presence of the unit on site.

2. Occupied Training – Occupied Training is any event that does not require the use of pyrotechnics.

3. Occupied Training with PYRO – Occupied Training with PYRO requires the use of pyrotechnics.

(b) Training Complete – Training has come to an end, but the unit remains on site. A unit in this status may resume training at anytime.

(c) Departed – A unit has completed training and is departing the site for good. Once a unit “departs” the site it cannot return to a training status as the event is closed out permanently in RFMSS.

b. Unit Responsibilities.

(1) Will ensure all desired TA(s) with the MB are in a “reserve status” in RFMSS. TAs will be scheduled in RFMSS.

(2) Ensure unit RSO maintains continuous communications with RO and any element of the unit that is engaged in training regardless inside the MB.

(3) Open and close each TA within the MB through RO and IAW RFMSS on a daily basis.

(a) Unit will contact RO and request to open MB.

(b) Unit will list each area to be opened with the MB.

(c) Upon completion of training, unit will call RO and request to close MB.

(d) Unit will list each area to be closed with the MB. If unit is occupying a bivouac/TTB area, this area will remain open until completion of FTX.

(4) NLT three (3) business days from execution of training, units will submit a map overlay to RO and review training plan requirements with Range Operations. Any issues that hinder the commanders intent for the training exercise should be addressed with Range Operations prior to execution. You may submit any issues or concerns to usarmy.leonardwood.imcom-central.other.flwrangeops@mail.mil or by calling 573-596-6147 or 573-596-6961 (See MB SOP and Overlay Information located under the RFMSS Library Tab).

(5) Maintain an adequate amount of cadre with RSO certification.

(6) In the event of an accident or incident, the RSO and OIC will move directly to the site of the incident and maintain direct communications with Range Operations.

(7) When reporting "training complete" submit the number of Soldiers training and the amounts and DODICs of all pyrotechnics used in training.

c. Range Operations Responsibilities.

(1) Include MB SOP information in the monthly RSO certification course and quarterly FLW Commanders/1SG Pre-Command Course (CCFSPCC).

(2) Assist unit commanders in meeting training objectives within the scope of DA and local regulations and policies.

3-9. Recreational activities

a. The use of the Bloodland Range Training Complex for outdoor recreational activities will be coordinated with and approved by the RO to protect military personnel and the general public from exposure to hazards. Training requirements will have priority over all recreational activities. When authorized for use, the site must be left in as good, or better, ecological condition than it was prior to occupation.

b. Conduct of uncontrolled or unscheduled outdoor recreational activities within the Bloodland Range Training Complex is prohibited.

c. Outdoor recreational activities in temporary or permanent dud/UXO impact areas are strictly prohibited, without exception. Areas not authorized for recreation (except hunting and fishing as described in subparagraph d below) include impact areas, landing strips/zones, and small arms ranges as being a surface danger area, a restricted area, or an off-limits area. Personnel authorized to use areas for the purpose of recreation are responsible for familiarizing themselves with the limits of the authorized areas. Recreational users, other than hunters and anglers, will comply with FLW Reg 215-3, Use, Operations, Maintenance of Post Recreation Areas. This regulation and other recreation information are available at the Outdoor Adventure Center, Building 2290.

d. Hunters and fishermen will comply with FLW Reg 210-21 Hunting and Fishing Regulations, and FLW Reg 190-6 Registration and Control of Privately Owned Firearms and Other Weapons on Fort Leonard Wood. Information on hunting and fishing areas is also available on line at; web site: http://www.fortleonardwoodmwr.com/outdoor.php#hunt_fish/ or by calling (573) 596-4224. If the safety fan of an active range overlays any portion of an area or a training area is in use inside an area, the

entire area is closed for recreation. Exceptions to this include those impoundments identified as continuously open in FLW Reg 210-21, paragraph 5c. When road conditions are red/black, all recreational activity will be suspended until road conditions improve.

e. Notify Range Operations immediately of any recreational activities in unauthorized areas. If personnel are in a surface danger area, call a cease-fire until they are escorted from the area. Range Operations will request aid from the Post Game Warden, if required.

f. Open fires during recreational activities are restricted to burn barrels, metal fire rings, grills, or other confined units. All other fires are prohibited unless specifically authorized by the RO and the SFO.

g. Swimming is not authorized in bodies of water within the boundaries of the FLW military reservation that is not associated with an official unit training plan approved by Range Operations. Swimming is only permitted in MWR operated facilities.

h. All vehicles operated in recreational activity will be confined to established and maintained roads. Operation on firebreaks and cross-country driving is prohibited. Use of all-terrain vehicles (ATVs) within the installation boundaries is strictly prohibited.

i. Metal detecting as a recreational activity on FLW is prohibited.

3-10. Toxic chemical, chloroacetophenone sulfur (CS) agents, and smoke devices

a. Use of toxic chemical agents in training on FLW is prohibited except at the Chemical Defense Training Facility (CDTF).

b. CS training is authorized in pre-approved ranges and training areas. Hexachloroethane (HC) smoke is not authorized in training at any time. The only authorized smoke grenades are those containing terephthalic acid (TPA). Chemical units will submit a monthly roll-up of fog oil, smoke pots, smoke grenades, and *Bacillus Globigii* (BG) spray to Range Operations NLT the 1st day of each month. The roll-up must contain the following information:

(1) Date and time.

(2) Unit.

(3) Type of obscurant.

(4) Location.

(5) Amount.

c. For Chemical, Biological, Radiological and Nuclear (CBRN) training involving the use of CS agents, and for training exercises involving smoke, the OIC will be in the grade of E-6 or above, or be a qualified civilian instructor (GS-7 or above). The OIC must also be certified by his/her commander for CBRN training involving the use of chemical and smoke agents. For training exercises involving smoke, the OIC will observe all safety precautions.

d. Training with CS is restricted to authorized training exercises and chambers. Only CS in capsule form may be used in the CS chamber.

e. CS and smoke producing materials will not be used under conditions that are dangerous to life or property. In addition, these agents will not be released within 1000 meters of the reservation boundaries (including approved MOUT/TTB sites) or within 300 meters from public or heavily traveled installation roads and inhabited areas, or where the smoke will be carried off the installation by prevailing winds unless previously coordinated with Range Operations. Do not exceed more than 480 canisters in a 24-hour period. Smoke pots will not exceed 49 in a 24-hour period. BG spray will not exceed 10 lbs in a 24-hour period. Kaolin will not exceed 12 lbs in a 24 hour period.

f. If notified that ranges or training areas occupied by other training units are adversely affected by smoke operations, the OIC will coordinate with the RO and the affected units to reduce the impact of smoke operations.

g. For additional information on the use of chemical agents see DA Pam 385-61.

h. Red smoke will be used only in the event of an emergency, with the exception of Range 31, which uses red smoke for demonstration purposes only.

3-11 Laser operations

Laser operations on FLW will be conducted IAW DA Pam 385-63, Chapter 16; and the following:

a. Authorized laser designators and range finders. IAW special study numbers 25-42-0338-83 and 25-42-0403-88 conducted by the U.S. Army Environmental Hygiene Agency, the following laser designators and range finders may be used on FLW: AN/TVQ-2, the AN/GV-5 hand held LRF, the TAADS in the AH64 helicopter, the LAAT in the AH1-1 S helicopter, and the ANWG-2. The Ranges on which these laser systems may be used will be determined by the RO.

b. Responsibilities.

(1) The laser firing unit commander is responsible for safety during all phases of a firing exercise conducted by the unit. Unit battalion commanders or above will establish and maintain a safety training and certification program. As a part of this program, battalion commanders will submit a list of individuals in their respective units qualified to perform duties of OIC and Laser Range Safety Officer (LRSO) to Range Division.

(2) Commanders of laser using units are responsible for submitting requests for laser training to Range Division 2 weeks in advance of training event. The request will include risk management work sheet, type of laser systems involved and mission training plan. The RO is the final approving authority for laser training.

(3) Commanders will report any case of suspected radiation exposure of the eye to Range Operations immediately. Commanders will ensure an eye examination is performed within 24 hours of the suspected exposure.

c. The LRSO will—

(1) Conduct a thorough safety countermeasure briefing to all personnel authorized to participate in the laser operation.

(2) Lasers will be treated as direct-fire weapons.

(3) Personnel within the laser surface danger zone will wear Laser Eye Protection (LEP) during laser operations. Skin protection should also be worn when appropriate.

(4) Ensure that all laser beams terminate in the appropriate impact area.

(5) Ensure that operators fire only at designated targets, which are diffuse reflectors. At no time will operators fire at aircraft, manned vehicles, flat specular (mirror-like) surfaces such as vehicle windshields or water filled craters.

(6) Ensure that laser are not operated or experimented with outside the range area.

(7) Ensure the laser exit port, when not in use is covered with an opaque dust cover and the laser is disabled IAW the appropriate TM/FM governing the weapon system.

d. Laser Hazards.

(1) Hazards are almost exclusively associated with inadvertent exposure of the unprotected eye to intra-beam viewing, either from the direct beam or the reflected beam. Very high-radiant exposures will cause gases to form near the site of absorption, which may disrupt the retina and may alter the physical structure of the eye.

(2) Adverse thermal effects resulting from exposure of the skin to radiation may vary from mild reddening to blistering, depending upon the exposure dose rate.

e. Safety Requirements for Laser Operations are as follows:

(1) The laser port will be covered by an opaque dust cover or ballistic cover when the laser is not in use to prevent accidental firing of the device. This requirement includes tactical exercises, movement to and from ranges, or when the device is in storage. The laser will be further disabled IAW the appropriate TM/FM governing the weapon system.

(2) This regulation does not apply when laser devices are used in two-sided tactical force on force training exercises. No tactical force-on-force training with laser devices is permitted with tactical laser; devices which are approved for that purpose, such as the Multiple Integrated Laser Engagement System (MILES), may be used.

(3) Laser warning signs will be posted on all normal approaches to the range. Night ranges will fly range flag and turn on red beacon when conducting laser training.

(4) Inclement weather and night operations require no additional safety precautions. Certain ranges may be closed for operations if water begins ponding.

(5) Use training filters whenever possible. Training filters reduce the ocular hazard distance, which greatly improves system safety. When targets can be engaged effectively using training filters, training filters will be employed.

f. Buffer zones. During laser operations, no portion of the laser beam should extend beyond the controlled target area. Two types of buffer zones will ensure the laser beam terminates in the controlled target area: horizontal buffer zones and vertical buffer zones. Horizontal buffer zones extend to the right and the left of the target, while vertical buffer zone extends down from the horizon. A 10-mil buffer zone (horizontal and vertical) will be used for laser systems not previously evaluated by the Army Environmental Hygiene Agency. All other laser systems will use the data published in DA PAM 385-63.

g. Units must submit range Laser Surface Danger Zone (LSDZ) to Range Division operations depicting specific firing points, left and right limits, vertical and horizontal buffer zones, and type of laser being used. These range fans must be provided to range division no later than 14 working days prior to intended training event.

3-12. Restricted airspace

a. Restricted areas of R4501, A through H, are airspace above live-fire ranges. Aircraft are restricted from these areas when they are "Wet" unless otherwise specified in the notice to airmen (NOTAM). A NOTAM check is required for all flights arriving and departing Waynesville Regional Airport at Forney Army Airfield. The following are the restricted areas with their flight levels.

Area	Restricted Airspace
R4501A	Surface to 2,200 feet MSL
R4501B	Surface to 4,300 feet MSL
R4501C	2,200 feet to 5,000 feet MSL
R4501D	5,000 feet to 12,000 feet MSL
R4501E	12,000 feet to 18,000 feet MSL
R4501F	Surface to 3,200 feet MSL
R4501H	Surface to 3,200 feet MSL

b. Training units will make final coordination for airspace requirements with Range Operations 3 weeks prior to any training involving air missions.

c. Weather conditions for the flight period must be not less than basic visual flight rule (VFR) (1,000-foot ceiling and 3 miles visibility).

d. Reduced, covert, and black-out lighting operations.

(1) Will not be conducted in Class D airspace.

(2) May be conducted in Restricted Area R4501 A, C, D, and E with coordination with Cannon Range Operations.

e. Maximum density of aircraft in any training area will be determined by aircraft operating procedures. Range SOP, or FLW Range Operations Officer. Under no circumstances will aircraft operate in any training area without prior coordination with Forney Tower (Advisory) and direct radio contact with all aircraft operating in the area.

f. For all airborne operations within R4501, the drop zone safety officer (DZSO) will notify Range Operations a minimum of 2.5 hours prior to time on target (TOT) that the mission is a GO or that it is

cancelled. When Range Operations does not receive 2.5-hour notification, authorization to enter R4501 may be denied. DZSO will call Range Operations for clearance when aircraft is 10 minutes out from R4051.

3-13. Airstrips/landing zones

Personnel will not use airstrips/landing zones on the FLW Military Reservation for assembly or bivouac. Vehicles will stay clear of airstrip/landing zone boundaries. Driving vehicles across airstrips/landing zones for any reason is prohibited. Do not dig holes within 100 m of airstrips/landing zones and adjacent managed areas. Do not tamper with windsocks.

3-14 Opposing force (OPFOR) actions

a. Any unit or evaluating team using OPFOR personnel during training will comply with the following:

(1) OPFOR personnel will wear a distinctive uniform to make them easily recognizable.

(2) OPFOR personnel will not undertake any operation that may create an unsafe condition.

(3) Execute OPFOR attacks according to a coordinated schedule. Unplanned actions are prohibited. Such actions could conflict with another unit's training and cause serious injury or loss of life.

(4) Physical contact between OPFOR personnel and opposing unit personnel is prohibited with the exception of enemy prisoner of war (EPW) training that includes searches. Fighting, rock throwing, and using rifle butts is prohibited. Modification or alteration of munitions of any type is strictly prohibited. This includes fuses, flares, CS, and simulators.

(5) Do not mistreat OPFOR personnel.

(6) OPFOR activity is prohibited in an area where live ammunition is fired.

(7) Do not fire blank ammunition at individuals within a distance of 25 meters. Blank adapters will be installed on weapons at all times.

(8) When using the Close Combat Mission Capability Kit (CCMCK) do not fire at individual within a distance of 1.5 meters. Soldiers must wear in conjunction with the Army Combat Helmet (ACH) approved personal protection equipment (PPE). Head shots are prohibited. All skin must be covered by a minimum of one layer of clothing (including combat gloves). Soldiers will wear single hearing protection.

(9) Account for all OPFOR personnel at the end of the exercise.

b. OIC and/or NCOIC (E-6 or above) of OPFOR personnel.

(1) The primary duty of the OIC/NCOIC is safety. The OIC/NCOIC will be present at all OPFOR actions.

(2) The OIC/NCOIC will inspect all weapons to ensure that blank adapters are installed and that OPFOR personnel have no live ammunition in their possession. Use only authorized pyrotechnics during OPFOR attacks.

(3) The OIC/NCOIC is responsible for coordination, supervision and execution to ensure safety during conduct of OPFOR activities.

3-15. Wildlife/stray livestock

a. Personnel observing wildlife or domestic animals on any range or training area causing interference with training or range firing will report the location and number of animals to Range Operations. In the event that wildlife or domestic animals are observed in or entering range impact areas, units will cease fire, clear the firing line, and notify Range Operations. Report any animals that are accidentally injured or shot to Range Operations.

b. Range Operations orders a cease-fire in appropriate areas where animals are observed or likely to enter, and assists units in expeditiously driving animals from the areas. In the case of stray livestock, Range Operations furnishes the provost marshal's office with a description of the livestock, the number of animals, and their location.

3-16. Range maintenance, grass mowing and police

a. Range cadre will be designated as responsible for each range and training area upon signing in. Range cadre responsibilities will include day-to-day maintenance of the range or training area such as housekeeping, cut and trimming assigned areas, and general police. Range cadre will be responsible to properly identify to Range Maintenance any required preventive maintenance, repairs, or new construction of the real property facilities located on the range or training area. Range cadre will be responsible for the vegetation removal in and around the target enclosures.

b. Downrange grass mowing.

(1) Mowing downrange is restricted to the target engagement areas (line-of-sight to targetry) on all live-fire and demolition ranges. The creation of a "No-Mow" zones (green strips) on live-fire and demolition ranges is an effective method for sediment control. Areas that do not impede line-of-sight to targetry or pose a valid risk to personnel or property will not be mowed.

(2) Range Operations will establish the "No-Mow" (green strips) locations. ITAM will maintain the identified location in the FLW GIS/CAD database, and will update the data as required.

(3) Mowing downrange is the responsibility of Range Maintenance. Units must request mowing of these areas no less than two weeks in advance on FLW Form 388-E (Range Division Material and Service Order, Request for Range/Training Area Upgrade and Maintenance). Range maintenance will not mow within 50 feet of any structure other than target berms on any range.

c. Fighting position covers, target frames, ammunition separators, picnic tables, and weapons racks will be fabricated or replaced by Range Maintenance. All unserviceable target frames and targets will be taken to Range 7 for disposal.

d. Ranges and training areas are installation assets. All requests for troop projects or new projects on ranges and training areas that involve construction, land disturbance, or modification to existing roads/structures must be reviewed and approved by the RO prior to the start of the project. Units must

prepare a FLW Form 388-E outlining the project and submit to Range Operations. Once approved by the RO, the unit prepares a DA Form 4283, attaches the approved FLW Form 388-E and submits to DPW for action. DPW will not process work orders that do not have the FLW Form 388-E attached.

e. General range/training area police.

(1) The responsible unit for each range/training area will remove and dispose of unsightly and objectionable debris. Place major emphasis on areas of heavy use, for example - firing points, bivouac areas, recreation areas, and major range roads.

(2) Report any area not properly policed to Range Operations. Range Operations will contact the last using unit and determine responsibility for policing the area.

(3) Anyone finding lost or abandoned government property on ranges or range roads will secure the property and turn it in to their unit Property Book Officer.

(4) Upon completion of training, the using unit will conduct a thorough police of the range/training area ensuring that no debris is left in the area and that any soil excavations are filled with dirt and leveled. Report destroyed, damaged, or missing firing point markers to Range Operations. Units are responsible for police within a 200 meter radius of their occupied area.

(5) Range details are not released from their respective ranges until the NCOIC of said range inspects their work and formally releases them.

3-17. Tactical communications wire

Install and remove tactical communications wire IAW the following guidelines:

- a. Tag communications wire to indicate unit designation.
- b. Do not bury or cover wire lines.
- c. Wire will not be placed where it would cause harm or interfere with mounted and dismounted troops and vehicular traffic.
- d. Tactical communications wire will be sufficiently marked to allow maximum observation by low-flying aircraft, vehicles, and personnel.
- e. Recover communications wire upon completion of the exercise.
- f. The placing of communications wire within 100 m or across aircraft landing strips/zones or staging areas is prohibited.
- g. Do not use telephone or power poles for hanging tactical communications wire.
- h. Overhead wire will be at least 25 meters from the nearest power line.

3-18. Environmental and natural resources

a. All users of lands and waters on FLW are responsible for the proper use, protection, and conservation of natural resources, cultural resources and the environment. Proper use IAW the requirements of this regulation will help ensure the long-term conservation of military terrain essential for current and future military missions. Training on waters other than those specifically designed and built for training, such as TA 250, may be authorized on a case-by-case basis and requires the user to coordinate with ITAM, Range Operations, and Natural Resources Branch, DPW prior to scheduling so that potential impacts can be evaluated and appropriate mitigation/ monitoring measures can be put in place. Training activities impacting natural streams or manmade lakes and ponds will be coordinated through ITAM and Range Operations prior to scheduling the activity. Subsequent coordination by ITAM/Range Operations will be made with Natural Resources Branch, DPW. See the FLW Commander's Environmental Handbook and FM 3-34.5/MCRP 4-11B, Environmental Considerations.

b. Restrictions.

(1) Roads, fire trails, and firebreaks will not be blocked, cratered, ditched, booby-trapped, or in any way rendered impassable unless coordinated through Range Operations and an approved work order has been issued by DPW for permanent closure or improvement of the facility. Movable obstructions capable of being moved by one person are allowed. All blocked roads, fire trails, and fire breaks will be manned by training personnel for the duration of the exercise. Subsequent to the completion of the exercise, all debris, logs, concertina wire, and other barricades will be policed and properly disposed.

(2) Except on ranges and in training areas specifically designated for such activities (see Appendices B-F), or as approved by the RO and coordinated with the Chief, Natural Resources Branch, DPW, the following restrictions apply:

(a) Natural vegetation will not be cut, destroyed, or removed. Grass cutting will be restricted to established maintained grounds. The use of live vegetation for camouflage is prohibited. Trees will not be cut or damaged without prior approval from Range Operations. Care will be taken to ensure that ground cover is not stripped to bare soil.

(b) Only hand-digging is authorized on bivouac/FTX sites, unless specifically prohibited in Appendix E. After training is complete, the position will be filled with earth and returned to original grade.

(c) Mechanical excavation is permitted in training areas designated for that purpose, such as TA 244.

NOTE: In the event of an unanticipated discovery of archaeological materials (artifacts such as arrowheads, stone tools, pottery, glass bottles, dishes, etc.; foundation remains; middens) military training activities in the area of discovery shall immediately cease and the Range Operations shall be notified immediately. The area of discovery shall be put off limits to further training activities until qualified NRB personnel visit the site and clear the area. In the event of an unanticipated discovery of human remains military training activities shall immediately cease and the Military Police shall be notified immediately. The area of discovery shall be put off limits to further training activities until qualified NRB personnel visit the site and clear the area.

(d) Unless otherwise designated or approved through Range Operations and DPW Natural Resources Branch, all caves and rock shelters are off limits for military activities. Some caves are inhabited by endangered species of bats; therefore, training activities in proximity to these caves will be

IAW guidelines established in the FLW Environmental Overlay and Appendix N of this regulation. These activities must be coordinated through the Natural Resources Branch, DPW; the ITAM office; and RO prior to scheduling. FLW environmental overlay guidelines identify restricted activities in environmentally sensitive areas. The environmental overlay is available at Range Operations and battalion S-3.

(1) All lands posted or otherwise designated as closed for rehabilitation, restoration, or re-growth are off-limits.

(2) Washing of vehicles in natural bodies of water is prohibited. Wash vehicles at approved decontamination sites or wash racks. Soaps and detergents are prohibited for use in the decontamination sites. See Appendix L for location of approved decontamination training sites.

(3) All archaeological and historical sites are off limits to training. Site types include, but are not limited to, caves and rock shelters, prehistoric habitation sites, historical farmsteads, and historical cemeteries. See the Training Area Guidelines on the environmental overlay Appendix N. Recreation sites are off limits for training activity. Recreation site are as defined by FLW Reg 210-21, paragraph 5c.

(4) Crossing streams is permitted only at designated ford sites. Driving in streambeds is prohibited.

c. Immediately report the release of any hazardous substances into the environment to Range Operations. Hazardous substances may include, but are not limited to, petroleum, oils, and lubricants (POL); solvents; and antifreeze. CBRN agents will be used IAW the guidelines of the FLW Air Permit. See FLW Spill Prevention and Response Plan.

d. Be aware of vegetation fire danger and hazards. Destructive forest and grass fires are a real threat during dry periods. Refer to paragraph 3-27 of this regulation for guidance.

e. Natural resources and environmental damage caused by training activities will be investigated by the RO, assisted by ITAM and DPW Environmental Division personnel, to assess damage and loss and to determine responsibility. Responsible persons may be held liable for repair and mitigation under appropriate laws and regulations. At a minimum, damage will be repaired or mitigated by the responsible party.

f. The Natural Resources Branch, DPW, is the responsible office for the conduct of the Vegetation Fire Management Program to include vegetation fire danger alerting, firebreak system development and maintenance, prescribed fire and controlled burning, vegetation fire behavior expertise and assistance to the Fire Department on vegetation fires, and close coordination with RO. Refer to paragraph 3-27 of this regulation for detailed information.

g. Conduct all training with concern for conservation and future use of the military terrain.

3-19. Convoys and foot marches

a. When conducting convoys and foot marches outside the cantonment area, units will establish and maintain communication with Range Operations. A well-defined start point to begin unit tactical foot marches into the Range Complex (ranges and TA's) is the water tower near Forney Airfield. Units will call Range Operations to begin their tactical foot march only when the unit is ready to move.

Conduct radio checks with Range Operations at the start point, at designated checkpoints (or once per hour), and upon reaching the release point. (Note: For foot marches on the troop trail running to Range 22, report only at the start point, release point, and in the event of changes). If communication with Range Operations is lost, halt the convoy or foot march immediately until contact is restored. The report format is as follows:

(1) **For convoys:**

- (a) Line 1. Unit/activity designation
- (b) Line 2. RSO number
- (c) Line 3. Number of vehicles (by nomenclature)
- (d) Line 4. Convoy route number

(2) **For foot marches:**

- (a) Line 1. Unit/activity designation
- (b) Line 2. RSO number
- (c) Line 3. Route (start point [SP] and release point [RP])
- (d) Line 4. Number of Soldiers
- (e) Line 5. Number of cadre
- (f) Line 6. Number of trail vehicles

b. Map overlays.

(1) Prepare a map overlay for all scheduled foot marches conducted outside the cantonment area in which the troop trail is not used for the entire movement, using a FLW Military Installation Map, 1:50,000. Prepare map overlays IAW this regulation.

(2) Plot map overlay on a clear sheet of plastic and submit to Range Operations not later than 3 working days prior to movement. Information plotted on the overlay will be to the same scale as on the map. When the overlay is placed over the map, the details plotted on the overlay will be shown in their true position.

(3) When preparing overlays, units will use standard military symbols where possible. If it is necessary to invent nonstandard symbols to show the required information, the legend must show what these symbols mean.

(4) When conducting concurrent training during convoys or foot marches which includes the use of CS, smoke, pyrotechnics, or blank ammunition this information will be recorded in the marginal information of the overlay.

c. Convoys and road restrictions. The following traffic policies are established to ensure optimum safety during convoys and prevent unnecessary damage to road networks. Convoys are not authorized

to travel through TA-244, unless travelling on FLW 5. Driving on pond dams, outside of designated parking areas, along the shoreline, and in rivers and streams outside of designated crossings is prohibited. Access to those recreational areas identified in FLW 210-21 is prohibited for convoys.

(1) Convoy. A convoy is any group of six or more vehicles temporarily organized to operate as a column, with an escort, proceeding together under a single commander. Also, when 10 or more vehicles per hour are dispatched to the same destination, over the same route, they are considered a convoy. All vehicles designated as "oversize" will be treated as a convoy, regardless of number of vehicles. Oversize vehicles will contact Range Operations to coordinate access to convoy routes.

(a) The 58th Transportation Battalion and the MP School are authorized convoys of 20 vehicles, not including lead and trail vehicle.

(b) All other units are restricted to convoys of no more than 10 vehicles.

(2) Student Driver. Student Driver training/testing conducted on the installation will be called in to Range Operations with proposed route, regardless of number of vehicles. Radio communication will be established and maintained with Range Operations for the duration of the training/testing period.

(3) Speed. The maximum speed for wheeled vehicles is 5 MPH under the posted speed limit on improved and unimproved roads. Seatbelts will be used when available.

(4) Communication. Establish and maintain communication between the lead and trail vehicles.

(5) Traffic control for convoys.

(a) When crossing uncontrolled traffic intersections on post, convoys will post road guards. Some convoy routes cross low-water crossings or stream beds. During periods of heavy rainfall, these areas are prone to flash flooding. Never attempt to cross by vehicle or foot. Units are required to monitor Range Operations frequency for weather-related advisories. Commanders are responsible to conduct daily risk management to include weather-related safety hazards.

(b) Road guards will wear reflective vests. In addition, provide road guards with baton flashlights for convoys operating during the hours of darkness (30 minutes before sunset to 30 minutes after sunrise), or when visibility is reduced to 500 feet or less due to weather conditions.

(c) Normally, post road guards from 50 to 100 meters from the convoy crossing. Increase or decrease this distance depending upon the terrain, traffic, and weather conditions. Do not post road guards in traffic blind spots, such as around sharp or obscured curves, over hills, or in low places that would hide or conceal the road guards from oncoming traffic.

(d) No more than two convoys will be permitted on any one road at a time. Range Operations will track convoys; if a unit requests to open a route that has active convoys, Range Operations will have unit stand-by until the route is clear.

(6) Movement of tracked vehicles.

(a) The maximum speed for tracked vehicles is 20 MPH.

(b) Tracked-vehicle convoys do not require lead vehicle if headlights are used. A wheeled- trail vehicle or a wheeled trailer with operable lights is still required.

(c) Each tracked vehicle will have a track commander who will maintain communications with the driver. The driver may not act as track commander. Do not operate tracked vehicles without combat vehicle crewman (CVC) or Advanced Combat Helmet (ACH) equipped with an intercommunication system.

(d) Tracked vehicles on the Bloodland Range Troop Trail are prohibited unless approved by the RO.

(e) Use ground guides (front and rear) when moving in a confined area or where troops are bivouacked.

(f) Ensure that safety pins are properly affixed when hatch covers are open. Personnel will not ride on top of any tracked vehicle.

(g) Operation of tracked vehicles within the Riparian Management Zones is limited to established gravel roads and is not permitted without written authorization from Range Operations. Refer to the environmental overlay for the extents of these areas.

(7) Blackout Drive Operations. Blackout drive operations are defined as movement of vehicles during hours of darkness where light discipline is in effect for the operation. Under blackout drive conditions, blackout lights will be used and the truck/track commander of the vehicle may use night vision goggles. All blackout drive operations outside of training areas specifically designed for vehicle operations (closed course) must be approved by the RO. Once approved, an overlay is required 3 working days in advance of the training event.

(a) Blackout drive operations for IET Soldiers, to include the Officer Basic Course, 58th Transportation Battalion, and the Marine Corps Truck Driver's Course are only authorized on the blackout drive course at TA 236. MP units will train at TA 225 and TA 231. Other blackout drive training will be coordinated with Range Operations.

(b) A request for blackout drive operations for FORSCOM, Reserve, and National Guard units must be submitted, with an overlay to Range Operations for approval by the RO prior to being scheduled through DPTMS Range Operations Scheduling Branch.

(c) Personnel authorized in blackout drive areas include troops in training and personnel on official military business. POVs will not travel in blackout drive areas during the hours of darkness unless on official military business. If a POV must enter a blackout drive area, parking lights will be used. Emergency vehicles responding to a call will travel with full service lights. Other vehicles will stop and allow emergency traffic to pass before continuing under blackout drive conditions.

(d) If blackout drive operations are halted by white light, blackout drive operations will cease for a period of 45 minutes.

(e) During periods of reduced visibility, blackout drive training may be suspended. The RO will make this decision and notify affected units.

(f) Passing is prohibited under blackout drive conditions.

(g) The maximum speed under blackout drive conditions is 15 MPH.

(h) Tactical night blackout convoys on public traffic routes are prohibited. Vehicles operating on or crossing public traffic routes will use headlights on low beam.

(8) Vehicles that do not constitute a convoy will cross public traffic routes without interrupting the traffic flow. Vehicles will stop at the edge of the right-of-way and the senior occupant of the vehicle will ensure that it is safe before crossing.

(9) The Bloodland Range Troop Trail is closed to wheeled vehicles except for trail vehicles following foot marches, and emergency and maintenance vehicles.

(10) Night driving operations are defined as movement of vehicles during the hours of darkness with the use of full service lights (headlights) and markers.

(11) MP convoys can travel in close column (15-20 meter interval), open column (75-100 meter interval), or infiltration (where vehicles leave in irregular patterns alone or in small groups).

d. Foot marches. A foot march is any movement of troops on foot, outside the cantonment area, for more than 1 kilometer (km).

(1) Conduct foot marches IAW this regulation, FLW Reg 385-10, Chapter 11, Soldier Movement on Foot, and FM 21-18 Foot Marches.

(2) All movement by foot or vehicle will be scheduled through Range Operations. Foot marches crossing major roads will consolidate and post road guards to quickly move the unit across the road to reduce traffic congestion.

(3) Radio communication will be established with Range Operations prior to movement and maintained for the duration of the march. If communication is lost, movement will be halted until communication has been re-established with Range Operations.

(4) Foot marches are restricted to the areas outlined on the map overlay submitted to Range Operations. Foot marches on the Bloodland Range Troop Trail do not require a clearance or map overlay; however, continuous communications with Range Operations is mandatory. The only authorized foot marches through TA 244 will be conducted on FLW 5.

(5) When road conditions are **RED**, Range Operations will not approve any unit to conduct a foot march without the BDE Commander's approval.

(6) Units will not conduct foot marches on scheduled blackout routes during the hours of darkness without approval from Range Operations.

(7) Trail vehicles are required for all foot marches of 1 km or more outside the cantonment area, including the troop trail. Vehicles will remain 25 to 100 meters behind the column and carry enough potable water to resupply all marchers. Trail vehicles will remain with the unit at all times during the march. If the unit marches by platoon, each platoon will maintain communication with a trail vehicle. If the trail vehicle must leave the foot march, the unit will halt until the trail vehicle returns. Trail vehicles will be government vehicles.

(8) Ambushes conducted during tactical foot marches will be at least 100 meters off main roads (300 meters if using agent CS or smoke). React to Contact within 100 meters from the road does not require a reservation for the MA. Upon completion of training, police all brass and residue.

(9) Rest breaks during foot marches will not interfere with the passage of traffic on roadways.

3-20. Prevention of heat illness and cold injuries

a. Prevention of heat illness and cold injuries requires continual emphasis and supervision at all levels. Commanders will develop and implement detailed programs for the prevention and treatment of heat and cold injuries.

b. Commanders should also coordinate with the Preventive Medicine Service of the Medical Department Activity (MEDDAC) for assistance in developing their programs.

c. Commanders will ensure that there is a positive notification system to provide all levels of their organization with timely knowledge of current wet bulb globe temperature (WBGT) index and wind chill factors. Range Operations will conduct an hourly network call providing information on the current WBGT index or wind chill to all units training on the range complex. Each unit is responsible for implementing internal controls to ensure the safety of their Soldiers. The WBGT provided by Range Operations is taken in the vicinity of Range Operations building 5260; units are cautioned that the WBGT may differ at their locations. It is imperative that each unit commander acquire a WBGT kit for increased accuracy at their training location. National stock number (NSN) for the WBGT is 6685-01381-3023.

d. All supervisory personnel and trainers will be familiar with and have in their possession the GTA 05-08-012 (Individual Safety Card) when training Soldiers. It is available at the Training Aids, Devices, Simulators and Simulations (TADSS) building 12350.

e. During the hot weather season when temperatures exceed 75%, all units training within the range complex are required to use a WBGT kit. Commanders of units will ensure that one serviceable WBGT kit is issued to each training company.

f. Hot and cold weather uniform modifications will be made at the discretion of the unit commander.

g. Acclimatization to mission oriented protective posture (MOPP) training and the physical condition of personnel are primary factors used when planning permanent party MOPP training exercises. MOPP gear adds 10 degrees Fahrenheit to the WBGT index. During periods of warm weather, MOPP 4 training time will comply with GTA 05-08-012 and FM 3-11.4 Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection.

h. Commanders will ensure that adequate warm-up facilities are available whenever outdoor training is conducted during cold weather.

i. Units conducting training on the range complex must have ice blankets and ice available from 1 April through 1 October.

3-21. Hazardous noise areas

Adequate hearing protection is required on all range firing facilities. Areas to the rear and sides of firing positions are hazardous noise areas. All personnel entering these areas are required to wear hearing

protection. Range OICs will ensure hazardous noise areas are properly marked and noted in safety briefing. The following are distance (in meters) guidelines to reduce the impulse noise-hazard levels to 140 decibels.

Weapon/System	REAR	SIDES
Rifles and machine-guns up to 7.62mm	18	18
.45 cal and 9mm pistol	30	30
.50 cal machine-gun	30	30
MK19	30	30
AT-4 and BDM	250	250
M203 grenade launcher	50	50
Hand grenades	50 Radius	
MICLIC line rocket	1200 Radius	

3-22. Rappelling

- a. Conduct rappelling operations IAW this regulation.
- b. Range Operations will approve all rappel operations. Only approved rappel sites authorized by Range Operations will be used.
- c. Mandatory equipment for rappelling includes Army combat helmet with chinstrap, standard 120-foot nylon climbing rope (two per lane), one snap link with gate, and one pair of issue gloves. Only government-approved climbing equipment is authorized. No homemade devices are allowed.
- d. Responsibilities.
 - (1) Commanders will ensure that—
 - (a) There is one RSO for every 4 lanes of rappelling.
 - (b) RSOs have a current FLW Form 377-1.
 - (c) Rappel Point Safeties must possess a current FLW Form 377-1 and an FLW rappel certification card. Students in the Sapper Leader Course may serve as rappel point safeties after they have completed the applicable blocks of POI training. Range Operations must approve civilian sources and proof of certification from other commands.
 - (d) There will be no less than two qualified rappel point safeties for each lane of rappelling.
 - (e) All rappels will be conducted with double ropes and sufficient equipment.
 - (f) All rappels will be properly belayed.

(2) Range Operations will inspect all authorized rappel sites quarterly for safety (anchor points, cliff facing, loading and unloading platforms). A record of all rappel site inspections will be sent to DPTMS and be on file at Range Operations.

(3) The MSO will inspect all authorized rappel sites annually for safety certification and provide Range Operations with a copy of the inspection.

e. Safety measures.

(1) Establish and maintain communication with Range Operations during all rappel operations.

(2) Conduct a safety briefing prior to all rappel operations.

(3) Inspect all rappel equipment prior to the beginning of training and after every 10th rappel for cuts, frays, and anchor point tie-offs. Pad the edge of cliffs to prevent damage to the ropes.

(4) Units will have a medic or combat lifesaver with aid bag and backboard on site during all rappel operations. Medical personnel, in a support capacity, will not participate in rappelling.

(5) The RSO will be positioned on the top of the rappel point overlooking and supervising rappel operations.

(6) Locate one instructor at the top of the rappel point, tied off by a safety line with a bowline around the waist or snap-linked to a harness and anchored to an anchor point. He is responsible for final safety checks and the hookup of Soldiers descending the rappel point. Place a second instructor at the bottom of the rappel point to observe and anchor the descent of the Soldier from the top.

(7) The rappel rope is anchored to the anchor point at two points, wrapping one end twice around a firm anchor, and then tying it to the remainder of the rappel rope with a bowline. Always use a double rope.

(8) When rappelling from cliffs, a safety check of the cliff will be conducted by a rappel point safety. This check will include, at a minimum, a rappel down the cliff, checking for hazardous conditions. These hazards include, but are not limited to, loose rock, dirt, mud, sharp rock edges, and rappel ropes becoming entangled either on themselves or around rocks or trees. Should any hazardous condition exist, an attempt will be made to correct it before training begins. Corrections include knocking any loose rock off cliff faces, cleaning away any slippery material, and checking ropes so they run freely to the bottom. Training unit commander will make weather call to stop training when winds are higher than 15 MPH. When winds reach 25 MPH or higher, the range NCOIC is authorized to stop training due to inclement weather.

(9) A qualified belayer will belay when clearing cliffs of safety hazards.

(10) Warrior Tower will be governed by TRADOC and FLW guidance.

(11) Rappel Sites are listed in Appendix D.

3-23. Severe weather procedures

a. Upon receipt of a severe weather warning, Range Operations will notify units by conducting a net call.

b. Upon receiving a weather alert by Range Operations, commanders will determine if training should be suspended or cancelled.

c. Depending on the range or training area location, an appropriate number of storm shelters are positioned at various locations throughout the Range Complex (see Appendices B-F for exact locations and numbers). The range cadre, OIC and RSO will identify the location of the nearest storm shelters in the event that the unit would need to evacuate to the shelters. The range cadre and or unit will execute on live fire ranges tornado procedures contained in Appendix O of this regulation.

d. In the event a tornado is sighted or the installation loud speaker system sounds while personnel are on ranges/training areas, move personnel to the nearest storm shelter site. If there is not enough time to reach the storm shelters, move from the tornado's path at a right angle. If there is no time to move, personnel will assume a squatting position in the nearest depression.

e. In the event of an electrical storm, take the following precautions, as a minimum, consistent with the nature and severity of the storm:

(1) Place weapons at least 50 feet away from personnel.

(2) Properly ground all generators and equipment.

(3) Evacuate personnel from areas containing power lines, high-tension cables, and television communications antennas.

(4) Personnel riding in open vehicles should dismount and move approximately 100 meters away from the vehicles.

(5) Avoid large open spaces, hilltops, wire fences, isolated trees, poles, and metal buildings.

(6) Avoid using phones and radios. Ensure that the antennas on radios are collapsed.

(7) If you are in an exposed area and feel static electricity (for example, your hair stands on end) assume a squatting position with your hands on your knees. Do not lay flat on the ground or place your hands on the ground.

(8) Personnel in bleachers or in a group should disperse quickly. If in water, they should emerge immediately upon the approach of a thunderstorm.

(9) Suspend all training until the storm has ended. Also, keep all radio and telephone communications to a minimum.

f. Unit commander will make weather call to stop training on live-fire range when winds are higher than 15 MPH. When winds reach 25 MPH, the range NCOIC is authorized to stop training due to inclement weather.

g. Units that have training cancelled due to weather will coordinate an alternate date/time with DPTMS Range Operations Scheduling Branch. Coordination will be accomplished within 3 working days of cancellation.

h. Flash flooding may occur after significant rainfall. Never attempt to cross low-water crossing or river and stream ford sites.

3-24. Military operations on urban terrain (MOUT)

a. Upon arrival at the MOUT training site, the Range OIC or RSO will notify Range Operations of their intent to occupy the site.

b. CS is not authorized at the MOUT (TA 230) training sites. Smoke and pyrotechnics can be used with permission from Range Operations and IAW paragraph 4-7 of this regulation. When smoke is used, road guards will be posted at all roads leading to and from the urban terrain site.

c. Smoke, pyrotechnics and blanks are not permitted in the sewer system.

3-25. Medical support

a. Emergency medical support for units training outside the cantonment area is requested through Range Operations, (573) 596-2525, or through the Range Operations frequency. For support, contact Range Operations with the following information:

(1) Accident site or pickup point (grid coordinates, range, training area, or common name).

(2) Number of casualties.

(3) Brief description of injuries and any special requirements.

b. Be prepared to send a knowledgeable person to meet and guide medical personnel to the accident.

c. If the situation permits and it would not cause further injury to the patient, units may be required to move injured personnel to a pickup point designated by Range Operations.

d. Units conducting tactical training within the cantonment area contact Range Operations for medical support in the event of an accident or injury.

e. Units will provide their own non-emergency medical support in the form of a certified combat lifesaver or approved alternative through RO. Use good judgment in requesting use of ambulance, however, when in doubt, request emergency medical service.

f. Forward requests for field medical support to DPTMS. Requests must be received a minimum of 6 weeks prior to the support date.

g. It is the responsibility of the range cadre to be familiar with the location of their range or training area's medical evacuation (MEDEVAC) landing zone.

3-26. Pest management

To request tick spraying of a training area the request must be submitted at a minimum of 2 week prior to the first date of training. Once the tick drag is done by Preventative Medicine and if the area requires spraying there is a 24/48 hour waiting period before a unit can occupy for training. Unit must submit a request through Preventative Medicine, website:

http://glwach.amedd.army.mil/patient_care/pmd/enviro_health.htm. On the Preventative Medicine home screen select Insect Spraying Form (located at the upper right column). Complete the form and submit.

3-27. Fire prevention and control

a. Vegetation fire. In periods of dry weather, the threat of vegetation fire danger is high. Therefore, the following guidelines will be observed:

(1) In order to prevent and avert serious vegetation fires, the Fire Danger Class Restriction Chart at Appendix H must be adhered to at all times. This chart has been developed to reduce property damage, lost training time, and injury to personnel to a practical optimum; this is not an attempt to prevent all fires and curtail all fire starting activity. Fires will start and must be extinguished; however, if the guide chart is adhered to they should be small and easy to extinguish.

(2) All personnel in range and training operations will remain alert and report fires immediately to Range Operations, giving the location and approximate extent of the fire and action being taken to deal with the fire. Additionally, Range Operations will immediately notify the Fire Department regardless of fire size, and the DPW Environmental Division regarding date, time, and location for incorporation in air monitoring analysis.

(3) In the event of a fire on any range or training area, all personnel come under the control of the Range OIC, who will take charge of directing the firefighting activities until relieved by the fire department. The Range OIC will not, under any circumstances, commit troops to fight fires forward of the firing line without first obtaining clearance from Range Operations to move downrange. All personnel entering a burning impact area are to be aware of the inherent hazards associated with a dud/UXO-laden area.

(4) All personnel will remain at the site until the fire is extinguished or until Range Operations or the Fire Department Incident Commander releases them.

(5) The OIC of each range and training area will develop and implement a firefighting plan for the area. Ranges that use tracer or pyrotechnics will maintain at least six long-handled shovels, 12 heavy-duty leaf rakes, and one ax for fighting vegetation fires.

(6) The provisions of FLW Reg 420-1 Troop Support to Combat Vegetation Fires apply to the use of troop support to extinguish a fire.

(7) Open fires are prohibited. Fire are permitted in burn barrels, metal fire rings or other confined unit that has been approved for use by the fire department. Unit must have an approved request through the RO and a burn permit issued by the Fire Department, and then only with the approval of Range Operations immediately before starting the fire.

(8) The Natural Resources Branch, DPW, conducts a prescribed fire (controlled burning) program to reduce fire hazards, maintain open areas for training activities, and improve ground cover for soil protection and wildlife habitat. A firebreak system has been developed and is maintained in order to contain fire in high-hazard areas such as tracer firing and demolition ranges and to allow controlled burning. The Natural Resources Branch, DPW, will maintain close coordination with Range Operations in executing this program.

b. Space heaters.

(1) The Fire Department policy is that any space heater approved by the Army for use in a field environment is permitted for use. Set up and use space heaters in strict compliance with manufacturer's operating instructions and all applicable TMs and regulations.

(2) Install the space heater on level ground, with noncombustible flooring, at least 3 feet from shelter walls. In tents with wooden floors or wooden sheds, install space heaters as follows:

(a) Construct a sandbox at least 36 inches long by 36 inches wide by 4 inches high. Place a sheet of metal on the bottom of the sandbox.

(b) Fill sandboxes with 3 1/2 inches of lightly packed sand. Do not use gravel.

(c) Place space heater in the center of the sandbox on two 8-inch by 16-inch concrete masonry blocks. Place space heaters at least 3 feet from tent or shed walls.

(3) Shelters using space heaters should be placed a minimum of 30 feet apart. Smoking is prohibited in tents and sheds containing wooden floors.

(4) Operation of space heaters.

(a) Train all space heater operators IAW AR 600-55 and ensure they are familiar with TM 10-4500-200-13. In IET units, cadre personnel are the only persons authorized to operate and maintain space heaters.

(b) Do not leave space heaters in operation unattended. Units operating space heaters will have one fireguard in each tent with one serviceable 5-pound Type ABC rated dry- chemical fire extinguisher for each space heater in operation. Fire extinguishers installed in facilities are for the protection of real property and will not be taken to the field. Extinguish fires in space heaters when space heaters are no longer needed. Do not use fire extinguishers to extinguish space heaters except during an emergency.

(c) Place all ashes in a covered metal container located a minimum of 15 feet away from any combustible materials

(d) Only use fuels in space heaters that are IAW the heater design and TM.

(e) Never use adapter kits to convert Type I (solid fuel) space heaters to Type II (flammable liquid) space heaters. Never use flammable or combustible liquids, presoaked wood, ammunition, or ammunition by-products to start solid fuel heaters.

(f) Unit fire wardens will conduct weekly inspections of all space heaters in operation. Pay particular attention to the installation of the space heater and that it is free of soot and properly secured.

(5) Report all fires outside the cantonment area to Range Operations and the Fire Department.

3-28. Noise Complaints

a. Detonations at the training ranges are a possible source of noise complaints from off-post residents. The intent of the installation is to manage operational noise issues and community relations to maintain sustainable training capabilities and prevent encroachment.

b. Public Affairs Office (PAO) is the primary office responsible for dealing with noise complaints to include recording, archiving and addressing noise complaints.

c. Most noise complaints will involve military aircraft, many of which are controlled by Whiteman Air Force Base (AFB). There are also noise complaints resulting from blasting operations at the quarry. Detonations on the training ranges are also a possible source of noise complaints.

d. Noise complaints maybe called directly into Range Operations, PAO, SJA, or other offices. Regardless of who receives the initial call, all complaints should be referred immediately to PAO.

e. The Operational Noise Management Program Complaint Investigation Report Form contained as Appendix W, will be used to collect noise complaint information. The installation Directorate of Public Works (DPW) office maintains the installation Operational Noise Management Plan. The POC is Directorate of Public Works, Environmental Division, 573-596-2108.

Chapter 4

RANGE FIRING

4-1. Who may be an Officer in Charge (OIC)/Range Safety Officer (RSO)/Smoke Control Officer (SCO)

a. A commissioned, warrant, or noncommissioned officer (NCO) in the grade of E-6 (small arms and machine guns) or above (civilian GS-7 or above), from the training or firing unit chain of command may perform duties as Range OIC/SCO. EOD team leaders will assume duties as OIC for all EOD operations.

b. A commissioned, warrant, or NCO in the grade of E-5 (small arms or machine guns) or above (civilian GS-5 or above) from the training or firing unit chain of command may perform duties as RSO. Civilian contractors may serve as RSO ONLY.

c. The RSO on combined arms live-fire exercises (CALFEX) will be of the grade prescribed in DA Pam 385-63 Range Safety based on the complexity of the exercise and number of participants (such as squad or platoon).

d. All ranges will have a certified RSO present on the firing line during live-fire. The chain of command to which the RSO is assigned will have complete responsibility for all aspects of firing and firing safety.

e. Unit commander will designate OIC and RSO before training begins. The unit commander will ensure that the RSO knows his duties and has qualified with the weapons systems involved.

f. All OICs and RSOs/SCOs are required to attend an annual range safety certification program from Range Operations. The safety certification program consist of range safety briefing on the use of the Range Complex as part of the certification and a written test. Upon successful completion a valid FLW Form 377-1 (Range Safety Officer Card) is issued. Unit RSO/OIC will surrender their FLW Form 377-1 to range NCOIC while on the range. All OICs and RSOs/SCOs will also receive an ITAM sustainable range brief. Additional certification training is required for hand grenade, demolition, or rappelling.

g. Responsibilities of the OIC, RSO, and SCO are detailed in paragraphs 1-4d, 1-4e, and 1-4g, respectively, of this regulation.

h. When personnel performing the duties as OIC/RSO/SCO commit a safety violation or violate a provision of this regulation certification may be revoked by Range Operations. If Range Operations relieves the OIC/RSO/SCO, the range will cease all live-fire until the OIC/RSO/SCO is replaced by a qualified OIC/RSO/SCO and has reported to Range Operations. Requests for recertification will be signed by the brigade commander and approved by the Range Operations Officer.

i. Commanders of artillery, mortar, and armor units will establish and maintain a safety training and certification program for their personnel. Range Operations may randomly test safety-qualified personnel to validate a unit's safety training program.

4-2. Assistant range safety officer (ARSO)

a. A commissioned, warrant, or NCO in the grade of E-5 or above, from the training or firing unit chain of command may perform duties as ARSO. West Point and ROTC cadets, between their third and fourth year, may perform duties as ARSO at the discretion of the unit commander.

b. The principal duty of the ARSO is to enforce safety regulations on the firing line, including weapons inspection prior to moving weapons off of the firing line.

c. ARSO personnel will understand the various safety signals necessary to ensure safe operation of the range.

4-3. Non-military personnel on ranges and training areas

a. The organization or agency will comply with the requirements and procedures established by AR 385-63/MCO 3507.1C, local range regulations, Appendix V (this regulation), and SOPs.

b. Requests for use will be coordinated via staffing paper with the installation Range Operations office, safety office and the Staff Judge Advocate (SJA) office, DPTMS, PAO and submitted to the Garrison Commander for approval. Allow a minimum of 30 days for staffing and approval.

c. The use of civilians/family members during MOUT or urban training is prohibited. Civilian on the battlefield (COB) scenarios will utilize DOD members or civilian contractors hired to perform such duties. Units will coordinate with Range Operations for any contract to perform COB scenarios.

d. Detailed procedures are contained in Appendix V (Civilian on Ranges and Training Areas) in this regulation.

4-4. Small arms range live firing

a. Upon arrival on the range, the unit will have all weapons on status "green," and clear all weapons by conducting a visual inspection of the weapon chamber. Lock bolts to the rear and place the weapon on safe.

b. Communication with Range Operations will be established upon occupation of any range. When ready to initiate firing, the OIC of the range will request permission from Range Operations to go "HOT."

c. Before entering the firing line, unit safety personnel will visually clear and rod (a one piece brass safety rod) every weapon. Unit safety personnel will visually inspect the chamber of the weapon and observe the tip of the rod enter the chamber. Safety personnel will inspect each weapon prior to firing for serviceability. RSO is responsible for ensuring the weapons are rodded properly by the unit safety personnel.

d. All rifles will have the magazine out, bolt to the rear, and placed on safe except during the conduct of live-firing, dry-firing or concurrent training. All other weapons will be cleared IAW applicable FMs or TMs and guidance from the unit commander. Weapons not being used will be stacked or placed in weapons racks, magazine out, bolt locked to the rear, placed on safe, and adequate guards posted for security.

e. Upon completion of firing, Soldiers will perform a four-point safety check. NCO verifies chamber is clear, magazine dropped, weapon on safe, and indicates to tower with a white panel. Soldiers place remaining empty magazines in their ammo pouches. Soldiers move with weapon at low ready position off the firing line to closest clearing barrel. Each Soldier conducts weapons clearing procedures at clearing barrel observed by NCO (final check on the firing line). Soldiers move from the clearing barrel at low ready position to the Ammo Issue Point to return empty magazines from their ammo pouch. While passing, RSO reconfirms each weapon is on safe with no magazine in the magazine well.

f. Weapons carried on the firing line may be carried at the low ready (oriented down range).

g. During live-fire exercises, consider all weapons loaded. Point weapons only at authorized targets.

h. During live-fire exercises, display a red flag from a prominent location at the entrance to the range. Clearly mark the right and left firing limits of each firing range with poles painted red and white. Ensure they are clearly visible from the firing line. The OIC and RSO are responsible for ensuring all firers and range personnel are fully aware of the location of range boundary markers prior to firing. The RSO will ensure that safety fan limitations are not exceeded. During exercises requiring movement, an ARSO will accompany firers to ensure that they are properly aligned and that all weapons are pointed downrange.

i. During night-firing exercises, display a red light and a red streamer from a prominent location at the entrance to the range. Also use red lights to mark the right and left firing limits.

j. Conduct dry-firing away from the firing line in a designated concurrent training area. Personnel in the rank of E-5 or above must supervise dry fires.

k. Smoking is permitted in designated areas only.

l. Running is not permitted on the firing line except on ranges that are specifically designed to incorporate such training.

m. Personnel will not move forward of the firing line until all weapons are cleared and given clearance from the tower.

n. Any individual who observes an unsafe condition during firing exercises will immediately command, "cease-fire." When a cease-fire command is heard, all personnel will repeat it until firing has

ceased. RSO will immediately investigate the unsafe condition, take necessary corrective action, and inform the OIC.

o. All personnel will wear authorized, properly fitted hearing protection when on or near the firing line (see paragraph 3-21).

p. Safety personnel will inspect personnel for brass, ammunition, and residue, and clear their weapons prior to leaving the range IAW the guidance issued by the senior commander.

4-5. Advanced Law Enforcement Training Division (ALET D) Ranges (13-15, SH 1&2) and antiterrorism evasive driving complex (TA 210)

a. The Advanced Law Enforcement Training Division Ranges consists of several stations for firing weapons that may be in operation simultaneously and requires special safety precautions and supervision. The Advanced Law Enforcement Training Division Driving Track consists of a 1.7-mile high-speed track, skid pad, motor pool, and classroom facility. The RSO and OIC are responsible for the overall control and safe conduct on these facilities. Each station of the complex will have an ARSO that is responsible for that station's control and safe conduct. Because the student/instructor ratio is generally never more than 2:1, instructors may simultaneously perform duties as ARSO for the station. All RSO, ARSO, and instructors will be RSO certified.

b. The RSO for the Rappel Tower will have been rappel certified within the previous 12 months.

c. All visitors to the Advanced Law Enforcement Training Division Ranges will report to Range Operations for authorization and instructions prior to entry on the range.

d. Uniform for training is dictated by the existing ALET D SOP and is specific to the type of training conducted. All firers (live-fire or special effects small arms marking cartridges) and instructors will wear safety ballistic eyewear. Hearing protection will be worn during all live-fire events.

e. The OIC for the Advanced Law Enforcement Training Division Ranges and Antiterrorism Evasive Driving Track will establish and maintain communication with Range Operations. OICs will also maintain communication with each of the stations within the range or driving complex at all times.

f. The Advanced Law Enforcement Training Division Ranges SOP outlines special conditions for modified or nonstandard firing positions, weapons handling, target engagement, and movement with a weapon to include running on the range. These activities are authorized only for the specified training as stated in the Advanced Law Enforcement Training Division Ranges SOP. Any deviation from established training SOPs must be submitted, in writing, through DPTMS to Range Operations for approval by the RO.

g. The Antiterrorism Evasive Driving Track SOP outlines special conditions for high-speed, evasive-maneuver driving and safety requirements. The activities are authorized only for the specified training as stated in the Antiterrorism Evasive Driving Track SOP. Any deviation from established training SOPs must be submitted, in writing, through DPTMS to Range Operations for approval by the RSO.

h. Units desiring to use this facility must submit a request through the Special Tactics Training Division, Director of Training, United States Army Military Police School (USAMPS).

i. All range safety procedures outlined in paragraph 4-4 of this regulation apply to the Advanced Law Enforcement Training Division Ranges and Antiterrorism Evasive Driving Track except where stated above.

j. Civilian GS-07 and above or their equivalent may serve as OIC/RSO.

k. Range Operations will provide medical support during all live-fire and rappelling operations conducted on the Advanced Law Enforcement Training Division Ranges.

l. Firers will load on command of their individual instructor or as determined by the firer as required when conducting the gun stress and shoothouse exercises.

4-6. Powder burning

a. Burning of unused powder must be approved by Range Operations and be supervised by a certified representative of Range Operations.

b. Transport excess propellant to the powder burning area in a metal container on a cargo vehicle with a metal cargo bed. Do not transport other material, equipment, or passengers in the cargo bed with excess propellant.

c. Conduct powder burning only at the location given and specified by Range Operations. Powder burning will not take place at the same location within a 24-hour period.

d. Except for a two-man burning detail, all personnel and equipment will be at least 300 meters from the burning site.

e. Only one unit at a time is authorized to use a powder burning area.

f. Mark powder-burning pits with a red flag for daytime burning and a red light for nighttime burning. Space increments 2-3 inches (5-7 cm) deep, 18 inches (45 cm) wide, and as long as necessary. Ignite powder on the upwind side by lighting a starting train of powder at least 12 inches (30 cm) long.

g. Clear brush, grass, and leaves at least 10 meters from the burning area to prevent a fire from spreading.

4-7. Ammunition and explosives care, handling, and safety

a. Adhere to safety precautions contained in AR 385-63/MCO 3570.1C, DA Pam 385-63, DA Pam 385-64, FLW Reg 700-2, TM 43-0001-28, and the appropriate operator's manual when handling, transporting, and firing weapons.

b. Protect ammo from adverse weather elements, to include the direct rays of the sun. Do not remove ammunition from sealed containers earlier than is necessary to prepare it for firing, which includes inspection and maintenance. Precutting of powder charges is prohibited except for controlled demonstrations where a registration has been conducted, or for training in suppressive fire situations. Commanders will ensure that rounds with charges pre-cut are fired safely.

c. Use only authorized fuze wrenches to install the fuze in the projectile. Do not use excess pressure. If the projectile contains a deep fuze cavity, insert supplementary charge into the cavity unless a long intrusion variable trim (VT) fuze (M728, M514, or M513) is used.

d. When affixing artillery and mortar fuzes to projectiles, select modes and time settings IAW TM 43-0001-28. Use minimum range authorized on safety card as it applies to the fuze used.

e. Do not leave ammunition/residue powder unattended.

f. Secure ammunition to prevent any movement.

g. Vehicles loaded with explosives will carry the appropriate US DOT Hazmat placard explosive signs on the front, rear, and each side of the vehicle. Cover or remove signs when explosives are unloaded from the vehicle. Coordinate with the SFO in determining appropriate fire extinguisher requirements.

h. Locate staging areas at least 400 meters from cantonment area boundaries and public traffic routes. Staging areas may be set on established firing positions.

i. Ammunition may be distributed to tactical vehicles IAW the TMs for that vehicle. Propellant and projectiles may be carried on firing vehicles with weapon systems designated for that purpose. Do not transport projectiles while fuzed, except when issued as a fuzed round.

j. Vehicles will not park within 10 meters of fire control equipment of any type.

k. Do not use lights, other than approved electric lanterns or flashlights, near explosives or ammunition.

l. Ensure that two serviceable BC-rated fire extinguishers, 5 pounds or larger, are available in areas where ammunition or explosives are being handled.

m. Separate explosives and components of explosives located in shelters in such a manner that a fire cannot spread from one shelter to another.

n. Clear boxes, containers, dunnage, and packing materials from areas where explosives are handled as soon as contents are removed. Stack in a neat and orderly fashion.

o. Smoking is prohibited in any building, vehicle, or location within 50 feet of buildings or vehicles containing explosives or ammunition.

p. Every precaution will be taken to prevent mixing ball and tracer ammunition with blanks and dummy rounds. Ammunition points for ball and tracer will not be co-located with blank ammunition points. RSO and OIC, with help from unit cadre present, will conduct an "ammo shakedown" and clear all weapons when there is a change in ammunition used.

q. Delinking of small arms ammunition (SAA) or medium caliber ammunition (MCA) is prohibited.

(1) Units are prohibited from delinking a single DODIC of small arms ammunition (SAA) or medium caliber ammunition (MCA) to alter the DODIC's original configuration, such as removing tracer rounds from a ball and tracer DODIC, or removal of individual rounds for use in single fire weapons, such as in sniper rifles.

(2) Units are prohibited from delinking/linking two or more DODICs of SAA or MCA into a nonstandard ammunition configuration.

(3) The only authorized delinking/linking that is permitted of a single DODIC is for the adjustment of the belt length in support of training/qualification (i.e. from 100 round belts to 25 round belts for training) as long as the original configuration (4:1 ball: tracer) is maintained.

r. The OIC of any exercise involving the use of ammunition will conduct an ammunition safety briefing prior to issue. The briefing will cover, as a minimum—

- (1) Dangers of ammunition tampering
- (2) Handling and firing ammunition
- (3) Proper storage
- (4) Steps to be taken in the event of an ammunition mishap

s. Military munitions, to include expended smoke pots and smoke grenades, must be managed IAW FLW Reg 700-2, Appendices L and M, and the Military Munitions Rule (MR2). All grenade spoons and pull rings must be turned in to the Ammunition Logistics Section (ALS). The following information provides general guidance as set forth in FLW Reg 700-2, Appendix F.

(1) Use of military munitions for training activities by using units is considered to be the intended use of the munitions, and does not generate waste (Military Munitions Rule (MR2), Chapter 3, Paragraph B.1). Training units will not take any action, such as removal, transportation, or burial, to dispose of munitions that land on the range. Such actions would be considered disposal of waste under the Resource Conservation and Recovery Act (RCRA) and Military Munitions Rule (MR2, Chapter 5, paragraph B.1).

(2) Regarding munitions which land on the range, EOD personnel will check and certify in place that those munitions that have malfunctioned are rendered safe or destroy such munitions in place (considered a routine range maintenance activity; it is exempt from RCRA under MMR, Chapter 3, Paragraph B.3). Regarding munitions which land outside a range, EOD personnel will contact the Missouri Department of Natural Resources (MDNR) concerning the need for an RCRA emergency permit and will dispose of munitions IAW the terms of such permit.

(3) All range munitions determined to be unsafe misfires and all UXO will be destroyed on-site by EOD personnel during range clearance. Destruction of munitions during range clearance operations is considered a routine range maintenance activity, exempt from RCRA.

(4) Management of range scrap (expended military munitions), must be managed per explosive, safety, and environmental requirements. When range scrap is removed from the range, qualified personnel (as identified by the installation commander) must inspect and certify that they are inert.

(a) Inspection methods include a 100 percent visual inspection. When removed from the range, range scrap is a solid waste and potentially a hazardous waste.

(b) FLW Regulation 700-2, Appendix H, provides a listing of ammunition and explosives currently used in training on this installation. Those items preceded by a plus (+) have been tested by other organizations for hazardous waste (HW) determination. These items are considered hazardous waste based on the tests performed unless determined by ALS to have a market value for recycling as

scrap metal. If there is no market available for these items, prior to removal from the range, the activity will coordinate with the Ammunition Supply Point (ASP) for the return of these items as HW to the Satellite Accumulation Point (SAP) located at the ALS. Those items preceded by two pluses (++) have not been evaluated for hazardous waste determination.

(5) Currently, the Army Environmental Center (AEC) is testing expendable range residue for HW determination. These items will remain on the range until evaluated for HW determination. Contact the DPW Environmental Branch, 6-0882, for further guidance on these items. All other items not preceded by a plus(es) may be removed from the ranges and taken to the ALS for further evaluation/processing as recyclable scrap metal. If not feasible, these expended munitions will be placed in with regular trash refuse once they have been certified explosive free by qualified installation personnel.

4-8. Security of arms and explosives

a. Arms, Ammunition and Explosives (AA&E) will be under continuous positive control. A minimum of two persons will perform guard duty.

b. AA&E will not be left unattended or unsecured.

c. Persons charged with custody of AA&E will have the capability to sound the alarm if a forceful theft is attempted.

d. A system of supervisory checks will be established to ensure that all personnel comply with security procedures. Supervisory checks of the AA&E holding area will be made to ensure that the AA&E being guarded have not been tampered with.

e. Control of ammunition and explosives during field training or range firing will be monitored closely by the OIC and cadre conducting the training. Soldiers who are in a "trainee" status will be closely supervised if used for ammunition detail or to guard ammunition and explosives. Upon completion of training, the area(s) will be policed and unused ammunition and explosives collected for turn-in. Personnel will be checked closely to ensure unused ammunition and explosives are not retained.

4-9. Explosive charges, mines, firing devices, pyrotechnics, hand grenades, and blank ammunition

a. Conduct of demolition training on Fort Leonard Wood IAW DA Pam 385-63, and FM 3-34.214 Explosives and Demolitions. The use of explosive charges, mines, firing devices, pyrotechnics, or hand grenades may be authorized within the confines of an active Restricted Area or Small Arms Range Safety Area (SARSA) as appropriate. Blank ammunition does not require an active Restricted Area or SARSA.

b. Scheduling of Demolition Ranges.

(1) All demolition ranges will be scheduled through RFMSS.

(2) Final approval/disapproval authority for all demolition requests is Range Operations.

c. Maximum Demolition Charges (in net explosive quantity).

(1) Maximum demolition charge (surface) is 100 pounds (lbs). Maximum demolition charge in a steel-cutting bunker is two lbs.

(2) Maximum demolition charge (subsurface) for **RG 33 is 150 lbs**; Ranges 26, 36 and 38 is 200 except for the quarry and EOD operations, which cannot exceed 2,000 lbs without Range Operations approval.

(3) Demolition Effects Simulators (DES) charges will be IAW FM 3-34.214.

(4) Exceptions will be submitted to Range Operations with blast request.

(5) Charge limits may be reduced by Range Operations due to low cloud cover or other safety factors. Range Operations will inform the unit prior to issuing a blast window.

d. Blast Window Requests (request, open, close).

(1) Blast Requests will be submitted for DES, Urban Breach, and Demolitions.

(2) Blast requests will be forwarded to Range Operations no later than 2 weeks prior to the date training is to begin, and will include the following: matrix of explosives and firing devices, diagram, or sketch of blast, and risk management worksheet. See sample blast request at Appendix M.

(3) Before detonation, contact Range Operations and open the appropriate window for DES, urban breach, or demo. While opening the appropriate window, notify Range Operations of the type and size of the charge, location, number of detonations, and the expected time of detonations. Reference the blast request submitted 2 weeks prior. Once notified, Range Operations will issue a blast window with time constraints to execute the detonation. Windows will vary based on amount of detonations. Units are responsible for notifying Range Operations upon completion of detonations.

(4) Urban Breach is a DEMO operation and will be treated with a ten minutes blast window and one shot per blast window. With the exception of the Urban Mobility Breacher's Course (UMBC) and Urban Breach being conducted on RG-33. The UMBC and Urban Breaching can open an Urban Breach window and conduct all of their shot before closing with Range Operations. Demolition will be managed and controlled by unit requesting ten minute blast window and a single shot being fired. Demolition Effects Simulators (DES) will be managed and controlled the same way as convention demolitions are. Units will request a ten minute blast window through range operations. It is important to note that DES does not have a calculated standoff distance, the standoff is the same distance as the charge that is being simulated.

(5) Upon the completion of training, units will report all munitions expended by DODIC to Range Operations.

e. Explosive Urban Entry, FM 3-34.214, Chapter 7.

(1) Each breaching charge is designed and constructed to defeat a specific target. Calculating the Net Explosive Weight (NEW) of the charge will allow the breacher to determine the safe distance for the assault team during detonation. Without this information, the breacher could place the assault team in a dangerous location.

(2) NEW equals the total lbs of explosives expressed in TNT equivalent. The formula is—

$$Qty \times Wt \times RE \text{ Factor} = NEW$$

(3) Construction of Urban Breach Simulated Charges.

(a) The construction of Urban Breach Simulated charges will be IAW materials list in FM 3-3.214; units will not deviate from this material list.

(b) Authorized Charge Types:

- C Charge
- Detonating Cord Linear Charge
- Uli Knot Slider Charge
- Water Impulse Charge
- Doughnut Charge
- Rubber Strip Charge
- Silhouette Charge

f. Utilization of Firing Systems.

(1) Trainers will know the misfire procedures as outlined in FM 3-34.214 as well as the appropriate TM for the type of firing system being used.

(2) When Modern Demolition Initiators (MDI) are used, trainers will ensure that they are familiar with the procedures as outlined in FM 3-34.214 and the Primadet instruction pamphlet.

(3) The electric dual firing system, as outlined in FM 3-34.214, is the preferred method for firing demolitions when positive detonation is required. Trainers are encouraged to use this method to the maximum extent possible in light of training objectives and the tactical scenario.

(4) Use of non-electric dual firing systems, as outlined in FM 3-34.214, may be used for specific training objectives or tactical scenarios.

(a) A test burn of time fuse will be performed to establish the burn rate.

(b) No one will go down range after detonation for a period of time equal to the burn time for the longest piece of time fuse in the firing system, or 10 minutes, whichever is greater.

(c) Dual prime all cratering charges with detonating cord. Never place blasting caps underground. All other caps will be handled IAW FM 3-34.214. Attach electrical and non-electrical caps to the detonating cord above ground.

(5) If possible, detonate charges on soil free from gravel, rock, metal, or other possible missiles to a depth of at least 6 inches. Provide a sandbag barricade of at least 1 m above surrounding level ground between the location of charge and personnel.

g. Demolition Effects Simulators (DES). DES charges are explosives which use detonating cord, blasting caps, MDI, cardboard, sand and chalk to simulate explosives. DES training is not to be confused with Urban Breaching (technique that uses detonation cord as primary explosive). IET units conducting DES or Urban Breach training will require one of the top three unit representatives to be on site for the duration of the training event. DES and Urban Breaching are to be open with an authorized 10 minute demolition event window.

(1) Safety.

(a) Follow all safety precautions in Regulation, TC 5-250, FM 3-34.214, and DA Pam 385-63.

(b) The minimum safe distance (MSD) requirements are the same for DES charges as the charge it simulates and the training being conducted, for example: 40 lbs cratering charge MSD is 342 m; the MSD for 40 lbs cratering DES charge is 342 m. The commander of the unit conducting training ensures proper MSD.

(c) Units are required to post a demolitions guard once DES charges are constructed. At no time will DES charges be unattended.

(d) Units will not combine DES charges with inert training devices at any time.

(2) Authorized DES charges, IAW FM 3-34.214:

- M118 sheet explosive
- M112 (C4) block
- One-pound TNT block
- M5A1 demolition block
- M183 demolition (satchel) charge
- M2A3 fifteen-pound shape charge
- M3 forty-pound shape charge
- Forty-pound cratering charge
- Bangalore torpedo
- M1 military dynamite

(3) Construction of DES Charges.

(a) The construction of DES charges will be IAW materials list in FM 3-34.214; units will not deviate from this material list.

(b) The construction of Improvised explosives devices (IEDs) using real explosives or components of live demolitions is not authorized.

(4) Scheduling DES training events. Units training with DES will be scheduled on a range or training area that is approved for that purpose. If a training exercise is going to utilize multiple training areas/ranges, all applicable land requests must be cleared through Range Operations for DES use (See Blast Requests, paragraph d).

h. Training/Testing Requirements

(1) All personnel instructing in the use of explosives or exercising immediate close supervision in the use of explosives will have a valid FLW Form 377-1 (Range Safety Officer Card).

(2) Units are responsible for training and testing RSOs/OICs on demolitions. Personnel will bring a memorandum signed by the battalion commander or S-3 authorizing them to receive a demolition stamp from Range Operations. Stamps are good for one year.

i. Use of nonstandard items of explosives and field expedient explosives.

(1) The term "nonstandard item of explosive" relates to an item that has—

a Not been accepted and type classified by the U.S. Military.

b Is a standard munition that has been altered to change its characteristic, or to do an essentially different function than that for which it was intended and then used as initially intended. For example, adding excess increments to mortar/artillery ammunition, jamming VT fuzes, or increasing the powder in small arms cartridges.

Use of nonstandard explosives requires waiver approval by the Commanding General, U.S. Army Material Command (AMC), under the provisions of DA Pam 385-63.

(2) The term "field expedient explosive" denotes a standard item of explosive that is combined with other standard explosive items and/or items that are normally nonexplosive by using techniques and procedures outlined in FM 3-34.214 and FM 5-34. Field expedient explosives do not require TRADOC waiver approval to be employed. However, use of field expedient explosives must be approved by the CG, MSCoE. Approval will be granted only after a memorandum and Safety SOP for use of the specific field expedient explosive has been developed and implemented. The MSO and Range Operations must approve a detailed risk assessment.

(3) Unit commanders will determine the requirement to train with field expedient/nonstandard explosives.

j. Cratering charges.

(1) The maximum charge to be fired in training will not exceed 145 kilograms (kg).

(2) MSD for personnel not in missile proof shelters will depend on the net explosive weight of explosive used. MSD for up to 2 kg is 100 meters; for up to 30 kg, 300 m; over 30 kg, 500 meters. All personnel will wear approved protective helmets, IBA, and single hearing protection. Eye protection should be worn. Missile-proof shelters, if strong enough to withstand any material propelled onto it by the detonation and located not fewer than 100 meters from the detonation site, may be occupied by personnel.

(3) All cratering charges will be dual primed with detonating cord. Blasting caps will not be placed underground. Electric or non-electric caps will be attached to the detonating cord above ground.

k. Mines.

(1) Training with non-self-destructing antipersonnel mines (APs) is prohibited unless approved by Deputy Chief of Staff, U.S. Army, or the Commandant of the Marine Corps.

(2) When training with non-self-destructing APs is authorized, the following training is prohibited IAW DA Pam 385-63:

(a) No training with live M14 mines.

(b) No burying of live mines for training purposes.

(c) No training with the M16 APs without the positive safety pin remaining in the M605 fuze.

(d) Disarming/arming live mines more than 25 iterations per mine.

(3) The M18A1 Claymore.

(a) Before firing the Range OIC will:

1 Ensure mines are installed correctly and facing into the impact area and away from friendly troops.

2 Installed only on the command of OIC.

3 Emplaced mines will not be disarmed except by order of the Range OIC.

4 Firing devices will only be connected to the firing wire on the command of the Range OIC.

5 After firing, the impact area will be inspected by the OIC to ensure that all mines have detonated.

(4) SDZ.

(a) SDZ requirements for firing the M18A1 Claymore mine are provided in DA Pam 385-63.

(b) Personnel will not be allowed within 16 meters to the rear of the mine. Firing personnel may occupy an area between 16 and 100 meters to the rear of the mine if they are located in a covered position, lying prone in a depression, or behind a physical barrier. All personnel will wear approved protective helmets, IBA and single hearing protection. Eye protection should be worn.

I. Pyrotechnics

(1) Care and handling of pyrotechnics, particularly simulators, should be of major concern, because when misused or abandoned, they become extremely dangerous. Pyrotechnics will be authorized by the unit commander and approved only by Range Operations for use while training on the range complex. Commanders, OICs, and RSOs will ensure that persons using pyrotechnics or explosive hand-fired simulators are thoroughly trained in the safe control, preparation, and use of these items. See TM 9-1370-207-10, and TM 9-1370-208-10. Pyrotechnics will not be used in any manner that may cause injury or damage to personnel, wildlife, or the environment.

(2) Do not attempt to disarm, disassemble, or make alterations to simulators under any conditions. Personnel using simulators will select a target spot that is free from gravel, sticks, or other objects that may become missiles, and will ensure that no one is within 30 feet of the target spot or within the trajectory of the simulator. **For IET units only, only unit cadre will detonate simulators or other pyrotechnics.**

(3) OIC and RSO must be present when pyrotechnics and/or simulators are being used. Personnel using artillery and hand grenade simulators will wear blast protective, leather work gloves or Nomex fire-retardant gloves and protective eyewear.

(4) Turn in all pyrotechnics with evidence of moisture contamination in the item or any indication of mishandling (cracks, dents, breaks, etc.). Do not use. Do not touch malfunctioning pyrotechnics. If there is a malfunction of any kind with pyrotechnics, they are then considered a Dud/UXO. Mark them in accordance with FM 3-34.214 and report them to Range Operations in a 9-line reporting format.

(5) Pyrotechnics will not be altered in any manner. Use IAW TM 9-1370-207-10 and TM 9-1370-208-10.

(6) The OIC is responsible for the accountability of all pyrotechnics.

(7) IED/UXO. No IED/UXO training will be conducted along the following roads: Missouri Avenue, Polla Road, FLW 1, FLW 8 and FLW 10. All units conducting IED/UXO training along any FLW roads must contact Range Operations and provide overlay describing training aid description, location, length of time in place and unit POC information. IED/UXO will not be constructed with live demolitions or components such as det cord and blasting caps. The only exception is a formal program of instruction taught on the installation that has been approved and reviewed by the safety office and Range Operations.

m. Hand grenades.

(1) See Appendix B for unit personnel requirements when training on the grenade range (Range 31).

(2) Certification. Personnel performing the duties as OIC/RSO or ARSO on the hand grenade range will possess a valid Range Safety Officer Card with Grenade Stamp. Units may coordinate directly with Range 31 to schedule their personnel for certification. Once certified, Range 31 will provide the unit with a memorandum signed by the OIC listing the names of the personnel who have been certified. Units will provide this memorandum along with each certified individual's FLW Form 377-1 (Range Safety Officer Card) to Range Operations who will annotate them with the Grenade Stamp.

(3) Under no circumstances will hand grenades be stocked in the throwing bay.

(4) Only one hand grenade at a time will be thrown into each bermed impact area, regardless of the number of throwing bays being used. Another hand grenade will not be thrown until the OIC has assured that the preceding hand grenade has exploded. Dud/UXOs will be reported to Range Operations immediately. Training will cease immediately in the bay that contains the UXO and hand grenade throwing will not be resumed in that bay until EOD personnel have destroyed the dud/UXO grenade.

(5) Personnel conducting police call of practice hand grenades will wear gloves.

n. Blank ammunition.

(1) Blank ammunition will not be fired at personnel at distances less than 25 meters. Use of blank ammunition in hand-to-hand training is prohibited.

(2) The person signing for the ammunition will ensure that each round is blank ammunition; the ammunition has not been altered or tampered with in any way, and that grenade cartridges are not being used as blank ammunition.

(3) Safety personnel will visually inspect all ammunition and magazines for use in exercises requiring blank ammunition. Such inspections are required prior to deploying the individual to their firing position.

(4) Do not store or transport blank ammunition in any ammunition box or container that contains ball ammunition.

(5) After training has been completed using blank ammunition, the RSO ensures each weapon is cleared by locking bolt to the rear and rodding the weapons.

(6) Blank and ball ammunition will not be issued from the same issue point. Soldiers will not possess ball and blank ammunition within the same training scenario with the exception of the Convoy Live Fire Ranges (CLFR). On the CLFR, after the blank firing is complete, a cease fire will be called with Range Operations so that the firers and safeties can conduct a police call of all expended and non-expended blanks. At the completion of the police call, the range cadre will call for another "hot time" with Range Operations to conduct the live fire scenario. The RSO will ensure a comprehensive "ammo shakedown" is conducted prior to using different ammunition.

o. Commercial fireworks. Commercially manufactured fireworks (those for civilian use) will not be handled, stored, or used in any way by military or civilian personnel on FLW.

p. Safety.

(1) Missile hazard.

(a) Explosives can propel lethal missiles (rocks, gravel, shrapnel, etc.) for great distances. The missile hazard from steel-cutting charges extends a greater distance under normal conditions than that from cratering, quarrying, or surface charges of bare explosives.

(b) Personnel in defilade are provided additional protection within the surface danger zone. Defilade can be below ground or an area above ground protected from the blast source by a natural or artificial barrier capable of deflecting or absorbing blast fragments. The installation RSO will assess the adequacy of a natural or artificial barrier.

(c) The following criteria gives distances at which personnel in the open are relatively safe from missiles created by bare charges placed in or on the ground, regardless of the type or condition of the soil.

1 For charges weighing less than 27 lbs, the minimum missile hazard distance is 300 meters.

2 For charges weighing more than 27 lbs, the distance at which personnel in the open are relatively safe from missiles can be calculated from the following formula. Safe distance (in meters) is equal to 100 times the cube root of the pounds of explosives. Safe distance (m) = $100 \times \sqrt[3]{\text{pounds of explosives}}$. Safe Distance in feet is equal to 300 times the cube root of the pounds of explosives ($300 \times \sqrt[3]{\text{pounds of explosives}}$). See FM 3-34.214 for minimum safe distances calculated for selected charge weights.

(d) For personnel, provide missile-proof shelters designed to prevent fragment and debris penetration when charges are placed to demolish solid material. These shelters will be placed at least 100 meters from the detonation site and will be strong enough to withstand the heaviest material that might be thrown at them.

(2) Demolition safety.

(a) Electric blasting caps can be detonated by radio frequency. Calculate MSD from Table 6-1 in FM 3-34.214.

(b) No detonation will occur within 300 meters of any road unless road guards are posted and traffic is halted.

(c) The RSO will adhere to safety restrictions and distances listed in DA Pam 385-63, FM 3-34.214, or appropriate training manual, whichever is greater. The RSO must be on site and ensure that Range Operations approves all charges as indicated by the Demolition Reconnaissance Report.

(d) Firefighting materials, as determined by the RO and the SFO, will be available at all times in blasting areas to suppress vegetation fires.

(e) Multiple demolition blasts will be separated by intervals of at least one minute, but not more than 10 minutes.

(f) Discontinue all demolition training operations during or on the approach of an electrical storm or severe dust storm.

(g) Do not conduct demolition training within 155 meters of energized power transmission lines.

(h) Remove all other possible sources of static electricity from the area when electric firing is planned.

(i) Detonate charges electrically from a position that allows a clear view of the demolition area and the immediate vicinity.

(j) Conduct steel-cutting only on Range 33 or Range 38 in a steel cutting bunker. Maximum charge weight in the steel cutting bunkers is two pounds.

(k) Conduct timber-cutting (Abatis) in accordance with FM 3-34.214. Only ten-inch diameter trees or less may be used. DPW Environmental Division will identify trees and coordinate with Range Operations to cut the trees.

(l) Due to maximum safe distances and surface danger zones, some fans may overlap and some training facilities will be closed when units are using ammunition and explosives. Range Operations will monitor the MSD and SDZ for all range complex areas and inform units that may be affected. No unit will be within an active SDZ if another range is "HOT." In the event of a conflict, Range Operations has final control over which unit will suspend training.

(m) The gases released by the detonation of common explosives are toxic. Positioning personnel upwind from the detonation point should avoid breathing these fumes.

(n) Misfires will be handled in accordance with FM 3-34.214.

(o) Report the location of dud/UXOs or abandoned pyrotechnics to Range Operations.

4-10. Mortar and artillery fire

- a. Artillery and mortar fire are restricted to indirect fire, except for special circumstances approved by Range Operations.
- b. Overhead fire requires certified ammunition and will be conducted IAW AR 385-63/MCO 3570.1C and DA Pam 385-63. Lots for artillery fuzes, projectiles, and propellants must also be certified for overhead fire.
- c. Units firing are responsible for coordinating with Range Operations to determine if the Cannon Range is operating on the day they are scheduled to fire. Range Operations will establish controls to ensure a cease-fire while aircraft are on station.
- d. Unit commanders or the S-3 will hand-carry copies of their firing data to Range Operations for verification that firing is planned within the prescribed safety limits.
- e. Safety overlays must be submitted to Range Operations for approval a minimum of 6 weeks prior to firing. Safety fans will be drawn on overlay paper or clear plastic using FLW Installation Map 1:50,000.
- f. The firing unit will ensure that the correct firing data is plotted by each FDC and correctly placed on their weapon systems before firing downrange.
- g. Conduct of firing requirements.
 - (1) Indirect-fire weapons will only be fired from established mortar and artillery firing points. For artillery, the base piece must be within 100 meters of the firing-point marker. Range Operations maintains a survey list for all approved artillery and mortar firing points. Do not use non-established firing points without approval of the RO.
 - (2) Indirect-fire weapons will be laid for live-fire operations only with a properly declinated aiming circle or other Army approved survey device. A second properly declinated aiming circle will be used to verify the lay of the weapon. Orienting angle is the preferred method of laying the battery. The grid azimuth method will only be used if survey is not available. There will be no more than 2-miles variance between the "lay" circle and the "safety" circle, regardless of the method of lay used.
 - (3) Using units will establish and maintain an artillery safety training and certification program for their personnel.
 - (4) The OIC is responsible for all aspects of safety in the firing unit and on the assigned firing range/position.
 - (5) Before departing for firing points, the OIC will ensure that—
 - (a) An approved safety overlay has been submitted to Range Operations.
 - (b) He is familiar with all publications concerning the activities to be conducted and weapons used.
 - (c) He has in his possession required maps, this regulation, DA Pam 385-63, and current publications pertaining to the unit's activities and weapons used.

(d) RSOs are properly qualified in their duties and have valid FLW Forms 377-1 in their possession.

(e) The weapon has been bore scoped within prescribed time frames.

(6) Before firing, the OIC will ensure that—

(a) All participating personnel are familiar with current safety regulations pertaining to the unit's activity.

(b) The bore sight and lay of each weapon is correct.

(c) Minimum elevations (determined by the RSO) will be compared with the firing battery executive officer's minimum elevations for site to crest, using the larger of the two as the minimum elevation.

(d) Communication has been established with Range Operations and a "HOT" status for permission to fire has been obtained from Range Operations.

(e) Maximum safe quadrant that will ensure illuminating projectiles impacting in the fans is computed.

(f) Safety overlays have been reviewed and support the intended training.

(g) Approval has been received to fire illumination, if applicable.

(7) During firing, the OIC of the firing unit will ensure that all personnel on or near firing points are wearing ACH helmets and authorized and properly fitted hearing protection.

(8) Before firing, the RSO will—

(a) Verify that Range Operations approved the range request.

(b) Verify that all range safety overlays comply with the firing data.

(c) Verify the boresight and lay of each weapon.

(d) Compute the minimum elevation and the data from the safety diagram.

(e) Supervise the placing of safety stakes and the raising of the range flag.

(f) Ensure that ammunition is handled and stored safely and checked for obvious defects.

(g) Inform each section chief of the right and left deflection limits, minimum and maximum quadrant elevation, and the minimum time setting.

(h) Check the line visually.

(i) Establish internal safety communications. Ensure that permission to fire is granted by Range Operations, and ensure compliance with all cease-fires/check-fires.

(j) Verify that weapons have been bore scoped, and the correct entry is made in the logbook, DA Form 2408-4 (Weapon Record Data), and verified by the commander.

(9) During firing, the RSO will—

(a) Enforce all safety regulations at all times.

(b) Ensure each weapon system fires a minimum of one round to verify gun target lay.

(c) Not allow weapons to fire with an incorrect setting or charge that would cause a projectile to land or burst outside the safety limits or permit overhead fire of ammunition or fuzes not cleared for overhead fire.

(d) Command cease-fire/check-fire immediately when an incorrect setting or charge that would cause a projectile to land or burst outside the safety limits is detected.

(e) Report all duds/UXO immediately to Range Operations.

h. Restrictions are as follows:

(1) Entry into surface danger areas, restricted areas, or off-limits areas is prohibited. Report violators to Range Operations.

(2) Access to impact areas is prohibited without special authorization from Range Operations.

(3) Firing unfuzed projectiles on any FLW firing point is prohibited.

(4) Do not bring gun tubes down to loading elevation or correct for aiming post displacement until initial rounds have impacted safely in the impact area.

(5) Use only mechanical fuze setters. Do not use fuzes loose enough to be set by hand.

4-11. Aerial gunnery

Cannon Range is used as a bombing/strafing range for fixed-wing high-performance aircraft. The scheduling activity for this range is the 131st Tactical Fighter Wing (TFW), Detachment-1, Air National Guard, Fort Leonard Wood, Missouri. The scheduling of this range will be IAW Chapter 2, this regulation.

a. High-performance aircraft.

(1) Commanders of aircraft will comply with applicable regulations and range SOP safety directives applicable to live-fire/bombing procedures.

(2) Aircraft will confine their activities to flying above 3200 above ground level (AGL), south to north. Range Operations should be notified at least one hour in advance of any deviation from this flight path so that necessary ranges can be closed down. Altitude over active small arms ranges will be at least 2200 feet AGL.

b. Helicopter gunnery.

- (1) Conduct all firing from a hover below 200 feet AGL.
- (2) All firing will be IAW applicable regulations and an approved range SOP.
- (3) A representative from the firing unit must be briefed by Range Operations personnel prior to firing.
- (4) At minimum, a preflight briefing will be conducted by Range Operations with the unit OIC/RSO prior to firing on the range.

4-12. Privately owned weapons (POW) firing (other than hunting)

- a. The provisions of FLW Reg 190-6 will be complied with in regard to privately owned weapons (POWs).
- b. The POW range is authorized for use by all military personnel, their family members, and DOD civilians with a valid FLW Form 377-1.
- c. Sighting and practice firing of privately owned rifles, shotguns, and pistols, both metallic and black powder, are permitted on this facility.
- d. Administrative requirements are as follows:
 - (1) Requests to utilize the POW range will be made in person at Range Operations, building 5260.
 - (2) All POW firers will surrender their FLW Form 377-1 when checking in with Range Operations to use the POW range. The FLW For 377-1 is available by attending the POW Range Safety Class given by Range Operations on a scheduled basis. A sponsor or adult who is in the possession of a FLW Form 377-1 will supervise all persons under the age of 18. Each individual is responsible for the safe operation of the range. Once the firer(s) have completed the use of the range, return back to Range Operations to clear-off of the range and Range Operations will return their FLW Form 377-1.
 - (3) Range Operations will provide targets, range flags, the range regulation, and the range SOP.
 - (4) The first person that signs-up to use the POW range for that day will receive a red flag that will be posted on the flagpole. The last person that depart the POW range will take down the red flag and return it to Range Operations.
- e. Any violations of this regulation could result in the violator losing their privilege to use the POW range pending review/investigation.
- f. For safety purposes—
 - (1) Use only targets provided by or approved by Range Operations. Glass or plastic bottles, cans, metal or clay-thrown targets are prohibited. The Outdoor Adventure Center is the only authorized location for Skeet and Trap shooting.
 - (2) Firing will cease and all weapons cleared and benched prior to any firer, observer, or any person replacing, inspecting, or removing targets downrange.

(3) Clear all weapons before leaving the firing line. The breech of the weapon will be opened before leaving the firing line.

(4) Personnel who appear to be under the influence of alcohol or drugs are not allowed on any range.

(5) All personnel will wear appropriate attire and hearing protection when on or near the firing line.

(6) Smoking is not permitted on the firing line.

(7) No more than six personnel will fire at any one time.

(8) Automatic weapons are prohibited.

g. POW range users will dispose of all trash and brass in the receptacles provided prior to leaving the range.

4-13. Disposal of duds/unexploded ordnance (UXO)

a. All personnel are required to receive a briefing from Range Operations on duds/UXO procedures before any land disturbance is to take place on the installation.

b. Every reasonable effort will be made to locate duds/UXO that fall in both permanent and non-designated dud/UXO areas. This applies whether firing into a permanent dud/UXO area or in a non-designated dud/UXO area. During firing, known or suspected duds/UXO will be recorded by the FDC personnel for mortars and artillery and the RSO for direct-fire weapons.

c. Hand grenade duds/UXO will be reported to Range Operations. Training will cease until EOD has destroyed the dud/UXO grenade in the bay with the dud/UXO.

d. Dud/UXOs found in non-designated dud/UXO impact areas will be marked and reported immediately to Range Operations using the 9-line reporting format.

e. Upon completion of firing any "dud/UXO-producing" weapons in a non-designated dud/UXO impact area, range cadre or other qualified personnel will make a thorough search of the area. Initial Entry Training Soldiers or students will not be used for the task of dud/UXO search/removal. Do not drive stakes or other objects into the ground near the duds/UXO or jolt duds/UXO in any way. **NOTE: DUDs/UXO WILL NOT BE TOUCHED OR MOVED BY ANYONE OTHER THAN EOD PERSONNEL.** The firing unit will furnish a guide to assist EOD personnel in locating the duds/UXO. When reporting duds/UXO to Range Operations, the following information will be reported:

(1) Number of duds/UXO.

(2) Type and caliber of duds/UXO.

(3) Location of terrain features.

(4) Method by which marked.

(5) Names of individuals who will assist EOD personnel.

(6) Name, unit, and phone number of individual making report.

NOTE: The following 9-line reporting format will also be followed and submitted:

Line 1: Date-Time Group item was discovered.

Line 2: Reporting Activity (Unit identification code (UIC) and 8-digit location of dud/UXO)

Line 3: Contact method. Radio frequency, call sign, point of contact, and telephone number

Line 4: Type of ordnance dropped, projected, placed, or thrown. If available, supply the subgroup. Give the number of items if more than one.

Line 5: CBRN contamination. Be as specific as possible.

Line 6: Resources threatened. Report any equipment, facilities or other assets that are threatened.

Line 7: Impact on Mission. Provide a short description of your current tactical situation and how the presence of the UXO affects your status.

Line 8: Protective Measures. Describe any measures you have taken to protect personnel and equipment.

Line 9: Recommended Priority. Recommend a priority for response by EOD technicians

e. Upon completion of dud/UXO disposal by EOD personnel in non-designated dud/UXO impact areas, the OIC of the firing unit will submit a written report to Range Operations that a surface search has been conducted and all known duds/UXO have been reported or destroyed.

f. When firing is conducted into a permanent dud/UXO impact area, units will maintain a record indicating the number and caliber of duds/UXO observed or suspected. Upon completion of firing, this information will be submitted to Range Operations. Range Operations will maintain a log of all known or suspected duds/UXO.

4-14. Procedures for misfires

a. Misfire procedures for specific rounds are prescribed in the appropriate weapon or ammunition manual. When in doubt, contact Range Operations.

b. Prior to turn-in to the ASP, misfires will be repacked into the original container, tagged or otherwise identified, and kept separate from other ammunition items. For mortar ammunition, safety pins will be replaced in fuzes prior to turn-in. If the pin cannot be replaced, notify Range Operations. Range Operations will contact the Quality Assurance Specialist, Ammunition Surveillance (QASAS), LRC; the Ammunition Officer, LRC; and the Ammunition Inspector, LRC; to determine if the ammunition is safe to handle. If it is determined that a misfire is unsafe to handle, Range Operations will notify EOD for disposal.

4-15. Round out of impact

a. Any projectile that bursts or lands outside of firing limits will be reported to Range Operations immediately. Reports will include:

- (1) The location (8-digit grid coordinates) of the impact.
- (2) The name, unit, and location of person reporting.
- (3) The type and caliber of weapon and ammunition.
- (4) The location of weapon.
- (5) Injuries or damage caused.

b. If exact locations are not known, provide the location of observer and direction and distance to weapon(s) and impact location.

c. If a projectile has burst or impacted outside of safety limits, the unit will cease-fire immediately and notify Range Operations. All weapons and personnel, regardless of the type of firing, will remain at the weapon position until released by Range Operations. **NOTE: ALL FIRING DATA, AMMUNITION, AND FIRE CONTROL INSTRUMENTS PERTAINING TO MORTAR, ARTILLERY, AND TANK FIRING WILL BE SECURED AND NOT MOVED.** As soon as the unit, range, or firing point that is responsible for the erratic firing is identified, other firing locations may be given permission to resume firing.

d. The Range Operations Officer, or his designated representative, will make a decision as to whether to close the range. OIC of firing will submit a full report to the CG, MSCoE (through channels). The Range Operations Officer will conduct an investigation and submit a report when directed by the director DPTMS.

Chapter 5

FLIGHT AND AIRBORNE OPERATIONS

5-1. Restricted airspace

See paragraph 3-12, this regulation.

5-2. Facilities

a. Forney Army Airfield is operated by FLW and is a joint-used airfield i.e. military/civilian use.

b. Units can call Forney Operations for support, to include aircraft parking space, fuel, weather data and message relay between the DZSO and the aircraft.

c. Forney Army Airfield has no military maintenance support.

d. The tower published hours are per DOD Flight Information Publication (FLIP) Hours of operation maybe modified by special arrangement, coordinate with Forney Operations.

(1) All aircraft operating within FLW reservation to include the terminal area will be subject to Air Traffic Control instructions while Forney Tower is operational.

(2) When operational, Forney Tower will track and flight-follow with all aircraft throughout the Fort Leonard Wood terminal area to include the reservation periphery. Pilot(s) will report "Operations Normal" and provide their current location every 30 minutes or as requested by Forney Tower.

(3) When Forney Tower is not operational, pilot aircraft will contact Range Operations and Cannon Range if applicable, prior to entering into the helicopter training area (HTA) or route structure. Operations within the terminal area will be in accordance with published procedures governing uncontrolled airfields. Unit will be required to provide their own flight following.

(4) Unless otherwise approved by Forney Tower or thoroughly communicated over the Common Traffic Advisory Frequency (CTAF), aircraft operating within the terminal area of Forney Army Airfield will abide by the following traffic pattern altitude:

- | | |
|----------------------------|----------------------------|
| - Rotary Wing | East/West
1700 feet MSL |
| - Reciprocating fixed wing | East/West
2200 feet MSL |
| - Turbo prop and larger | East/West
2700 feet MSL |
| - Overhead approach | East/West
3200 feet MSL |

WARNING

PC's are ultimately responsible for ensuring the safe operation of their aircraft. Due to the possibility of aviation traffic not being familiar with local procedures, PC's will maintain situational awareness to ensure proper aircraft separation.

(5) Unit aircraft may request special visual flight rules (SVFR) through Forney Tower as appropriate. Multi-ship flights request SVFR may do so for Class Delta departure or recovery purposes only. PC's will assume responsibility for their own aircraft separation.

(6) Generally, unit aircraft will make takeoffs and landings to Runway 14/32, or Sod 1 through 5. Exceptions can be made if coordinated with Forney Tower. If Forney Tower is closed, landing/departure should be from Runway 14/32.

e. Airfield is open 24/7 to both military and civilian aircraft (unless NOTAM'd).

f. Hanger maybe available for minimal repairs. Coordinate use with Forney Operations.

g. Aircraft MOG:

- Nine rotary wing/or
- Four C-130 aircraft/or
- Three C-17 aircraft

NOTE: *Coordination should be made with Forney Operations prior to scheduling ramp usage.*

h. Points of contact are:

- (1) To coordinate support at Forney Army Airfield, call 573-596-0165.
- (2) Tower Frequencies are V125.4 and U268.7.
- (3) Ground control frequencies are V123.75 and U256.8.
- (4) Base operations (BASOPS) frequencies are V127.3, U237.5.

5-3. Airborne operations (Parachute)

a. Scheduling.

(1) Airborne operations outside of the designated HTA will be conducted at or above 500 feet AGL unless flying the perimeter air route structure where flight will be below 500 feet AGL.

(2) Military free-fall and sport parachute activities are authorized on Forney drop zone (DZ) ONLY if parachute is deployed at 3500 ft AGL or lower. **NOTE: NO HIGH ALTITUDE HIGH OPENING (HAHO) PARACHUTE DROPS ARE AUTHORIZED.**

(3) Requests for the use of Drop Zones (DZs) will be submitted in duplicate to reach Range Operations NLT 6 weeks in advance and will be locked in through DPTMS 5 weeks prior to the week of training. Requests will include the location of the DZ, the type and number of aircraft involved, and the inclusive times for the airborne/airmobile activity.

(4) Late requests and changes require the approval of DPTMS and depend on the availability of airspace and the degree of impact on other scheduled activities.

(5) All parachute operations must be coordinated with Forney Operation to ensure proper NOTAMS can be issued.

b. Operational checks.

(1) Pre-operational checks.

(a) Before the drop, the senior medic or medical officer will conduct a joint DZ reconnaissance with the DZSO. Subject to the approval of the DZSO, the senior medic or medical officer selects a casualty collection point (CCP).

(b) All medics are assigned "zones of coverage."

(c) Dismounted medics will be positioned on the DZ where they can observe their zones of coverage.

(d) Ambulances will be positioned at the edge of the DZ adjacent to their zone of coverage.

(e) Senior medic conducts a communication check with each dismounted medic, each front-line ambulance (FLA), and on a separate net with the DZSO.

(f) The Senior Medic or Medical Officer will predesignate multiple contingency pickup zones (PZ) for aero medical evacuation and provide grid coordinates to the DZSO.

(2) During the Operations Checks.

(a) A DZSO will be physically present on the DZ at all times during airborne operations, and will ensure that medical support is on the DZ prior to any personnel drops.

(b) Contact Range Operations to receive an occupation code NLT 2.5 hours before airborne operations. The code grants permission only to occupy, not to begin training.

(c) DZSO will ensure that positive communications with Range Operations is established via radio as primary means and landline as backup means of communication. DZSO will maintain continual communications with Range Operations during all airborne or airmobile operations and any follow-on route training.

(d) When the Evasive Driving Course has been scheduled for use during the same time period as the airborne operation, Range Operations will notify the Chief of Protective Services Division.

(3) Post-Operational Checks. Report to Range Operations the total number of jumpers and their injuries, if any.

c. Approved Training Sites.

(1) DZs will not be used for establishment of gun positions, command posts (CPs), company bivouac areas, or comparable administrative or tactical installations, unless specifically approved by the Installation Range Officer.

(2) Forney DZ:

(a) Traffic patterns to the Forney DZ will be as directed by Forney Tower. If Forney Tower is closed aircraft will approach from the south and exit to the north. After the drop is completed, aircraft will make right turn to appropriate heading, climb to 3000 feet MSL, weather permitting, and clear R4501 to the north.

(b) The OIC will assure that DZs and spectator areas are thoroughly policed upon completion of activities and prior to departure. All rigging materials, boxes, platforms, and other trash will be policed up and removed.

(3) Cannon Range DZ:

(a) This DZ is suitable for heavy drops.

(b) In addition to regular requirements, special authorization to conduct training on Cannon Range must be obtained through DPTMS 6 weeks prior to scheduling.

d. Parachute operations. Commands desiring to conduct unit parachute operations on FLW will submit a request with the following information:

(1) Location of the DZ.

(2) Numbers and types of aircraft involved.

(3) Fuel requirements.

(4) Time period for the drop.

(5) Requirements for tower support at Forney Army Airfield (whether or not aircraft will land at Forney Army Airfield).

5-4. Aviation flight restrictions

Aviation route structures for controlling helicopters facilitate air movement to, from, and around the FLW reservation is located in Appendix S.

a. Maneuver Areas is located in Appendix Q.

b. Aircraft Night Vision (NVD) Flight Operations is located in Appendix R.

5-5. Black-Out lighting operations

a. Reduced, covert, and black-out lighting operations.

(1) Will not be conducted in Class D airspace.

(2) May be conducted in Restricted Area R4501 A, C, D, and E with coordination with Cannon Range Operations.

(3) Operations outside Class D and Restricted Airspace must be coordinated with AT&A Officer through Forney Army Airfield Operations with a required 72 hour lead time.

b. Maximum density of aircraft in any training area will be determined by aircraft operating procedures. Range SOP, or FLW Range Operations Officer. Under no circumstances will aircraft operate in any training area without prior coordination with Forney Tower (Advisory) and direct radio contact with all aircraft operating in the area.

c. For all airborne operations within R4501, the drop zone safety officer (DZSO) will notify Range Operations a minimum of 2.5 hours prior to time on target (TOT) that the mission is a "GO" or that it is cancelled. When Range Operations does not receive the 2.5 hour notification, authorization to enter R4501 may be denied. DZSO will call Range Operations for clearance when aircraft is 10 minutes out from R4501.

NOTES:

1. REQUEST NAP OF THE EARTH (NOE) ROUTES WILL BE SUBMITTED TO RANGE OPERATIONS FOR REVIEW.

2. OPERATIONS OUTSIDE OF THE DESIGNATED HTA WILL BE CONDUCTED AT OR ABOVE 500 FEET AGL UNLESS FLYING THE PERIMETER AIR ROUTE STRUCTURE WHERE FLIGHT WILL BE BELOW 500 FEET AGL.

5-6. Unmanned Aerial Systems (UAS)

a. Lost or destroyed Small Unmanned Aerial System (SUAS) must be quickly reported and accounted for. Reporting formats and requirements may vary depending upon organization and agencies, but the following general format includes information that will be collected and reported in the event that a SUAS system component is lost or destroyed.

b. Procedures for SUAS loss link:

(1) Check orientation of radio frequency unit and reconnect patch antenna, if required.

(2) Monitor Link Status Bar; if link is restored, enter flight mode to regain control of air vehicle and continue mission as required. If link is not restored wait 3 minutes for air vehicle to rally.

(3) If link does not restore within 3 minutes, instructor will notify Range Operations of lost link, last known grid, altitude, direction heading when lost link occurred and battery time remaining.

c. Range Operations will immediately notify and provide Forney Tower (Kansas City Center, if Forney Tower is closed) and Cannon Range with the information stated above.

d. Forney and Cannon Towers once notified by Range Operations that a SUAS has lost link will immediately alert all aircraft on frequency of lost link of SUAS, provide last known position, altitude, heading, and fuel/battery time remaining information to the pilots. Forney Tower will also advise Kansas City Center of the above information.

e. Tower(s) will continue to monitor situation until return of control of the SUAS and is on the ground.

f. All airborne SUAS will be grounded and training will not resume until approved by Range Operations.

5-7. Water bucket operations

a. Upon Request from the FLW fire department through Range Operations, the use of the Army Aviation Flight Facility #2 (FAASF), water bucket asset will be deployed to extinguish brush fires with the range complex duded impact areas.

b. Range Operations will notify the FAASF (Kit Bond Hanger) to deploy the water bucket operations.

c. FAASF will contact the Missouri State Army Aviation Officer for approval prior to conducting the fire fighting operations. Mission permitting, and or depending on the availability of aircraft upon request, will deploy the water bucket operations.

d. Aircraft will not conduct water operations at night.

e. POC to request "Bambi Bucket" operations are:

(1) Commander, FAASF

(2) Contact Instructor Pilot Supervisor at 573-329-9060, or FM 38.050.

(3) Authorized areas to draw water for operation “Bambi Bucket”:

- (a) Bloodland Lake
- (b) Penns Pond
- (c) 27A Pond
- (d) Red Lake (TA 244)
- (e) Babbs Pond
- (f) TA 250

Chapter 6

LOGISTICS

6-1. Field water supply

All ranges and training areas will comply with FLW Reg 58-1 for field water supply.

6-2. Range and training area construction and modernization

- a. Request for automated target repair will be call into Range Operations Target Maintenance 596-5252.
- b. All request for range and training area construction, to include targetry, will be submitted in writing to the RO for approval utilizing FLW Form 388.

6-3. Target requests

All requests for standard targets will be submitted to Range supply 24 hours in advance. For basic rifle marksmanship (BRM) ranges, the request will be coordinated through the committee chiefs. Pickup of targets will be coordinated in advance by calling 596-6140.

Chapter 7

WEAPON AND AMMUNITION ACCIDENT/INCIDENT REPORTS

7-1. General

All incidents involving personal injury or property damage will be reported IAW paragraphs 7-2 and 7-3 below.

7-2. Weapons and ammunition incidents

- a. Weapons and ammunition accidents and malfunctions will be reported under the provisions of AR 75-1, DA PAM 385-40, TRADOC Reg 385-2 and FLW Reg 385-10. In addition, reporting is required IAW paragraph 7-3 below. The senior commander will ensure that all available facts on weapon and ammunition accidents/malfunctions are promptly obtained and reported for early determination of the cause of the malfunction and timely action to prevent similar malfunctions.

b. When an accident or negligent discharge occurs, the OIC will suspend all firing. The weapons and ammunition involved will be retained in place and intact until qualified personnel make an investigation.

c. The OIC/RSO will take necessary steps to prevent tampering with material involved, and items will not be removed from the range until investigated by the QASAS, LRC, or his representative. Once the QASAS has cleared the ammunition as safe to fire, firing can be resumed with all weapons except the one that has malfunctioned. Disposition of the weapon(s) involved will be determined by the Weapons Shop, Tactical Army Command (TACOM) Fleet Management Expansion (FMX). Following the investigation, the responsible officer of the unit concerned will submit a detailed written report to the Ammunition Surveillance Office, LRC, ATTN: QASAS within 2 working days after the accident or malfunction.

d. All other defects (other than routine operating cases) or nonstandard conditions noted within various type weapons or ammunition, whether a malfunction or accident has been experienced or not, will be reported to Range Operations. Range Operations will notify the Weapons Shop, TACOM-FMX, and the QASAS, Ammunition Surveillance Office, LRC. When in doubt, contact Range Operations. A copy of the report will be provided to the MSO and the Range Operations Officer.

e. The OIC may at his/her discretion, continue firing small arms ammunition while waiting for the installation investigation provided (see figure 7-1):

- (1) There are no lost time injuries or damage beyond unit repair
- (2) The malfunction was not a hangfire or an early detonation.
- (3) The malfunctioning item is .50 caliber or below.
- (4) The weapon, ammunition, and immediate area of the malfunction are left undisturbed.

7-3. Accident/incident reporting

a. When an accident or negligent discharge involving any weapons or demolitions used for training is experienced, immediate notification will be made by the OIC of the unit training to Range Operations furnishing all available information pertaining to the accident or malfunction. Report the following information to Range Operations and LRC, Ammunition Surveillance Office within 24 hours:

- (1) Organization conducting the training.
- (2) Location of the incident (range/training area number and location on that site).
- (3) Commander of the organization.
- (4) OIC and RSO of the range.

(5) Weapon(s), ammunition, and/or demolitions involved including caliber, type, model, serial number and manufacturer. Include NSN and lot number as applicable.

- (6) Date and time of the incident and a brief summary of what happened.

(7) Complete identification of all personnel involved, to include name, rank, job title, and organization.

(8) Extent of personal injuries, if any.

(9) Full name, social security number, rank, and unit of injured personnel.

(10) Extent of property damage.

(11) Type of weapon.

(12) Number of rounds fired from weapon on day of malfunction.

(13) Condition of weapon prior to malfunction.

(14) Statements from personnel having knowledge pertinent to the accident/incident or malfunction.

b. Range Operations will coordinate emergency medical support, if necessary, and will immediately notify the following applicable organizations during normal duty hours.

(1) QASAS (Ammunition Officer or Ammunition Inspector, LRC), 596-0832, Ammunition Supply Point, 596-0896,

(2) Weapons Shop, TACOM-FMX, 596-0895.

(3) Range Officer, 596-0171.

(4) Logistics Assistance Office (LAO), 596-0278.

(5) Safety Office, MSCoE, 596-0116 or 596-1274.

(6) 763d EOD, 596-2818.

(7) Directorate of Emergency Services, 596-6141.

(8) Should an accident and/or malfunction cause personal injury to a civilian or damage to civilian property, either real or personal, the Claims Officer, Office of the Staff Judge Advocate, will be notified.

c. If an ammunition/explosive accident occurs during other than normal duty hours, Range Operations will notify the installation Staff Duty Officer (SDO). SDO will notify the QASAS Ammunition Officer, LRC and the Range Operations Officer. If unavailable, contact the Ammunition Inspector, LRC, followed by the Logistics Assistance Office (LAO). The SDO will report the malfunction and all subsequent actions taken to the Ammunition Surveillance Office (596-1165) at the beginning of the next duty day.

d. The QASAS and Ammunition Officer are responsible for—

(1) Gathering data as necessary for all reported malfunctions.

(2) Locally suspending affected ammunition, within established guidelines. ALS personnel may be contacted to assist.

(3) Immediately making a preliminary report for any Class A (death or time loss injury) or Class B (damage to major equipment or impacts training/readiness) malfunctions IAW AR 75-1. Preliminary reports will be made by the fastest means possible with the information that is currently available. The preliminary report will not be delayed if some of the information is not immediately available.

e. Unless overriding safety or security considerations exist, the malfunction area, including equipment and weapons, will not be disturbed before necessary on-site inspections are performed by a Department of the Army Investigation Team for Malfunctions (DAITM). Notification of a DAITM will be given to the installation within 24 hours from the receipt of the preliminary report.

f. Accidents and incidents in which an ammunition malfunction is thought to be a direct or contributing factor will also be reported IAW FLW 385-10.

Appendix A REFERENCES

Section I Required Publications

AR 75-1

Malfunctions Involving Ammunition and Explosives (Cited in paragraph 7-2a)

AR 75-15

Policy for Explosive Ordnance Disposal (Cited in paragraphs 4-9a(13)(d) and 7-3h)

AR 190-11

Physical Security of Arms, Ammunition, and Explosives (Cited in 3-1r)

AR 385-61

Toxic Chemical Agent Safety Standards (Cited in paragraph 3-9g)

AR 385-63/MCO 3570.1C

Range Safety (cited in paragraphs 1-4d(2); 1-4d(5); 1-4e(2); 3-1g; 3-2, 3-2(e); 3-10, 3-10f; 4-1c; 4-3a; 4-7a; 4-9a(11)(a); 4-9c(2); 4-9c(5)(b); 4-9f(4)(h); 4-9f(d)(8)); 4-10b; and 4-10g(6)(c))

AR 405-80

Management of Title and Granting Use of Real Property (Cited in paragraph 4-3d)

AR 600-55

The Army Driver and Operator Standardization Program (Selection, Training, Testing and Licensing) (Cited in paragraph 3-25b (4)(a))

DA Pam 385-40

Army Accident Investigations and Reporting (Cited in paragraph 7-2a and 7-3h)

DA Pam 385-61

Toxic Chemical Agent Safety Standards (Cited in paragraph 3-9g)

DA Pam 385-63

Range Safety (cited in paragraphs 1-4d(2); 1-4e(2); 3-10, 4-9a(11)(a); 4-9f(4)(h); 4-9f(d)(8)); 4-10b).

DA Pam 385-64

Ammunition and Explosives Safety Standards (Cited in paragraph 4-7a)

FM 3-11.4

Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection (Cited in paragraph 3-20g)

FM 3-34.214 (Includes Changes)

Explosives and Demolitions (Cited in paragraph 4-9a; 4-9a(5)(6)(7)(8)(9); 4-9a(11)(a)(c)(d); 4-9a(12); 4-9c(3); 4-9c(5)(b); 4-9d(3)(b); 4-9g(8))

FM 5-34

Engineer Field Data (Cited in paragraph 4-9c(3))

FM 21-10

Field Hygiene and Sanitation (Cited in paragraph 3-7g(1))

FM 21-18

Foot Marches (Cited in paragraph 3-18d(1))

TM 9-1370-207-10

Operator's Manual - Pyrotechnic Simulators (Cited in paragraphs 4-9g(1) and 4-9g(8)(9))

TM 9-1370-208-10

Photoflash Cartridges, Surface Flares and Miscellaneous Pyrotechnic Items, Operator's Manual (Cited in paragraphs 4-9g(1) and 4-9g(8)(9))

TM 10-4500-200-13

Operators Organizational and Direct Support Maintenance Manual (Including Repair Parts and Special Tool Lists); Heaters, Space: Radiant-Type, Portable (Type I, Model 1941, Solid Fuel) (NSN 4520-00-257-4077); (Type II, Model 1941 Liquid Fuel) (4520-00-927-4214); (Yukon Model M1950, Solid or Liquid Fuel) (4520-00-287-3353); Heaters, Immersion: Liquid Fuel Fired for Corrugated Cans (All Makes and Models) (4540-00-266-6835) (Preway Model 447-2EX) (4540-00-266-6834) (Cited in paragraph 3-25b(4)(a))

TM 43-0001-28

Army Ammunition Data Sheets for Artillery Ammunition: Guns, Howitzers, Mortars, Recoilless Rifles, Grenade Launchers and Artillery Fuses (Federal Supply Class 1310, 1315, 1320)). (Cited in paragraph 4-7a and d)

TRADOC Reg 350-6

Enlisted Initial Entry Training (IET) Policies and Administration (Cited in paragraph 3-1i)

TRADOC Reg 385-2

U.S. Army Training and Doctrine Command Safety Program and Occupational Health Program (Cited in paragraph 7-2a)

FLW Reg 58-1

Management of Nontactical Vehicles (Cited in paragraph 6-1)

FLW Reg 190-6

Registration and Control of Privately Owned Firearms & Other Weapons on Fort Leonard Wood (Cited in paragraph 3-9d and 3-18b(5))

FLW Reg 210-21

Hunting and Fishing Regulation (Cited in paragraphs 3-8d and 3-17b(5))

FLW Reg 215-3

Use, Operation, Maintenance, and Management of Post Recreation Areas (Cited in paragraph 3-8c)

FLW Reg 385-10

Safety Program (Cited in paragraph 3-3b, 4-19d(1), 7-2a)

FLW Reg 420-1

Troop Support to Combat Vegetation Fires (Cited in paragraph 3-25a(6))

FLW Reg 700-2

Ammunition (Cited in paragraphs 4-7a and 4-7r)

Section II.**Related Publications****AR 40-5**

Preventive Medicine

TRADOC Reg 350-29

Prevention of Heat and Cold Casualties

Section III**Prescribed Forms****FLW Form 23**

Range Operations Training Area Inspection Checklist

FLW Form 23-1

Range Operations Range Inspection Checklist

FLW Form 57

Range/Training Area Incident Report

FLW Form 377-1

Range Safety Officer Card

FLW Form 388-E

Material and Service Order Request for Range/Training Area Upgrade and Maintenance

FLW Form 2010

TTB In/Out Processing Checklist

FLW Form 2010-1

Training Area In/Out Processing Checklist

FLW Form 2010-2

MOUT In/Out Processing Checklist

Section IV

Referenced Forms

DA Form 581

Request for Issue and Turn-In of Ammunition.

DA Form 2203

Demolition Reconnaissance Record.

DA Form 2408-4

Weapon Record Data.

DA Form 4283

Facilities Engineering Work Request

DD Form 2977

Deliberate Risk Assessment Worksheet

GTA 05-08-012

Individual Safety Card

Appendix B RANGE FACILITIES

1. Grid coordinates mark the location of range towers. For ranges without towers, coordinates mark the range ready lines.
2. The scheduling activity for all ranges is the DPTMS/Range Operations Scheduling Branch. The responsible unit ensures safe operation of the range, to include user maintenance and submission of work orders for organizational maintenance (to range maintenance) or DS/GS (to LRC, DPW, NEC).
3. In addition to the scheduling activity, prior coordination will be made NLT 72 hours prior to training with the unit responsible for the range. For ranges owned by the G-33 Combat Training Company, coordination will be made through the CTC operations section, 6-5883.
4. All civilian organizations and military units not stationed at FLW will schedule the use of facilities through the DPTMS Reserve Component Operations, (573) 563-4073.
5. Bivouac operations are not permitted on live-fire ranges without prior written approval of the Range Officer.
6. Storm Shelters are positioned on live-fire range. Each shelter accommodates 14 Soldiers. The remarks column describes the number of shelters positioned at each range. Units/cadre will follow the tornado procedures guidelines IAW Appendix O.

RANGE	DESCRIPTION/ CAPACITY	LOCATION	PHONE	SUPT FACILITY/BLDG #	TYPE WEAPON/ AMMO	UNIT	REQ	REMARKS
1		WB 767744				RANGE OPNS		Range Inactive.
2E (Monterau)	25 METER / 50 FIRING POINTS	WB 76167473	6-7969	TOWER - #5310, MESS AREA OVERHEAD COVER, CLASSROOM - #5169, LATRINE - #5166, BLEACHERS, BLEACHER COVER, RANGE SPT BLDG - #5167, RG HOUSE - #5165	M16 RIFLE, 9MM, M249 SAW BALL & TRACER, SHOTGUN. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets and frames. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 3. Storm Shelters sited that covers RG 2E & 2W.
2W (Monterau)	25 METER/ 50 FIRING POINTS	WB 76167473	6-7969	TOWER, OTHER FACILITIES SHARED WITH RANGE 2E	M16 RIFLE, 9MM, M249 SAW BALL & TRACER, SHOTGUN. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets and frames. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 3. 17 Storm Shelters sited that covers RG 2E & 2W.
3 (Kasserine)	MODIFIED RECORD FIRE / 16 FIRING POINTS	WB 75757470	6-7969	TOWER - #5317, COVERED MESS AREA, LATRINE/CLASSROOM - #5161, , COVERED BLEACHERS, - #5318, RG SUPT BLDG - #5315, AMMO /TARGET SHED - #5316	M16 RIFLE, 9MM, M249 SAW/ 5.56mm BALL & TRACER. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets and frames. P.I.T.S. compatible. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks, IAW Appendix H. 3. 17 Storm Shelters sited.
4 (Pork Chop Hill)	OVERHEAD LIVE-FIRE, NIGHT INFILTRATION	WB 75357463	6-3322	TOWER - #5337, MESS AREA, CLASSROOM - #5334, LATRINE - #5335, OFFICE - #5336 BLEACHERS, BLEACHER COVER - #5338, RG SPT BLDG - #5339	M16 RIFLE, M240 MACHINE-GUN, 7.62mm BALL & TRACER, 5.56mm BLANK ONLY. PYROTECHNICS AUTHORIZED, NO CS GAS	CTC	OIC, RSO, ONE ARSO WALKING THE COURSE WITH THE UNIT, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Only use authorized ammunition for overhead firing. 2. Tracer ammunition and pyrotechnics may be used IAW Appendix H. 3. The using unit is responsible for controlling flares, and reporting and extinguishing fires. 4. 17 Storm Shelters sited that covers RG's 4 & 5.
5N (Val Verde)	25 METER ZERO /50 FIRING POINTS	WB 75077429	6-3929	TOWER - #5343, MESS AREA, CLASSROOM - #5346, LATRINE - #5347, BLEACHERS, BLEACHER COVER - #5341, OFFICE - #5344, AMMO SHED, TARGET SHED - #5345	M16 RIFLE, 9MM, M249 SAW/ 5.56mm BALL & TRACER, SHOTGUN. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets, frames. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 3. 17 Storm Shelters sited that covers RG's 4 & 5.
5S (Val Verde)	25 METER ZERO /50 FIRING POINTS	WB 75077429	6-3929	TOWER, MESS AREA, AMMO SHED- 5341A, CLASSROOM, AND OTHER FACILITES SHARED WITH RANGE 5N	M16 RIFLE, 9MM, M249 SAW/ 5.56mm BALL & TRACER, SHOTGUN. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets, frames. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H.

RANGE	DESCRIPTION/ CAPACITY	LOCATION	PHONE	SUPT FACILITY/BLDG #	TYPE WEAPON/ AMMO	UNIT	REQ	REMARKS
6	Non Standard Range	WB				RANGE OPNS		Range inactive
7	MODIFIED RECORD FIRE / 16 FIRING POINTS	WB 74657355	6-5569/ 5563	TOWER – #13430, COVERED MESS AREA – #13424, LATRINE/CLASSROOM - #13428, SUPT BLDG - #13435 COVERED BLEACHERS - #13432, AMMO/ TARGET SHED - #13436	M16 RIFLE, M249 SAW/ 5.56mm BALL & TRACER. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 5 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 2. 17 Storm Shelters sited.
8 (Gettysburg)	MODIFIED RECORD FIRE / 16 FIRING POINTS	WB 74677334	6-5544/ 5488	TOWER - #13454, COVERED MESS AREA (2) #13443, 5369, LATRINE//CLASSROOM - #13447, COVERED BLEACHERS - 13454, RG SUIT BLDG - #13444, AMMO/ TARGET SHED - #13456	M16 RIFLE, M249 SAW/ 5.56mm BALL & TRACER. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 5 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 2. 17 Storm Shelters sited.
9 (A Shau)	MODIFIED RECORD FIRE / 15 FIRING POINTS	WB 74837250	6-1378	TOWER - #5384, COVERED MESS AREA – #5389, LATRINE/CLASSROOM - #5377, COVERED BLEACHERS - #5388, RG SUPT BLDG - # AMMO SHED - #5378	M16 RIFLE, M249 SAW, . 5.56mm BALL & TRACER, . PISTOL 9mm. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 4 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets, frames. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 3. 17 Storm Shelters sited.
10N (Manassas)	25 METER ZERO/ 50 FIRING POINTS	WB 74907218	6-1378	TOWER, MESS AREA, CLASSROOM - #5390, LATRINE - #5396, BLEACHERS, BLEACHER COVER - #5395, RG SUPT BLDG (2)- #5397, #5391, 15X15 (2)	M16 RIFLE, 9MM, M249, 5.56mm BALL & TRACER, 9mm TRACER. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets, frames. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 3. 17 Storm Shelters sited that covers RG 10N & 10S.
10S (Manassas)	25 METER ZERO/ 50 FIRING POINTS	WB 74907218	6-1378	TOWER-#5394, OTHER FACILITIES SHARED WITH RANGE 10	M16 RIFLE, 9MM, M249, 5.56mm BALL & TRACER, 9mm TRACER. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Stationary targets, frames. 2. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 3. 17 Storm Shelters sited that covers RG 10N & 10S.
11 (Santiago)	AFF/LOMAH	WB 74927184	6-4048	TOWER - #5503, CLASSROOM - #5500, LATRINE, OFFICE - #5502, BLEACHERS, BLEACHER COVER - #5363, RG SUPT BLDG - #5501	M16 RIFLE, M249, 5.56mm BALL & TRACER. PYRO AUTHORIZED. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER 10 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Fire breaks are maintained around the impact area and close in the flare fall-area to allow tracer and pyrotechnics use IAW Appendix H. 2. The using unit is responsible for controlling flares and, reporting and extinguishing fires. 3. 17 Storm Shelters sited.
12	FIRE & MANEUVER COURSE / 3 LANES	WB 74867155	6-2552	RG SUPT BLDG - 5510	M16 RIFLE, 5.56mm BALL & TRACER PYROTECHNICS AUTHORIZED, NO CS GAS	CTC	OIC, RSO, ONE ARSO EACH LANE, WEAPON GUARD, AMMO SUPERVISOR, AMMO GURAD.	1. No tower. Blank fire/miles course. 2. Fire breaks are maintained around the impact area and close in the flare fall-area to allow tracer and pyrotechnics use IAW Appendix H. 3. The using unit is responsible for controlling flares and, reporting and extinguishing fires. 4. 17 Storm Shelters sited.
13 (SSG James Ide V)	ADVANCED LAW ENFORCEMENT TRAINING DIVISION (ALETD) RANGES & SHOOT HOUSE 1 & 2	WB 74917127	6-3066	CLASSROOM - #5540, LATRINE, OFFICE - #5530, COVERED BLEACHERS - #5537, #5538, RG SUPT BLDGS - #5534, #5535, RANGE TOWER - #5536, SHOOTING HOUSES - #5542 & 5543, VERTICAL SHOOTING HOUSE.	ALL HANDGUN CALIBERS, 5.56mm RIFLE, SHOTGUN	USAMPS	OIC, ONE ARSO EACH COURSE, WEAPONS GUARD, AMMO SUPERVISOR, AMMO GUARD FOR EACH COURSE ON RANGE.	1. The special operations range complex is available to all units for pistol qualification. All other training at the complex is available only to military units and civilian agencies for training that is essential to a direct law enforcement mission. 2. Standard hours of operation are 0730-1615 Monday thru Friday. Using unit must pay overtime after regular duty hours. 3. ALETD agrees to host training events on a case-by-case basis. Overtime for hosted events is funded by ALETD. 4. Scheduling for any part of the SOR complex must be completed NLT 14 weeks prior to training. ALETD is given priority for scheduling. 5. Steps to schedule training, other than basic pistol qualification, at the SOR complex: Step 1. Complete the FLW range safety officer course. Step 2. Complete the SOR certification course. Call range 13 to schedule certification (6-3066). Step 3. Coordinate with the SRT chief (6-1573) for use the complex. Step 4. Contact DPTMS (3-5197) for scheduling. 6. To schedule basic pistol qualification, complete steps 1, 3, & 4. It is not necessary to attend the SOR certification course.

								7. Fire breaks are maintained around the impact area and close in the flare fall-area to allow tracer and pyrotechnics use IAW Appendix H. 8. The using unit is responsible for reporting and extinguishing fires. Protective berms provide 360-degree range fan for the shooting houses.
RANGE	DESCRIPTION/ CAPACITY	LOCATION	PHONE	SUPT FACILITY/BLDG #	TYPE WEAPON/ AMMO	UNIT	REQ	REMARKS
14	ADVANCED LAW ENFORCEMENT TRAINING DIVISION (ALET D)	WB 74697080		THREE-STORY FIRING LINE	RIFLES 7.62mm AND SMALLER, M203 W/TTP ROUNDS	USAMPS	OIC, ONE ARSO EACH COURSE, WEAPONS GUARD, AMMO SUPERVISOR, AMMO GUARD FOR EACH COURSE ON RANGE.	See range 13
15	URBAN ASSAULT COURSE			OFFENSE/DEFENSE BLDG/ SQD & PLT TASK TRAINER, GRENADE GUNNERY & UNDERGROUND TRAINER	5.56mm BALL, M203 (TP ONLY)	USAMPS	OIC, ONE ARSO EACH COURSE, WEAPONS GUARD, AMMO SUPERVISOR, AMMO GUARD FOR EACH COURSE ON RANGE.	See range 13
16 (San Juan Hill)	NON-STANDARD RANGE	WB 74857053	6-5047	TOWER - #5741, MESS AREA, CLASSROOMS (2) - #13601, #13602, LATRINES (2) - #13603, #13604, COVERED BLEACHERS, 15X15	M16 RIFLE, M249, 5.56mm, NO CS GAS	RANGE OPNS		1. Area beyond farthest target is a controlled burn area bound by maintained fire breaks to allow tracer fire in fire danger class three and four, IAW Appendix H. 2. 17 Storm Shelters sited.
17 (Chosin Reservoir)	MARINE CORPS PISTOL QUAL/ 25 FIRING POINTS	WB 74597020	6-3041/ 2789	TOWER - #5583, CLASSROOM - #5585, OFFICE, COVERED BLEACHERS - #5582, RG SUPT BLDG - #5581, COVERED FIRING LINE - #5586, CONTROL ROM - #5583, FIREARMS TRAINING SIMULATOR - #5584	.38 CAL., .45 CAL, AND 9mm PISTOL, 12 Ga AND NON-LETHAL SHOTGUN, M203-Non-lethal rds only, MK141 FLASH-BANG, STINGER BALL GRENADE	USMC	OIC, RSO, ONE ARSO PER 4 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD FOR EACH COURSE ON RANGE.	1. Protective berms on three sides. 2. Site of DoD non-lethal individual weapons instructor course. 3. 8 Storm Shelters sited.
18 (Marne)	MULTI-PURPOSE/ 6 FIRING POINTS	WB 74656985	6-2967/ 2970	TOWER - #5599, COVERED MESS AREA, CLASSROOM - #5597, LATRINE, OFFICE - #5593, COVERED BLEACHERS - #5595, RG SUPT BLDG - #5594	M16 RIFLE: 5.56mm, M240 MG: 7.62mm, PISTOL 9mm BALL & TRACER, M203 (TP ONLY), M249, 50 CAL (SRTA ONLY)	CTC	OIC, RSO, ONE ARSO PER 4 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD FOR EACH COURSE ON RANGE.	1. No dud/UXO-producing ammo permitted. 2. The down range area is a controlled burn area bounded by fire breaks to allow tracer firing in fire danger class three & four IAW Appendix H. 3. 17 Storm Shelters sited.
18A (Marne)	MULTIPURPOSE MACHINE GUN RANGE (MPMG) / 6 FIRING POINTS	WB 74376830		BLEACHERS, BLEACHER COVER - TARGET SHED. OFFICE.	(MPMG) NON-STANDARD/ "QUALIFYING RANGE" TO ALL THE FOLLOWING WEAPON SYSTEMS: MK-19 TABLES 3 (DAY TIME) TABLE 4 (NIGHT TIME) M249/240B (BOTH THE M249 & THE 240B HAVE TABLES 1 (10M ZERO) TABLE 2 (DAY QUAL) TABLE 3 (NIGHT FIRE) OR FAM FIRE ONLY. 50 CAL MACHINE GUN "PLASTIC" BULLET ONLY, AND FAM FIRE ONLY. ALL OTHER ABOVE MENTIONED WEAPON SYSTEMS, ARE QUALIFYING!		OIC, RSO, ONE ARSO PER FIRING POINTS, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. No dud/UXO-producing ammo permitted. 2. The down range area is a controlled burn area bounded by fire breaks to allow tracer firing in fire danger Class 3 and 4, IAW Appendix H. 3. Request for usage of range will go through the Reserve Component Officer @ 573-563-4053.
19 (Ardenne)	US WEAPONS FIRE/ M203: 6 FIRING PTS, AT4: 9 FIRING PTS, M240 MG: 6 FIRING PTS, M249 SAW: 6 FIRING PTS, MK19: 4 FIRING PTS, M18A1: 1 FIRING PT	WB 74486785	6-2782	TOWER - #5710, COVERED MESS AREA - #5711, CLASSROOM - #5712, LATRINE - #5713, OFFICE, BLEACHERS, BLEACHER COVER - #5709, RG SUPT BLDG - #5708	M16 RIFLE: 5.56mm, M240 MG: 7.62mm, PISTOL 9mm BALL & TRACER, M203, AND MK 19: 40mm (TP ONLY), AT4, M18A1 CLAYMORE 50 CAL (SRTA ONLY)	CTC	OIC, RSO, ONE ARSO PER 4 FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD FOR EACH COURSE ON RANGE.	1. Dud/UXO impact area. No down range access permitted except EOD personnel. 2. The down range area is a controlled burn area bound by maintained fire breaks to allow tracer firing in fire danger class three & four IAW Appendix H. 3. 17 Storm Shelters sited.
20 (Antietam)	MODIFIED RECORD FIRE (RETS)/ 16 FIRING POINTS	WB 75226711	6-7755	TOWER - #5731, MESS AREA OVERHEAD COVER - #5736, CLASSROOM - #5734, LATRINE - #5737, BLEACHERS, BLEACHER COVER, (2) RG SUPT BLDGS - #5732, #5733, AMMO SHED - #5735	M16 RIFLE, 5.56mm BALL & TRACER. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER EIGHT FIRING POSITIONS, TOWER OPERATOR, AMMUNITION SUPERVISOR, AMMUNITION AND WEAPONS GUARD	17 Storm Shelters sited.
21 (Devil's Den)	MILITARY POLICE PISTOL QUALIFICATION/ 50 FIRING POINTS	WB 75506678	6-2778	TOWER - #5546, MESS AREA, CLASSROOM - #5743, LATRINES - #5746, #5747, BLEACHERS, BLEACHER COVER - #5745, RG SUPT BLDG - #5742, OFFICE - #5744, FIRE ARMS TRAINING SIMULATOR - #5748	9MM PISTOL	USAMPS	OIC, RSO, ONE ARSO PER FOUR FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Coordinate use of range with USAMPS, then schedule through DPTM. 2. 17 Storm Shelters sited.

RANGE	DESCRIPTION/ CAPACITY	LOCATION	PHONE	SUPT FACILITY/BLDG #	TYPE WEAPON/ AMMO	UNIT	REQ	REMARKS
22 (Utah Beach)	MODIFIED RECORD FIRE/ 16 FIRING POINTS	WB 76026646	6-1375	TOWER - #5763, MESS AREA, CLASSROOM - #5760, LATRINE - #5764, BLEACHERS, BLEACHER COVER - #5761, RG SUPT BLDG - #5765	M16 RIFLE, 5.56mm BALL & TRACER. NO CS GAS	CTC	OIC, RSO, ONE ARSO PER FOUR FIRING POINTS, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	17 Storm Shelters sited.
24 (Inchon)	MULTI-PURPOSE: MACHINE GUN (M2/ M240/ M249) M16 RIFLE RANGE	WB 73896780	6-1560	TOWER & COVERED BLEACHERS	M2 (50 CAL) QUAL RANGE WITH 4 QUAL LANES AND 2 FAMILIARIZATION LANES.	RANGE OPNS	OIC, RSO AMMO SUPERVISOR, AMMO GUARD, WEAPON GUARD. 3 MANNED ROAD GUARD POSITIONS W/RADIO	Requires prior written approval from Range Operations usarmy.leonardwood.imcom-entrnl.other.flwrangeops@mail.mil
25	INACTIVE (M203/ 10 FIRING POSITIONS)	WB 74257103	6-3344	TOWER	M203: 40mm TP AND HE GRENADES.	RANGE OPNS	OIC, RSO, ONE ARSO PER FIRER, AMMO SUPERVISOR, AMMO GUARD, WEAPON GUARD.	1. Permanent dud/UXO impact area. 2. The area beyond the firing line is a controlled burn area. Range is currently Dormant.
26	Engineer Qualification Range (EQR)	(SEE SITE LISTING BELOW.)		CLASSROOM	(SEE SITE LISTING BELOW.)	RANGE OPNS	OIC, RSO AMMO SUPERVISOR, AMMO GUARD.	1. No tower. No permanent cadre. 2. Sites on range 26 will be signed for separately. A site- specific risk assessment will be prepared each time that site is used. 3. Blast restriction. For all sites except 100lbs. Surface, 200 lbs. Sub-surface. 4. In addition to RSO certification, the RSO/OIC will receive annual demolition orientation briefing from RC. Obtain a ten- minute window from RC prior to blasting demo. 5. Live mine training restrictions: no anti-handling devices, no tilt rods. Mines are armed/ disarmed no more than 25 times. 6. Requests to use explosives not covered in published sop will be submitted in writing to RO.
A	AVLB BRIDGE Site	WB 74096863	6-4236	1 BRIDGE	BLANKS ONLY. NO DET CORD, INCENDIARY, OR SMOKE ON THE BRIDGE	USAES		
C	ABATIS	WB 73656890		2 DEMO PITS, 1 BLAST BUNKER	C-4, TNT	USAES		
D	WIRE OBSTACLE	WB 73816887		2 DEMO PITS, 1 BLAST BUNKER	BANGALORE TORPEDO, FIELD EXPEDIENT EXPLOSIVES	USAES		
E	AP MINE	WB 72886796		3 DEMO PITS, 1 BLAST BUNKER	C4, TNT, AP MINE	USAES		
F	ROAD CRATER	WB 72876812		2 DEMO PITS, 1 BLAST BUNKER	C4, TNT, SHAPE CHARGES, CRATERING CHARGES	USAES		
H	BRIDGE RECON SITE	WB 79306940	6-4236	NO SUPPORT FACILITIES ON THIS SITE.	NO DEMO ALLOWED	USAES	OIC, RSO , AMMO SUPERVISOR, AMMO GUARD.	
27	ARRY RANGE					RANGE OPNS		
27A	NON STANDARD RANGE					RANGE OPNS		
29 (Pork Chop Hill)	USMC NBC Training Site	WB	6-0299			USMC DET		3 Storm Shelters sited.
30 (CHIPYONG= NI / BATAAN)	INACTIVE	WB						

RANGE	DESCRIPTION/ CAPACITY	LOCATION	PHONE	SUPT FACILITY/BLDG #	TYPE WEAPON/ AMMO	UNIT	REQ	REMARKS
31 (Junction City)	HAND GRENADE/ 4 LIVE BAYS, MOCK BAY, HIGH/LOW WALL, QUAL COURSE	WB 73937322	6-1645/ 1353	TOWER, MESS AREA, CLASSROOM, 2 LATRINES - #5237, #5238, AMMO - #5234, 2 COVERED BLEACHERS - #5236, RG SUPT BLDG - #5233, 15X15 SHED	HAND GRENADE: ALL TYPES EXCEPT CS & WP	CTC	OIC, RSO, ONE ARSO (QUALIFIED CADRE MEMBER) PER LIVE BAY, TOWER OPERATOR, WEAPON GUARD, AMMO SUPERVISOR, AMMO GUARD.	1. Dud/UXO impact area. No down range access permitted except for EOD personnel. 2. 17 Storm Shelters sited.
33 (Petersburg)	DEMOLITION (HEAVY/LIGHT)/ 1 STEEL CUTTING BAY, 1 HEAVY DEMO PIT	WB 71957295	6-0072	EXPLOSIVES BUNKERS (2), BOMB SHELTERS (8)	ALL MILITARY EXPLOSIVES, EXPEDIENT EXPLOSIVES, M15, M19, M21 ANTI-TANK MINES	USAES	OIC, RSO,, AMMO SUPERVISOR, AMMO GUARD.	1. No tower. 2. Blast restriction: 100lbs. Surface, 200 lbs. Sub-surface. 3. Receive demolition orientation briefing from RC (yearly). 4. Obtain a ten-minute window from RC prior to blasting demo. 5. Live mine training restrictions: no anti-handling devices, no tilt rods. Mines are armed/ disarmed no more than 25 times. 6. Explosives not covered in published sop will be submitted 7. 15 Storm Shelters sited.
36	EOD DEMOLITION	WB 72177370	6-5853	STORAGE BLDG	ALL MILITARY EXPLOSIVES	EOD	OIC, RSO, AMMO SUPERVISOR, AMMO GUARD.	1. No tower. 2. Blast restriction: 100lbs. Surface, 200 lbs. Sub-surface. 3. Obtain a ten-minute window from RC prior to blasting demo. 4. No two-way radios within 87 meters of live explosive components. 5. Emergency explosive disposal may be conducted immediately upon request through RC.
38	SAPPER DEMOLITION (HEAVY)/ ONE HEAVY DEMO PIT	WB 67756768		EXPLOSIVES BUNKERS (3), BLEACHERS, BLEACHER OVERHEAD COVER, 15X15 SHED	ALL MILITARY EXPLOSIVES, M16 RIFLE: 5.56mm BLANK, M240 MG: 7.62mm BLANK	USAES	OIC, RSO, AMMO SUPERVISOR, AMMO GUARD.	1. No tower. 2. Blast restriction: 100lbs. Surface, 200 lbs. Sub-surface. 3. Special demo: grape shot, expedient bangalore, platter charges. 4. Explosives not covered in sop will be submitted in writing to RC officer.
39	NON STANDARD RANGE	WB 70386958	6-6148 6-1603	MESS AREA, CLASSROOM - #6005, LATRINE, BLEACHERS, BLEACHER COVER, TARGET SHET, OFFICE	M16 /M4 RIFLE, 5.56mm, 7.62mm BLANKS ONLY. PYROTECHNICS AUTHORIZED.	RANGE OPNS	OIC, RSO, ONE ARSO PER VEHICLE, WEAPON GUARD, AMMO SUPERVISOR AND GUARD	1. The area beyond the firing line is not a controlled burn area. Use of tracers in fire danger Class 3 and 4 may be limited. 2. 4 Storm Shelters sited.
50 CANNON RANGE	AIRCRAFT BOMBING & STRAFING, ARTILLERY & MORTAR IMPACT AREA	WB 69256721	6-0298 6-0299	AIRCRAFT MAINTENANCE BAY, FENCED STORAGE AREA, FLIGHT CONTROL TOWER	7.62mm, 20mm, 30mm, 40mm, INERT BOMBS	CANNON RANGE 1st Det, 131ST FW	OIC, RSO, TOWER OPERATOR	1. Cannon range is available for ground units to train on a case-by-case basis. Requests will be submitted to director, range division, two weeks prior to scheduling with G3/DPTM. 2. Firebreaks have been constructed around the target areas. The 131st TFW is responsible for maintenance of the firebreak system and confining fires inside the firebreaks. 3. Natural resources branch, DPW, will coordinate controlled burning inside the firebreaks. 4. DRC will be responsible for coordinating with the 131st TFW, cannon range OIC, in order to confine artillery & mortar impacts to the area inside the firebreak system and to determine compatible targeting.
FP1	ARTILLERY FIRING POINT	WB 74276759			ARTILLERY	RANGE OPNS		
FP2	ARTILLERY FIRING POINT	WB 74576720			ARTILLERY	RANGE OPNS		
FP3	ARTILLERY FIRING POINT	WB 74046645			ARTILLERY	RANGE OPS		
FP4	ARTILLERY FIRING POINT	WB 71286666		FORWARD OBSERVATION POINT	MORTAR	RANGE OPNS		
FP5	ARTILLERY FIRING POINT	WB 71286482		FORWARD OBSERVATION POINT/ STEEL TOWER	MORTAR	RANGE OPNS		
FP6	ARTILLERY FIRING POINT	WB 73326757			ARTILLERY	RANGE OPNS		
FP7	ARTILLERY FIRING POINT	WB 72846738			ARTILLERY	RANGE OPNS		
FP8	ARTILLERY FIRING POINT	WB 70936880			ARTILLERY	RANGE OPNS		

RANGE	DESCRIPTION/ CAPACITY	LOCATION	PHONE	SUPT FACILITY/BLDG #	TYPE WEAPON/ AMMO	UNIT	REQ	REMARKS
FP10	ARTILLERY FIRING POINT	WB 72316731			ARTILLERY	RANGE OPNS		
FP11	ARTILLERY FIRING POINT	WB 70667111		FORWARD OBSERVATION POINT	ARTILLERY	RANGE OPNS	BATTERY SAFETY OFFICER (RSO), ONE ARSO PER FIRING POSITION.	1. Altitude will not exceed 5,000 ft. Maximum of four charges. 2. Obtain permission to fire from RC. 3. RC will assure that procedures will result in all rounds falling within the target impact area. 4. RC will coordinate with the 131st TFW; cannon range OIC, to determine compatible targeting and firefighting procedures. 5. Firing will be allowed only in fire danger class zero thru three (0-3). 6. Illumination devices must be targeted in a manner that will cause all burning material to fall inside the firebreak system.

Appendix C Local Training Areas

1. Local Training Areas (LTAs) are not scheduled in RFMSS, and are located inside of the cantonment area.
2. The responsible unit, designated as "UNIT" in the table below, ensures safe operation with the area, to include user maintenance, and submission of service and/or work orders to DPW for organizational maintenance.
3. Removal of or damage to vegetation is prohibited.
4. PRT Fields that contain a covered PT shelter are identified in the remarks column.

TA	USE	AREA	LOCATION	UNIT	REMARKS
2	PRT	11 ACRES	BUCKEYE AND SOUTH DAKOTA	USACBRNS	
3 A, B, C	PRT	2 ACRES	EAST OF BUCKEYE, ENCLOSED BY BLDS 652 AND 660.	USACBRNS	1 Covered PT Shelter B642
5	PRT	5 ACRES	WEST OF IOWA AVE, CENTER OF NEW STAR BASE COMPLEX	USAMPS	
32	PRT	4 ACRES	NORTH OF MSCoE; ADJACENT TO BUILDING 3223	NCOA	1 Covered PT Shelter B3239 in the 3000 area
78	PRT	7 ACRES	ARMY AVENUE	43D AG	
88	PRT	7 ACRES	PFT TRACK AT NORTHWEST CORNER OF MINNESOTA AVENUE AND CONSTITUTION.	USACBRNS	
90N/S	PRT/D&C	2 ACRES	EAST OF IOWA AVENUE; NORTH OF BAKER THEATER; AND SOUTH OF SOFTBALL FIELD; AT WB77467930.	USACBRNS	
91	PRT/D&C	2 ACRES	BETWEEN TA 97 AND BUILDING 6150; BOUNDED ON THE EAST BY INDIANA AVENUE.	USACBRNS	
93A, B, C	PRT/D&C	1 ACRE	SOUTHERN MIDDLE AND NORTHERN THIRDS OF PAVED PARKING LOT WEST OF BUCKEYE AVENUE BETWEEN 4TH STREET AND 6TH STREET; AT WB76957937.	USACBRNS	
93D	PRT/D&C	2 ACRES	UNPAVED PARKING LOT BOUNDED ON NORTH BY 6TH STREET; ON SOUTHWEST BY 7TH STREET; AND ON EAST BY BUCKEYE AVENUE; AT WB76917928.	USACBRNS	
93E	PRT	9 ACRES	UNPAVED PARKING LOT BOUNDED ON THE NORTH BY 6TH STREET; ON SOUTHWEST BY 7TH STREET; AND ON EAST BY BUCKEYE AVENUE; AT WB76947954	USACBRNS	2 Covered PT Shelters B649 & B648
93F	PRT	6 ACRES	BOUNDED BY ALABAMA AVENUE ON WEST; ON EAST BY BUCKEYE AVENUE; ON SOUTH BY 6TH STREET; AND ON NORTH BY 4TH STREET; AT WB76867948.	USACBRNS	
94	PRT/D&C	8 ACRES	BETWEEN VIRGINIA AVENUE AND IOWA AVENUE.	USACBRNS	
95	PRT/D&C	6 ACRES	BOUNDED ON WEST BY ALABAMA AVENUE; ON NORTHWEST BY BUCKEYE AVENUE; AND ON SOUTHWEST BY OAK STREET.	USACBRNS	
103	PRT	1 ACRE	EAST OF ALABAMA AVENUE; NORTH OF TA107; AT WB76847865.	USACBRNS	
106A	PRT	11 ACRES	SOUTHWEST CORNER OF KANSAS AVENUE AND INDIANA AVENUE JUNCTION; BOUNDED ON NORTH BY KANSAS AVENUE; ON EAST BY INDIANA AVE; AND ON SOUTH BY TA149 AND DIRT ACCESS ROAD.	USAES	2 Covered PT Shelters B6026 & B6031
106B	PRT	1 ACRE	SOUTHWEST CORNER OF KANSAS AVENUE AND INDIANA AVENUE JUNCTION; BOUNDED ON NORTH BY KANSAS AVENUE; ON EAST BY INDIANA AVE; AND ON SOUTH BY TA149 AND DIRT ACCESS ROAD.	USAES	
107	PRT	4 ACRES	BETWEEN ALABAMA AVENUE ON WEST AND METAL BUILDING ON EAST; SOUTHERN THIRD BETWEEN MINNESOTA AVENUE AND KANSAS AVENUE ON SOUTH.	USACBRNS	2 Covered PT Shelters B786 & B788
108	PRT	7 ACRES	BOUNDED ON EAST BY ALABAMA AVENUE; ON WEST BY INDIANA AVENUE; AND ON NORTH BY BUILDING 839.	USACBRNS	2 Covered PT Shelters B785 & B767A
120	PRT	6 ACRES	BETWEEN COOLEY AND OKLAHOMA AVEs, ACROSS (EAST) FROM BUILDING 1702		

TA	USE	AREA	LOCATION	UNIT	REMARKS
122	PRT	6 ACRES	NORTH OF GERLACH FIELD; WEST OF SOFTBALL FIELD BETWEEN CONSTITUTION AND NEBRASKA AVENUE.	USMC	1 Covered PT Shelter B1627
127	SURVEYING FIELD TRAINING	10 ACRES	ON FLW ROAD 36, BEHIND BROWN HALL AT WB 77987684.	USAES	
129	PRT	3 ACRES	WEST OF CONSTITUTION AVE AND SOUTH OF SOUTH DAKOTA	USAMPS	
130	PRT	5 ACRES	WEST OF CONSTITUTION AVE AND SOUTH OF SOUTH DAKOTA	USAMPS	
131	D&C	1 ACRE	EAST OF GAMMON FIELD; WEST OF CONSTITUTION.	USAES	
153	PRT (INACTIVE)	2 ACRES	TRACK WEST OF ARTILLERY CIRCLE AT WEST 20TH STREET.	DPTMS	
160	PRT	4 ACRES	BETWEEN ALABAMA AND KANSAS AVE	USACBRNS	2 Covered PT Shelter B889 & 889A
162	PRT	4 ACRES	BETWEEN ALABAMA AND BUCKEYE AVENUE; BETWEEN BUILDING 1134 AND 1139.	USAES	
165	SURVEY FIELD TRAINING		WEST OF IOWA AT WB77097740.	USAES	
180	PRT	2 ACRES	BETWEEN NEBRASKA AVE AND ARTILLERY CIRCLE	USAMPS	1 Covered PT Shelter B1550
182	PFT	2 ACRES	EAST OF IOWA AVENUE; SOUTH OF BATTERY STREET; AT WB77457741.	USAES	
183	PFT	6 ACRES	BOUNDED ON EAST BY CONSTITUTION; ON NORTH BY CAISSON DRIVE; ON WEST BY ARTILLERY CIRCLE; AND ON SOUTH BY TSC WAREHOUSE AND MODEL SHOP.	USAES	2 Covered PT Shelters B1446 &
184	PFT		EAST OF IOWA AVENUE AT WB77267728.	USACBRNS	
185	REINFORCEMENT AREA	2 ACRES	BOUNDED ON NORTH BY 19TH STREET; ON WEST BY ARTILLERY.	USAMPS	
186	END OF COURSE TESTING	2 ACRES	BOUNDED ON NORTH BY NEBRASKA AVENUE AND ON SOUTH BY TA127.	USAES	
201	PRT	38 ACRES	ON EAST SIDE OF IOWA AVENUE AT WB 76427657.	USACBRNS	
215	CHEMICAL DEFENSE TNG FACILITY (CDTF)	124 ACRES	WEST OF FORNEY ARMY AIRFIELD AT WB74607724.	USACBRNS	

Appendix D Training Areas

1. The scheduling activity for all training areas is the DPTMS/Range Operations Scheduling Branch.
2. The responsible unit, designated as "UNIT" in the table below, ensures safe operation within the area, to include user maintenance and submission of work order for organizational maintenance (to Range Operations or ITAM) and/or DS/GS maintenance (to LRC, DPW, or NEC).
3. Bivouac activities are only permitted at designated bivouac sites. Exceptions may be requested, in writing, from Range Operations. Removal of or damage to vegetation is prohibited.
4. Storm Shelters are positioned on planned training areas. Each shelter accommodates 14 Soldiers. The remarks column describes the number of shelters positioned at that training area..

TA	USE	MA	AREA	LOCATION	UNIT	REMARKS
61	LIGHT WHEELED VEH. RECOVERY COURSE	7	45 ACRES	ON FLW ROAD 25 AT WB 83257499 ON BIG PINEY RIVER; EAST OF QUARRY COURSE; IN MANUEVER AREA 7. REMARKS: 1. SENSITIVE AREA - THIS AREA IS ON RIVER FLOOD PLAIN. BE ESPECIALLY CAREFUL TO AVOID POL SPILLS.	USMC	
75	LAND NAV COURSE	3	34 ACRES	ON FLW ROAD 10 AT WB 80057994, IN MANEUVER AREA 3.	DPTMS	
77	K-9 TRAINING		2 ACRES	1ST STREET ADJACENT TO BUILDING 2240.	DES	Inside Cantonment Area
97	CONFIDENCE COURSE		9 ACRES	ON WEST SIDE OF INDIANA AVENUE; NORTH OF INTERSECTION WITH MINNESOTA AVENUE.	CTC	Inside Cantonment Area
98	PECS COURSE		14 ACRES	BOUNDED ON EAST BY INDIANA AVENUE; ON NORTH BY FLW ROAD 12; AND ON SOUTH BY SIGNAL MAINTENANCE BUILDING.	CTC	Inside Cantonment Area
106C	CS CHAMBER		1 ACRES	AT WB 763781	CTC	Inside Cantonment Area
110	PARADE FIELD (GAMMON)		25 ACRES	BOUNDED ON WEST BY IOWA AVENUE; ON SOUTH BY KANSAS AVENUE; ON NORTH BY NORTHERN RUNWAY; AND ON EAST BY GRAVEL ROAD AREA.	DPTMS	Inside Cantonment Area
133	LEADERSHIP REACTION COURSE		5 ACRES	WEST OF TA98 AND INDIANA AVE, SOUTH OF FIRST DIRT ROAD; NORTH OF BUILDING 6150. NOTE: There are 17 stations (wet and dry). Crews of 4 to 6 arrive 2 hours early to fill the pool, draw equipment, etc. Unit must provide a FLW certified RSO.	CTC	Inside Cantonment Area
135	BAYONET ASSAULT COURSE (INACTIVE)	A35	15 ACRES	AT THE END OF THE DIRT ROAD RUNNING BETWEEN TA100 AND TA132, WEST OF INDIANA AVENUE.	CTC	INACTIVE
136	WARRIOR TOWER		1 ACRE	WEST OF TA98 AND INDIANA AVENUE; SOUTH OF TA 133	CTC	Inside Cantonment Area
137	TEAMWORK DEVELOPMENT COURSE		5 ACRES	WEST OF TA98 AND INDIANA AVENUE; SOUTH OF TA 133	CTC	Inside Cantonment Area
147	SAPPER LEADER CRS		43 ACRES	BOUNDED ON NORTH BY TA106; ON EAST BY INDIANA AVENUE; AT WB76287797.	USAES	Inside Cantonment Area
148	LAND NAV CRSE	A35	422 ACRES	ON FLW 20, ENTRANCE AT WB 754784. BOUNDED ON WEST BY TA 247, ON NORTH BY FLW EE	CTC	

TA	USE	MA	AREA	LOCATION	UNIT	REMARKS
164	MTOC DRIVERS TESTING COURSE		8 ACRES	BOUNDED ON NORTH BY SOUTH DAKOTA AVENUE; ON EAST BY CAISSON DRIVE; ON WEST BY GRASS COVERED AREA; AND ON SOUTH BY BUILDING 1230.	USACBRNS	Inside Cantonment Area
166	MOCK MP VILLAGE		11 ACRES	BOUNDED ON NORTH BY SOUTH DAKOTA; AT WB76507779.	USAMPS	Inside Cantonment Area
167	ADV. LAW ENFORCEMENT TRAINING SITE		7 ACRES	SOUTH OF TA166; AT WB76517767.	ALETD	Inside Cantonment Area
168	DECON. TRAINING SITE		8 ACRES	EAST OF INDIANA; AT WB76467801.	USACBRNS	Inside Cantonment Area
187	LIGHT WHEELED VEHICLE MAINTENANCE COURSE		7 ACRES	BOUNDED ON NORTH BY NEBRASKA AVENUE; ON EAST BY CONSTITUTION; AND ON SOUTH AND WEST BY TA212.	USAES	Inside Cantonment Area
190	UNMANNED SYSTEMS EXPERIMENT SITE	A9	206 ACRES	ON ARTILLERY CIRCLE AT WB7707614.	Futures Center Maneuver Support Battle Lab	
193	USMC DRIVER COURSE	9	16 ACRES	ON ARTILLERY CIRCLE AT WB7773758.	USMC DET	
204	USMC TNG SITE		9 ACRES	SOUTHEAST OF SOUTH DAKOTA AVENUE.	USMC DET	1. Inside Cantonment Area. 2. 10 Storm Shelters sited.
206A	FIELD ENGR COMPLEX		36 ACRES	ON FLW ROAD 1 (IOWA AVENUE).	TTC	Inside Cantonment Area
206B	DEMOLITIONS & LANDMINE WARFARE COMPLEX		65 ACRES	ON FLW ROAD 1 (IOWA AVENUE).	DPTMS	1. Inside Cantonment Area. 2. 3 Storm Shelters sited
207	FIRE FIGHTING TRAINING SITE		11 ACRES	WEST OF FLW ROAD 1; EAST OF TA210; AT WB75467597.	DPW	Inside Cantonment Area
208	HMMWV COURSE		16 ACRES	ON FLW ROAD 1; AT WB75507547.	USAMPS	1. Inside Cantonment Area 2. 4 Storm Shelters sited.
209	AIR FORCE READINESS TRAINING		2 ACRES	WEST OF FLW ROAD 1, ACROSS FROM TA 206, SOUTH OF AIRFIELD.	AIR FORCE	Inside Cantonment Area
210	EVASIVE DRIVING COURSE		100 ACRES	ON FLW ROAD 28 AT WB75447573; SOUTH OF AIRFIELD	ALETD	Inside Cantonment Area
211	FIXED BRIDGE TRAINING COMPLEX		21 ACRES	SOUTHWEST OF FLW ROAD 1 AND FLW ROAD V AT WB 75667516.	USAES	Inside Cantonment Area

TA	USE	MA	AREA	LOCATION	UNIT	REMARKS
219	BABBS AIRFIELD, NBC TRAINING COMPLEX		194 ACRES	BOUNDED ON WEST BY FLW ROAD, NORTH OF TA23, WB71207430	AIR FORCE	1. Inside Cantonment Area 2. 2 Storm Shelters sited.
224	COUNTERMINE TEST FACILITY	28	42 ACRES	AT WB71797465, FORMER BABBS DROP ZONE	HDTC	
227	MEDICAL FIELD TRAINING SITE	25	25 ACRES	AT WB72087346.		DORMANT
228	MTOC DRIVING COURSE	A13	36 ACRES	SOUTH OF HWY 38; WEST OF FLW 1	USACBRNS	20 Storm Shelters sited.
231	MTOC/HEMTT	33	32 ACRES	ON FLW ROAD 5 AT WB 7147838.	USACBRNS	
232	EPW TRAINING SITE	28	156 ACRES	NORTHWEST OF BLOODLAND LAKE AT WB72737406.	DPTMS	
235	HUMANITARIAN DEMINING TRAINING SITE	13	104 ACRES	FLW RT WP (WEST SIDE), SOUTH OF FLW RT 38	USAES	
235A	COUNTER EXPLOSIVES HAZARD CENTER (CEHC)	13A	66 ACRES	FLW RT WP (EAST SIDE), SOUTH OF FLW RT 38	USAES	17 Storm Shelters sited.
236	MTOC/5 TON	26	182 ACRES	ON FLW ROAD PA AT WB7417202.	USACBRNS	17 Storm Shelters sited.
244	ENGR EQUIP OPERATORS COURSE		925 ACRES	ON FLW ROAD 28 AT INTERSECTION WITH FLW ROAD 5 AT WB74287568. REMARKS: ALL VEHICLE OPERATION MUST BE CONFINED TO THE CONTROLLED WATERSHED LIMITS OF THE SEDIMENTATION BASINS.	USAES	1. Located outside of Maneuver Area 2. 79 Storm Shelters sited
247	LAND NAVIGATION	35	512 ACRES	WB 73487935	USACBRNS	17 Storm Shelters sited.
250	FLOAT BRIDGE, FOX VEHICLE TNG COMPLEX	4	46 ACRES	ON BIG PINEY RIVER ON FLW ROAD 25 AT WB83807750. REMARKS: SENSITIVE AREA - BE ESPECIALLY CAREFUL TO AVOID POL SPILLS. THE RIVER IS A PUBLIC WATERWAY - DO NOT DELAY CIVILIAN WATER TRAFFIC UNNECESSARILY.	USAES	17 Storm Shelters sited.
251	MTOC/HEMTT	25	12 ACRES	AT WB 833771.	USACBRNS	2 Storm Shelters sited.
256	QUARRYMAN ASPHALT OPERATORS COURSE		130 ACRES	ON FLW ROAD 25 AT WB81327530. REMARKS: 1. SENSITIVE AREA - THIS AREA IS ON A RIVER FLOOD PLAIN. THE RESPONSIBLE UNIT WILL MAINTAIN THE SEDIMENTATION BASIN THAT CATCHES ALL RUNOFF BEFORE ENTERING THE RIVER. THE ENVIRONMENTAL DIVISION, DPW, IS RESPONSIBLE FOR WATER QUALITY CONTROL COORDINATION.	USAES	Located outside of Maneuver Area
259	USMC MTOC	7	14 ACRES	ON FLW ROAD 25 AT WB 81047579. REMARKS: 1. SENSITIVE AREA - THIS AREA IS ON RIVER FLOOD PLAIN. BE ESPECIALLY CAREFUL OF POL SPILLS. ABSOLUTELY NO DRIVING OFF THE EXISTING GRAVEL ROADS.	USMC	
275	SAPPER LEADER COURSE BASE CAMP	22/23	64 ACRES	ON FLW ROAD TT AT WB68287059. REMARKS: 1. THIS IS AN EXTREMELY SENSITIVE ARCHEOLOGICAL AREA. ABSOLUTELY NO EXCAVATION OF ANY KIND. NATURAL AND ARCHEOLOGICAL FEATURES ARE NOT TO BE DISTURBED. POINT OF CONTACT IS THE NATURAL RESOURCES OFFICE, DPW.	USAES	4 Storm Shelters sited.
290	IED DETECTION AND DEFEAT	29	535 ACRES	H HIGHWAY/MANEUVER AREA 29	USAES	

TA	USE		AREA	LOCATION	UNIT	REMARKS
310	EPOW TRAINING AREA	31	7 ACRES	FLW RT 20, WB729711	USAMPS	17 Storm Shelters sited.
400	HEAVY FORCES MANEUVER	37	94 ACRES	AT WB 741812	USACBRNS	
401C	STRIKER TRAINING SITE	13	33 ACRES	AT WB 710695	USACBRNS	17 Storm Shelters sited.
601	RAPPEL #1	3	8 ACRES	AT WB82247883	DPTMS	DORMANT
602	RAPPEL #2	4	3 ACRES	ON FLW ROAD 25 AT WB83747832, CONSOLIDATED ROCK, SHORT FACE	DPTMS	DORMANT
603	RAPPEL #3	5	2 ACRES	AT WB81497659.	DPTMS	
604	RAPPEL #4	8	2 ACRES	ON FLW ROAD NA AT WB79307459; IN MANEUVER AREA 8. REMARKS: 1. NATURAL CLIFF. DO NOT DISTURB SOIL OR VEGETATION.	DPTMS	
605	RAPPEL #5	21		AT WB69326973.	DPTMS	
606	RAPPEL #6	22	11 ACRES	SOUTH OF FLW ROAD D AT WB68747031 (SAPPER LEADER COURSE)	USAES	
607	RAPPEL #7	35	1 ACRE	AT WB74757973.	DPTMS	DORMANT
608	RAPPEL #8	35	2 ACRES	AT WB74667987.	DPTMS	DORMANT
609	RAPPEL #9	37	9 ACRES	AT WB73718188.	DPTMS	
610	RAPPEL #10	36A	7 ACRES	AT WB72298270.	DPTMS	DORMANT
615	RAPPEL #15	11	3 ACRES	AT WB74797070	DPTMS	

Appendix E MOUT and TTB Sites

1. Grid coordinates mark the location of the telephone connection, if available. For sites without a telephone connection, grid coordinates mark the entrance to the training area.
2. The scheduling activity for all bivouac areas is the DPTMS/Range Operations Scheduling Branch. The responsible unit, designated as "UNIT" in the table below, ensures safe operation of the site, to include user maintenance and submission of work order for organizational maintenance (to range maintenance) and/or DS/GS maintenance (to LRC, DPW, and NEC).
3. Removal or damage to, vegetation is prohibited.
4. All vehicles operating within the footprint of these TAs must maintain speeds of less than 5 mph and have a ground guide at all times.
5. Tracked vehicles operated within the TA footprint must remain at least 5 meters from any permanent structure, including concrete tent pads, towers, and other vertical construction.
6. Storm Shelters are positioned on planned training areas. Each shelter accommodates 14 Soldiers. The remarks column describes the number of shelters positioned at that training area.
7. No digging or excavation allowed in TTBs or MOUTs without prior approval from Range Operations.

TA	USE	MA	AREA	LOCATION	UNIT	REMARKS
74A	TACTICAL TRAINING BASE (TTB)	3	16 ACRES	ON SPORTSMANS ROAD AT WB 82008025, IN MANEUVER AREA 3	NCOA	1. ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE. 2. CONTACT RANGE OPERATIONS FOR USE OF PYROTECHNICS OR SMOKE PRODUCING ORDNANCE.
74M	MOUT	3	5 ACRES	ON SPORTSMANS ROAD AT WB 814801, IN MANEUVER AREA 3	NCOA	1. ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE. 2. CONTACT RANGE OPERATIONS FOR USE OF PYROTECHNICS OR SMOKE PRODUCING ORDNANCE.
221	TTB	26	71 ACRES	ON FLW 1 AT WB 74607365	USAES	10 STORM SHELTERS SITED.
221M	MOUT	26		ON FLW 1 AT WB 74607365	USAES	
223	TTB	25	27 ACRES	ON FLW H AT WB 72757187	USACBRNS	8 STORM SHELTERS SITED.
229 F	TTB	16	8 ACRES	ON FLW F AT WB 74046645	USAMPS	ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE.
230	MOUT VILLAGE	28	17 ACRES	ON FLW ROAD 28 AT WB 71647548	USAMPS	NO CO-USE REQUIRED, UP TO 4 UNITS ALLOWED ON SITE DAILY. UNIT WILL BE ASSIGNED BUILDING/SECTION FOR USAGE WHEN APPROVAL IS GIVEN.
239	TTB	28	29 ACRES	ON FLW H AT WB 70817413	USAES	17 STORM SHELTERS SITED.
241F	TTB	24	23 ACRES	ON FLW 37 AT WB 70967248	USACBRNS	1. ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE. 2. 17 STORM SHELTERS SITED.
241M	MOUT	24	5 ACRES 5 ACRES	ON FLW 37 AT WB 70257238	USACBRNS	ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE.

TA	USE	MA	AREA	LOCATION	UNIT	REMARKS
242A	TTB	31	27 ACRES	ON FLW 20 AT WB 71647597	USAMPS	ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE.
246	(FORSCOM TTB)	34	116 ACRES	ON FLW 5 AT WB 74007765	EROC CERL	1. ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE. 2. IN CASE OF SCHEDULING CONFLICT, FORSCOM UNITS HAVE PRIORITY. 3. 17 STORM SHELTERS SITED.
247M	MOUT	35	6 ACRES	ON FLW 5 AT WB 73707795	RANGE OPERATIONS	CONTAINER (MILVAN) MOUT FACILITY
255	TTB		13 ACRES	ON FLW 37 AT WB 711725	USACBRNS	
257B	TTB	4	40 ACRES	ON FLW 22 AT WB 82027769	USMC	ACCESS TRAILS THROUGH AREA MUST REMAIN UNOBSTRUCTED WHEN NOT IN USE.
257C	MOUT	4	45 ACRES	ON FLW ROAD 22 AT WB 82907837.	USMC	
275M	MOUT	22		ON FLW ROAD TT AT WB 68407085	USAES	
401F	TTB	14	17 ACRES	AT WB 71956955	USACBRNS	17 STORM SHELTERS SITED.
401M	MOUT	14	1 ACRE	AT WB 72206950	USACBRNS	

Appendix F Bivouac Sites

1. Grid coordinates mark the location of the telephone connection, if available. For sites without a telephone connection, grid coordinates mark the entrance to the training area.
2. The scheduling activity for all bivouac areas is the DPTMS/Range Operations Scheduling Branch. The responsible unit, designated as "UNIT" in the table below, ensures safe operation of the site, to include user maintenance and submission of work order for organizational maintenance (to range maintenance) and/or DS/GS maintenance (to LRC, DPW, and NEC).
3. Removal or damage to, vegetation is prohibited
4. Storm Shelters are positioned on planned training areas. Each shelter accommodates 14 Soldiers. The remarks column describes the number of shelters positioned at that training area.

TA	MA	AREA	DESCRIPTION	LOCATION	COMS	UNIT	REMARKS	NOTES
70	7		INACTIVE	WB 83357470	RADIO	DPTMS		1
74B	3	13 ACRES	BIVOUAC/ FTX	WB 81468003	RADIO	NCOA	5 STORM SHELTERS SITED.	2
109	8	17 ACRES	BIVOUAC/ FTX	WB 81087530	RADIO	DPTMS		3
123	8	6 ACRES	BIVOUAC/ FTX	WB 79617435	RADIO	DPTMS		3
125	8	54 ACRES	BIVOUAC/ FTX	WB 79597528	6-1563	DPTMS		3
126	6	29 ACRES	BIVOUAC/ FTX	WB 79157575	6-1564	DPTMS		3
128	6	31 ACRES	BIVOUAC/ FTX	WB 79667533	RADIO	DPTMS		3
191	9	41 ACRES	BIVOUAC/ FTX	WB 77707524	RADIO	DPTMS		3
194	8	24 ACRES	BIVOUAC/ FTX	WB 79007396	6-1567	DPTMS		3
212		9 ACRES	BIVOUAC/FTX		RADIO	DPTMS		3
220	26	41 ACRES	BIVOUAC/ FTX	WB 74597434	RADIO	DPTMS		3
222	26	16 ACRES	INACTIVE	WB 74107295	RADIO	DPTMS		1
225	25	32 ACRES	BIVOUAC/ FTX	WB 72577175	6-1576	DPTMS		3
229	16	15 ACRES	BIVOUAC/ FTX	WB 74246669	RADIO	DPTMS		3
233	25	25 ACRES	BIVOUAC/ FTX	WB 71827139	RADIO	DPTMS		3, 4
234	16	116 ACRES	BIVOUAC/ FTX	WB 73886475	RADIO	DPTMS	3 STORM SHELTERS SITED	3
237	25	16 ACRES	BIVOUAC/ FTX	WB 71527139	6-1575	DPTMS		3
238	31	29 ACRES	BIVOUAC/ FTX	WB 72157546	6-1576	DPTMS		3
240N	29	47 ACRES	BIVOUAC/FTX	WB 70737384	6-1577	DPTMS	17 STORM SHELTERS SITED	3
240S	24	33 ACRES	BIVOUAC/FTX	WB 70577307	6-1578	DPTMS		3
241	24	101 ACRES	STX LANES	WB 70967248	RADIO	DPTMS		6
242B	30 & 31	24 ACRES	BIVOUAC/ FTX	WB 71157583	6-1579	DPTMS		3,4
243	27	50 ACRES	MECH CATEX, BIV/ FTX	WB 73577668	6-1580	DPTMS		5
248	37N	102 ACRES	MECH BIVOUAC	WB 73608153	RADIO	DPTMS		5
249A	31	16 ACRES	LZ/BIVOUAC	WB 72458024	RADIO	DPTMS		3
249B	31	22 ACRES	LZ/BIVOUAC	WB 71558057	RADIO	DPTMS		3
253	35	8 ACRES	BIVOUAC/ FTX	WB 74377757	6-1583	DPTMS		3
254	34	11 ACRES	BIVOUAC/ FTX	WB 74037714	RADIO	DPTMS		3
257A	4	15 ACRES	BIVOUAC/ FTX	WB 82367805	6-1585	DPTMS	17 STORM SHELTERS SITED	3

TA	MA	AREA	DESCRIPTION	LOCATION	COMS	UNIT	REMARKS	NOTES
272	13A	30 ACRES	BIVOUAC/ FTX	WB 73837000	6-1589	DPTMS		3, 4
273	13A	25 ACRES	BIVOUAC/ FTX	WB 73786967	6-1590	DPTMS		3
276	13A	19 ACRES	BIVOUAC/FTX	WB 74457045	RADIO	DPTMS		3
277	13A	20 ACRES	BIVOUAC/FTX	WB 74457020	RADIO	DPTMS		3
280	9	35 ACRES	BIVOUAC/FTX	WB 77607490	RADIO	DPTMS		3
281	12	240 ACRES	BIVOUAC/FTX	WB 66807515	RADIO	DPTMS		3,8
283	9	26 ACRES	BIVOUAC/FTX	WB 76257490	RADIO	DPTMS		3
284	16	72 ACRES	BIVOUAC/FTX	WB 74806600	RADIO	DPTMS		3,9
337	25	9 ACRES	BIVOUAC/ FTX	WB 71607163	6-1575	D[TMS		3, 4

Notes:

1. Environmentally sensitive area, off limits to training (Appendix N)
2. Military police working dog area only
3. Hand tool excavation only
4. Closed for restoration
5. Mechanical excavation is authorized. Must remain 25 feet from standing trees
6. No excavation
7. Sapper Base Camp
8. No Pyrotechnics, adjacent to installation boundary

Appendix H
FIRE DANGER CLASS RESTRICTION CHART

DANGER CLASS	RESTRICTIONS
0 (VERY LOW)	None.
1 (LOW)	All authorized ammunition, explosives and pyrotechnics are allowed on live-fire ranges and training areas, as approved by Range Operations.
2 (MODERATE)	Do not use white phosphorus (WP) or other incendiary devices on ranges and training areas where a large accumulation of natural litter and debris exists.
3 (HIGH)	Tracer ammunition, pyrotechnics, WP, or incendiary devices will be used only on ranges and training areas that are contained by a currently maintained firebreak. The range or training area does not have to be burned prior to firing unless WP or incendiary devices are to be used. Use will be approved by Range Operations.
4 (VERY HIGH)	No incendiary device or WP will be used. Tracer ammunition and pyrotechnics will be used only on ranges and training areas contained by a currently maintained fire break and pre-burned as approved by the Fort Leonard Wood Fire Chief. Explosives, and explosive projectiles may be used only on ranges and training areas contained by a currently maintained firebreak. The area will be pre-burned. Use will be approved by Range Operations.
5 (EXTREME)	Only ball and blank ammunition will be used. No other type of ammunition, pyrotechnic or explosive will be used with the exception of hand grenades which may be used on Range 31 and demolition explosives may be used on Ranges 33 and 36 for EOD emergency operations only. Use will be approved by Range Operations.

Appendix I

RFMSS STATUS CODES

PEN-CUST	Pending-Customer – The request has not been approved through the chain of command. A number will follow the status. 1 - Platoon 2 – Company 3 – Battalion 4 – Brigade
CAN-CUST	Customer Canceled – Someone in the chain of command has cancelled the request.
DISA-CUST	Customer Disapproved - The request is invalid, or the request is not needed.
PEN-RC	Pending-Range Operations – The request is pending the approval of DPTM.
DISA-RC	Range Operations Disapproved – DPTM has disapproved the request. This status is used when the request has conflicts.
CAN-RC	Range Operations Cancelled – The request is invalid, or the request is not needed.
COND-RES	Conditional Reservation – The request has been reserved to hold the facility, but <u>DOES NOT</u> grant the requestor access to the facility.
RES	Reservation – The request is in an approved status.

**Appendix J
SAMPLES OF FORMS**

TTB IN/OUT PROCESSING CHECKLIST				
DATE		UNIT		PHONE #
TRAINING AREA			NUMBER OF VEHICLES	
# OF TROPS		# OF DRILLS		# OF OFFICERS
INPROCESSING			OUTPROCESSING	
UNIT REP:			UNIT REP:	
CARD #	EXP DATE		CARD #	EXP DATE
INSPECTOR			INSPECTOR	
INPROCESSING		OUTPROCESSING		
YES	NO	YES	NO	
				AREA PROPERLY POLICED
				GUARD POSITIONS POLICED
				TENT PADS SWEEP/UNDAMAGED
				OBSTACLES REMOVED
				NATURAL VEGETATION INTACT
				PALLETS/FIREWOOD NEATLY STACKED
				BUILDINGS SWEEP/DOORS & WINDOWS OK
				GENERATOR PIT CLEAN
				NO TRASH IN CLEARING BARRELS
				PORTABLE TOILETS CLEAN/SERVICEABLE
				FIREGUARDS/FIRE EXTINGUISHERS PRESENT
				FM COMMUNICATION WITH RANGE OPERATIONS
AREAS OF CONCERN				
	BRIEFED ON POV/MILITARY VEHICLE PARKING			
	BRIEFED ON AMBUSH/TCP/IED OVERLAYS			
	BRIEFED ON PYRO WINDOWS (4HRS/DUNNAGE)			
	BRIEFED ON INCLEMENT WEATHER			
	BRIEFED ON HUNTING AREA			
	BRIEFED ON ROAD IN TRAINING AREA			
	BRIEFED ON ACCIDENT/INJURY IN TRAINING AREA			
	BRIEFED ON OPENING/CLOSING REPORTS			
	BRIEFED ON CONTACTING TA 230 CADRE			
	BRIEFED ON CONVOYS/FOOTMARCHES			
DATE UNIT WANTED TO CLEAR TA				
DATE UNIT CLEARED TA				
INPROCESSING CHECKLIST RECEIVED BY:				
REMARKS:				

FLW Form 2010 (Sept 2008)

TRAINING AREA IN/OUT PROCESSING CHECKLIST				
DATE		UNIT		PHONE #
TRAINING AREA			NUMBER OF VEHICLES	
# OF TROPS		# OF DRILLS		# OF OFFICERS
INPROCESSING			OUTPROCESSING	
UNIT REP:			UNIT REP:	
CARD #	EXP DATE		CARD #	EXP DATE
INSPECTOR			INSPECTOR	
INPROCESSING		OUTPROCESSING		
YES	NO	YES	NO	
				AREA PROPERLY POLICED
				FIGHTING POSITIONS FILLED
				TENT DITCHES FILLED
				OBSTACLES REMOVED
				NATURAL VEGETATION INTACT
				PALLETS/FIREWOOD NEATLY STACKED
				BUILDINGS SWEEPED/DOORS & WINDOWS OK
				PORTABLE TOILETS CLEAN/SERVICEABLE
				FIREGUARDS/FIRE EXTINGUISHERS PRESENT
				FM COMMUNICATION WITH RANGE OPERATIONS
AREAS OF CONCERN				
	BRIEFED ON POV/MILITARY VEHICLE PARKING			
	BRIEFED ON AMBUSH/TCP/IED OVERLAYS			
	BRIEFED ON PYRO WINDOWS (4HRS/DUNNAGE)			
	BRIEFED ON INCLEMENT WEATHER			
	BRIEFED ON HUNTING AREA			
	BRIEFED ON ROAD IN TRAINING AREA			
	BRIEFED ON ACCIDENT/INJURY IN TRAINING AREA			
	BRIEFED ON OPENING/CLOSING REPORTS			
	BRIEFED ON CONTACTING TA 230 CADRE			
	BRIEFED ON CONVOYS/FOOTMARCHES			
DATE UNIT WANTED TO CLEAR TA				
DATE UNIT CLEARED TA				
INPROCESSING CHECKLIST RECEIVED BY:				
REMARKS:				

FLW Form 2010-1 (Sept 2008)

MOUT IN/OUT PROCESSING CHECKLIST				
DATE		UNIT		PHONE #
TRAINING AREA			NUMBER OF VEHICLES	
# OF TROPS		# OF DRILLS		# OF OFFICERS
INPROCESSING			OUTPROCESSING	
UNIT REP:			UNIT REP:	
CARD #		EXP DATE		CARD #
INSPECTOR		INSPECTOR		
INPROCESSING		OUTPROCESSING		
YES	NO	YES	NO	
				AREA PROPERLY POLICED
				OBSTACLES REMOVED
				NATURAL VEGETATION INTACT
				BUILDINGS POLICED
				NO TRASH IN CLEARING BARRELS
				PORTABLE TOILETS CLEAN/SERVICEABLE
				BRASS AND RESIDUE POLICED
				FM COMMUNICATION WITH RANGE OPERATIONS
AREAS OF CONCERN				
	BRIEFED ON POV/MILITARY VEHICLE PARKING			
	BRIEFED ON AMBUSH/TCP/IED OVERLAYS			
	BRIEFED ON PYRO WINDOWS (4HRS/DUNNAGE)			
	BRIEFED ON INCLEMENT WEATHER			
	BRIEFED ON HUNTING AREA			
	BRIEFED ON ROAD IN TRAINING AREA			
	BRIEFED ON ACCIDENT/INJURY IN TRAINING AREA			
	BRIEFED ON OPENING/CLOSING REPORTS			
	BRIEFED ON CONTACTING TA 230 CADRE			
	BRIEFED ON CONVOYS/FOOTMARCHES			
DATE UNIT WANTED TO CLEAR TA				
DATE UNIT CLEARED TA				
INPROCESSING CHECKLIST RECEIVED BY:				
REMARKS:				

FLW FORM 2010-2 (Sept 2008)

Appendix K
REQUEST FOR LATRINE SUPPORT

ATSN-CBR

8 MAY 2017

MEMORANDUM FOR Directorate of Public Works, Operations Branch, ATTN: IMLD-PWO

SUBJECT: Portable Latrines

1. Request portable latrines be placed at WB 704618 for an FTX conducted by B-3-10 IN from 1200 hours on 22 Aug14 to 1200 hours on 25 Aug 17.
2. The unit will have 173 male and 74 female personnel on site.
3. A strip map is attached.
4. POC for this memorandum is 1SG Sanford at 596-8248.

Encl

BART O. RIDDEL
CPT, IN
Commanding

Figure K-1
Sample Memorandum Requesting Latrine Support

Appendix L

CBRN Hasty Decontamination Training Sites

Requirements/Restrictions as part of the Standard Operating Procedures for decontamination training in field locations:

1. No form of detergents or soap will be added to the washwater in the field.
2. No form of chemical simulant (e.g., PEG-200, antifreeze, methyl salicylate, diethyl malonate) will be applied to vehicles or equipment in the field.
3. Washwater runoff will be channelized NOT to run directly back into a lake, pond, or stream.
4. Students and trainers will avoid washing (direct spray) onto engine components in the field.
5. The decontamination sites (aka Hasty Decon sites) will be upstream (uphill) of the Monitoring Points listed in the current NPDES Discharge Permit (MO-0117251).
6. Instructors, Course Managers, Drill Sergeants, and OICs/NCOICs of Hasty Decon training will attend a briefing on the environmental compliance measures and Range Operations procedures, and they must pass a certification test.
7. Deliberate decontamination training, or any activity that results in the washing/rinsing of drivetrain (in whole or in part) is authorized ONLY at wash racks or RG 27A. All runoff from deliberate decontamination conducted at RG 27A must drain into the existing pond. No modification of the range is permitted except for work approved by the Director, DPTMS and performed by the Integrated Training Area Management (ITAM) program.

Decon Site #	Location	Description	Monitoring Point	Monitoring Location	Areas To Request	Comment
1	WB 7311873987	TA 232	001	WB 72767572	TA 232	Need to haul water into site
2	WB 7150073399	RG 33 between FLW H and W	001	WB 72767572	MA 25	Need to haul water into site. Site is not available when RG 33 is active.
3	WB 7125872527	Area between Penn's Pond & FLW H	016	WB 68387304	TA 255	Need to haul water into site
4	WB 7258871762	TA 225	016	WB 68387304	TA 225	Need to haul water into site. 58 TH Trans. 3-mile Drivers' Track.
5	WB 7270271832	TA 223	001	WB 72767572	TA 223	Need to haul water into site. 58 th Trans. TTB.
6	WB 7125171797	Penn's Pond	016	WB 68387304	Penn's Pond, MA 25	Decon operations limited to area south of pond.
7	WB 6891870893	McCann Hollow near TA 275A	012	WB 69327119	MA 22	Intermittent Pond, hard to find, steep terrain, very thick. Coordinate with ITAM office at least 2 weeks in advance of event for mowing if required.
8	WB 7097674694	Babb AF Lake	001	WB 72767572	TA 219	Coordination with AF DET Required.
9	WB7324775620	Pond North of Prime Power School	001	WB 72767572	TA 244	Coordination with 1 st EN BDE required.
10	WB 7308176280	Pond near TA 243	001	WB 72767572	TA 244	Coordination with 1 st EN BDE required.
11	WB 7352782259	Ballard Hollow near Roubidoux Creek	015	WB 74478282	TA 400	Site Overgrown in areas. Coordinate with ITAM office at least 2 weeks in advance of event for mowing if required.
12	WB 7313168950	Pond on entrance road to Range 27A	012	WB 69327119	MA 14	Pond on side of road entering Range 27A area

Appendix M
BLAST REQUEST



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
COMPANY B, 554th ENGINEER BATTALION,
U.S. ARMY ENGINEER SCHOOL
MSCoE & FORT LEONARD WOOD, MISSOURI 65473-8941

ATSE-DEB

26 April 2017

MEMORANDUM THRU Commander, 554th Engineer Battalion, ATTN: Battalion S-3, Fort Leonard Wood, Missouri 65473

FOR Range Division, ATTN: Range Operations, Fort Leonard Wood, Missouri 65473

SUBJECT: Use of Live Demolitions for EOBC 6-08 Live-fire Exercise on 23 May 2017

1. This request is to obtain approval for the use of live explosives for training purposes on the FLW installation during EOBC Class 6-06 Demolition Training on 23 May 2017. Five separate blast windows (12 shots) will be requested between 0700 and 1700 on May 23 at Range 33, and one pyro window (4 shots). Each shot will be separated by a minimum of one minute. Listed below are the type, explosive weight and location of each charge:

2. The following is the breakdown of the blasts.

Breaching Drill

Blast Number	Explosive	DODIC	Wt of Charges	Number of Charges	Total Wt	Range
1						
1	Bangalore Torpedo	M028	10.5 lb	2	21.44	33
2	Bangalore Torpedo	M028		2	21.44	
3	Bangalore Torpedo	M028		2	21.44	
4	Bangalore Torpedo	M028		2	21.44	
5	Bangalore Torpedo	M028		2	21.44	
Total				10	107.2 lbs	

Shots 1-5: Items are surfaced laid, single primed, single initiated and command detonated using MDI.

ATSE-DEB

SUBJECT: Use of Live Demolitions for EOBC 6-08 Live-fire Exercise on 22 May 2017

Confidence Blast

Blast Number	Explosive	DODIC	Wt of Charges	Number of Charges	Total Wt	Range
2						
1	TNT 1/4 lbs blocks	M030	0.25lbs	39	9.75 lbs	33
1	Dynamite	M591	0.50lbs	39	19.5 lbs	33
1	C-4 M112	M023	.625lbs	39	48.75 lbs	33
Total				117	78	

All items are surfaced laid, single primed, dual initiated with command (primary) and time delay (secondary) MDI.

Steel Cutting/Shape Charges

Blast Number	Explosive	DODIC	Wt of Charges	Number of Charges	Total Wt	Range
3						
1	C-4 M112	M023	1.25 lbs	40	50 lbs	33
2	15 lb Shape charges	M420	11.2 lbs	30	33.6 lbs	33
Total					94.8 lbs	

Shot 1: all items are surfaced laid, single primed. Dual initiated and command detonated using MDI.

Shot 2: all items are surfaced laid, single primed. Dual initiated and command detonated using MDI.

Steel Cutting/Shape Charges

Blast Number	Explosive	DODIC	Wt of Charges	Number of Charges	Total Wt	Range
4						
1	C-4 M112	M023	1.25 lbs	40	50 lbs	33
2	15 lb Shape charges	M420	11.2 lbs	4	44.8 lbs	33
Total					94.8 lbs	

Shot 1: all items are surfaced laid, single primed. Dual initiated and command detonated using MDI.

Shot 2: all items are surfaced laid, single primed. Dual initiated and command detonated using MDI.

ATSE-DEB

SUBJECT: Use of Live Demolitions for EOBC 6-08 Live-fire Exercise on 22 May 2017

Cratering Charges

Blast Number	Explosive	DODIC	Wt of Charges	Number of Charges	Total Wt	Range
5						
1	C-4 M112	M023	1.25 lbs	4	5 lbs	33
1	Cratering Charge	M039	40 lbs	3	120 lbs	33
Total					125 lbs	
2	C-4 M112	M023	1.25 lbs	4	5 lbs	33
2	Cratering Charge	M039	40 lbs	3	120 lbs	33
Total					125 lbs	

Shot 1: all items are placed sub-surfaced, dual primed, dual initiated and command detonated using MDI.

Shot 2: all items are placed sub-surfaced, dual primed, dual initiated and command detonated using MDI.

3. All students will be in blast resistant bunkers on Range 33. The firing teams for all blasts will be in a blast resistant/missile proof bunker.

4. POC for this memorandum is the undersigned at 596-0793 or 573-528-3148.

2 Encls

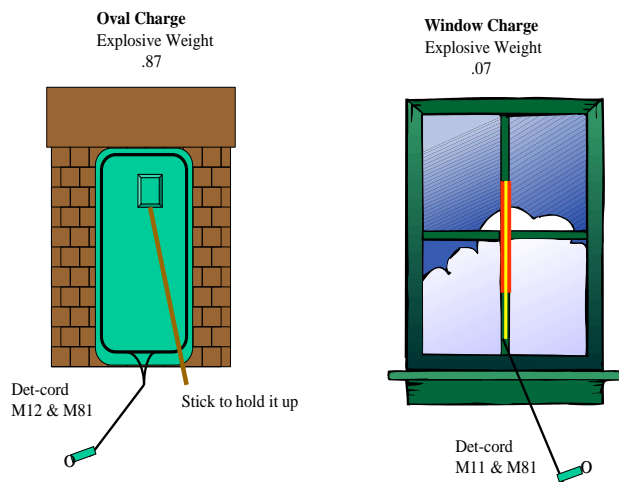
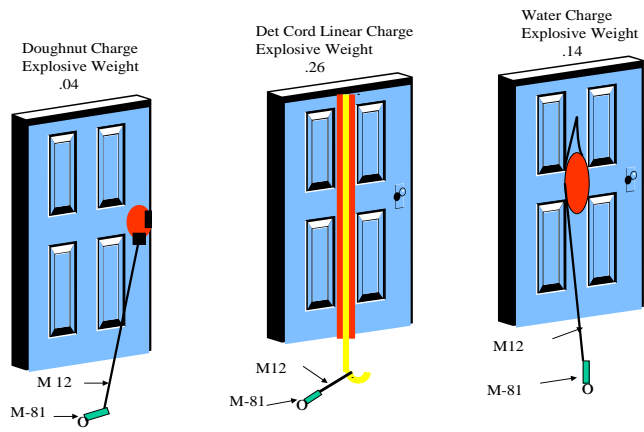
1. Explosive Weight Samples

2 . Confidence Blast Data

SEYMOUR JONES

CPT, EN

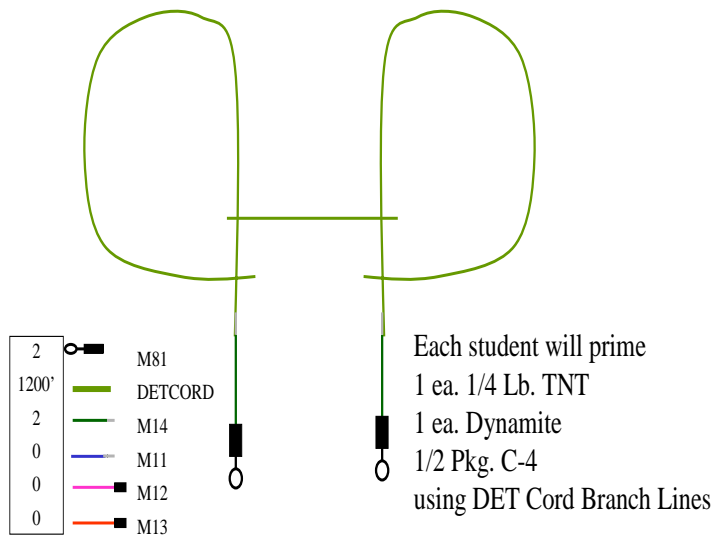
Commanding



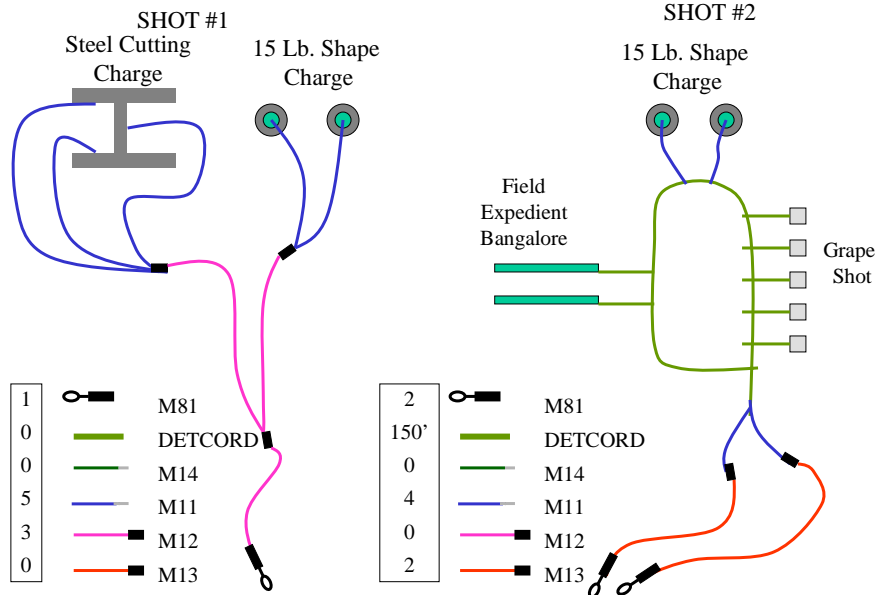
Explosive Weights

Encl 1

BLAST #1 (CONFIDENCE BLAST) **1 SHOT**



BLAST #2 **2 SHOTS**



ENCL 2

Appendix N

FORT LEONARD WOOD ENVIRONMENTAL OVERLAY GUIDELINES

The FLW environmental overlay was designed to provide information about natural and cultural resources and other environmentally sensitive or otherwise off-limits areas on Fort Leonard Wood. It is printed at a scale of 1:50,000, and can be overlaid directly on the Fort Leonard Wood Reservation Special Map. The overlay, which supplements all existing regulations, guidelines, and state and federal laws, is intended to be used by scheduling personnel, trainers, planners, land managers, and regulatory personnel in order to minimize damage to sensitive areas and help guide future development. The DPW Environmental Division will periodically update this overlay. Any questions regarding this overlay or training restrictions in these areas should be referred to DPW Natural Resources Branch (596-2814). The categories and their respective restrictions/training limitations are as follows:

N-1. Endangered Bat Area – Restricted. These locations are extremely sensitive due to the presence of federally endangered species. They are sensitive to disturbance, development, training activities, and noise, especially during the spring and fall migration periods. Any activities must be approved by DPW Natural Resources in consultation with the U.S. Fish and Wildlife Service. Disturbance of bats during hibernation may cause bat mortality.

Brooks Cave	(WB 7701 7376)	Saltpeter Cave #3	(WB 6855 6859)
Wolf Den Cave	(WB 7257 7476)	Freeman Cave	(WB 8339 7556)
Joy Cave	(WB 7250 7456)	Davis Cave #2	(WB 6787 6965)

a. The following constraints apply to all activities to ensure that bat habitat is neither altered nor destroyed.

- (1) These caves are off-limits for military operations.
- (2) There will be no development in the 20-acre area (162-meter radius) surrounding these caves.
- (3) Foot maneuvers are permitted within this restricted use zone.
- (4) No smoke, CS gas, pyrotechnics, or noise simulators are permitted during the followings periods:

Wolf Den Cave, Brooks Cave, Joy Cave, and Davis Cave #2:	August 1 – May 31
Saltpeter Cave #3, Freeman Cave:	April 1 – October 31

b. Bat Management Zone 1. The area between 162 and a 457-meter radius from the cave (160 acres). No bivouac, smoke, CS gas, or use of noise simulators is permitted during the following dates from 1 hour before sunset to 1 hour after sunrise:

Wolf Den Cave, Brooks Cave, Joy Cave, and Davis Cave #2:	March 15 – May 31 and August 1 - October 15
Saltpeter Cave #3, Freeman Cave:	April 1 – October 31

c. Bat Management Zone 2. The area between a 457 and a 1932-meter radius from the cave. Disruptive activities should be given a low priority or restricted, especially during the spring and fall. The DPW Natural Resources Branch must approve any training activity which results in the loss of tree canopy. Bat Management Zones 1 and 2 combined represent a 1.2 mile (1932 meters) radius buffer zone around known Indiana and Gray bat locations. Undisturbed stream corridors and forest canopy are important habitat components and are not to be impacted without approval from DPW Natural Resources. Noise should be minimized within this area, especially during the spring and fall periods. Foot maneuvers are permitted year-round. Development of training facilities and sites should be given a low priority within this zone.

N-2. Bald Eagle Nest. A buffer zone has been established around this nest site (WB 8330 7920). This zone extends up to ¼ mile (406 meters), in some places, from the nest site. Activities that have potential to disturb nesting eagles are restricted in this area during the period of 1 January thru 30 June. Human entry is prohibited unless performed in connection with necessary eagle research and management by qualified personnel.

a. Military training activities are not authorized within the established buffer zone during the period of 1 January thru 30 June. The restriction is to include all foot and vehicle traffic, CS gas, smoke, pyrotechnics and demolition simulators.

b. All recreational activities within the buffer zone are prohibited. This does not restrict persons from floating on or fishing in the Big Piney River from a boat.

c. Access trails will be closed to restrict vehicle access from 1 January thru 30 June.

N-3. Riparian (River and Streams) Zone, Water Quality and Biological Concerns. Riparian zones are the most biologically diverse areas on the installation, providing habitat for many animals and plants. Most of the known wetlands on Fort Leonard Wood are located along major streams and should not be disturbed or encroached upon. This zone also provides important habitat for the Bald Eagle and two federally endangered bats, and one federally endangered mussel. Management and training activities are designed to maintain water quality and minimize development and soil disturbance on floodplains:

a. Any digging, filling, draining, or alterations of wetlands is prohibited without appropriate state and federal permits. Wetland resources are located primarily in the stream zone. However, uplands wetlands (i.e., wet sinkholes, and seeps) do exist and should not be altered in any way.

b. Bivouac activity is permitted on case by case basis with DPW Natural Resource Branch approval and coordination with Range Operations.

c. Terephthalic Acid (TPA) smoke pots and grenades may not be deployed within 120 meters of the Big Piney River or Roubidoux Creek from sunset to sunrise during the period 15 March to 31 October.

d. Streams should be crossed only at designated ford sites. All travel by wheeled/tracked vehicles in streambeds is prohibited.

e. Tracked and wheeled vehicles use will be on gravel roads only. No tracked/wheeled vehicle use on unimproved roads, firebreaks or cross terrain maneuvers.

f. Use POL products and other hazardous materials with care and report spills immediately.

g. Minimize development activity impacts on floodplains in order to control erosion and sediment displacement.

h. Unless specified elsewhere in this regulation, digging activities, which cause soil disturbance or vegetation removal must be approved by DPW Natural Resources Branch.

N-4. Landfills (Active and Inactive). Training activities in these areas, and especially activities involving digging, must be coordinated with DPW Environmental Branch (596-0882).

N-5. Training Area Guideline (TAG) Site. Training activities in these areas that cause soil disturbance or vegetation removal are prohibited without prior coordination with DPW Natural Resources Branch.

N-6. Former U.S Forest Service Lands transferred to FLW in 2001. Authorized training activities included designated bivouacs, foot land navigation, road marches and vehicle convoys on improved roads (gravel roads only). Activities not authorized in this area include:

a. Use of pyrotechnics or gas.

b. Off-road vehicle travel on unimproved roads, firebreaks or vehicle cross terrain maneuvers.

c. Bivouac activities outside of designated TAs (Designated TAs are 240S, 240N, 241, 242A, 242B, 249A and 249B)

N-7. Any earth disturbing activities.

Appendix O

TORNADO PROCEDURE GUIDELINES ON LIVE FIRE RANGES

Tornado Watch – *“Tornado Watch” means that conditions are favorable for tornadoes to develop. In this case, be alert to weather advisories posted or communicated by Range Operations and pay attention to any changes in the weather.*

Tornado Warning – *“Tornado Warning” means that a tornado has actually been sighted by radar or person and immediate action should be taken to prevent loss of life.*

The following procedures are to be taken during a **tornado warning**. During tornado season, training units should identify (by name) which cadre members will be responsible for each emergency action (i.e. accountability, RSO, Tower NCO) and brief all Soldiers on actions to be taken in the case of severe weather.

In the event of a **severe weather warning**, Range Operations will issue an alert to all ranges via FM communications and/or by the installation loud speaker system. The warning will consist of a long, continuous audible tone followed by this alert message: “May I have your attention. This is a severe weather warning. Take required actions and tune into local radio for the latest update.” This message will be repeated three times. Upon receipt of this notification, the following actions **MUST** occur:

1. **IF TIME PERMITS** deliberate and centralized clearing procedures:

a. The tower NCO immediately issues the following commands:

___ **“Attention on the range, attention on the range; cease fire, cease fire, cease fire”**

___ **“All firers, keeping the barrel of your weapon pointed down range, place your weapon on safe, remove the magazine, lock your bolt to the rear, and conduct a visual inspection of your chamber to ensure it is clear of all brass and ammunition”**

___ **“Move to the base of the tower in an orderly fashion to be cleared off the range by the range safety”**

___ **“Once the safety has cleared your weapon, you and your firing coach will secure your individual (weapon) and range walk directly to the tornado shelters and prepare for accountability”**

___ **“All Soldiers NOT currently on the firing line need to safely secure your weapons and move directly to the tornado shelters and prepare for accountability”**

b. Unit and range cadre supervise all Soldiers exiting the firing line and range facilities ensuring that movement is occurring in an organized and controlled manner.

c. The RSO and OIC will be located directly behind the tower directing Soldiers coming off of the firing line or out of the windscreen and classroom to the tornado shelters.

d. Dependent on the range, an appropriate number of NCOs from the training unit will be located at the tornado shelter site ensuring that no more than **14 Soldiers** are in each shelter with their **weapons cleared and muzzles pointing skyward**. They will then secure the doors

and ensure they have an accurate accounting of personnel and equipment within each shelter.
e. NCOs from the training unit will check the latrines and classrooms to ensure no one is occupying them. If occupied, they will direct the Soldiers to move to the tornado shelters.

f. (*Time Permitting*) Once the firing line is clear, the tower operator will announce “**the firing line is now clear.**” The tower operator and remaining safeties will then swiftly move into the tornado shelters and assist with getting and maintaining accountability of personnel and equipment.

g. Range cadre will secure hand held radios and are responsible for maintaining constant communications with Range Operations.

h. The RSO and OIC will enter a tornado shelter once they have verified that no Soldiers remain in the windscreen, classroom, latrine, or in any other range facility.

i. The training unit will exit the shelters ONLY upon receipt of an “**all clear**” message via loud speaker system or FM communications from Range Operations. The loud speaker message will consist of seven cycles of Westminster chimes followed by an audible alert repeated three times: “*May I have your attention please. All clear, the emergency has ended.*” Units will then conduct 100% hands-on accountability of all personnel and equipment then submit a SITREP to Range Operations as soon as possible.

2. If the emergency situation **DOES NOT PERMIT** weapons to be centrally cleared **BUT** there is time to occupy appropriate shelter:

a. The tower NCO immediately issues the following commands:

___ “**Attention on the range, attention on the range; cease fire, cease fire, cease fire**”

___ “**All firers, keeping the barrel of your weapon pointed down range, place your weapon on safe, remove the magazine, lock your bolt to the rear, and conduct a visual inspection of your chamber to ensure it is clear of all brass and ammunition**”

___ “**Once you and your firing coach have visually inspected the chamber of your weapons, range walk directly to the tornado shelters with your individual (weapon) and prepare for accountability**”

___ “**All Soldiers NOT currently on the firing line need to safely secure your weapons and move directly to the tornado shelters and prepare for accountability**”

b. Unit and range cadre supervise all Soldiers exiting the firing line and range facilities ensuring that movement is occurring in an organized and controlled manner.

c. NCOs from the training unit will locate themselves at the tornado shelters to ensure that no more than **14 Soldiers** are in each shelter with their **weapons cleared and muzzles pointing skyward**. They will then secure the doors and ensure they have an accurate accounting of personnel and equipment within each shelter.

d. NCOs from the training unit will check the latrines and classroom to ensure no one is occupying them. If occupied, they will direct Soldiers to move to the tornado shelters.

e. Once the firing line is clear, the tower operator will announce **“the firing line is now clear.”** The tower operator and remaining safeties will then swiftly move into the tornado shelters and assist with getting and maintaining accountability of personnel and equipment.

f. Range cadre will secure hand held radios and are responsible for maintaining constant communications with Range Operations.

g. The RSO and OIC will enter a tornado shelter once they have verified that no Soldiers remain in the windscreen, classroom, latrine, or in any other range facility.

h. The training unit will exit the shelters ONLY upon receipt of an **“all clear”** message via load speaker system or FM communications from Range Operations. The load speaker message will consist of seven cycles of Westminster chimes followed by an audible alert repeated three times: *“May I have your attention please. All clear, the emergency has ended.”* Units will then conduct 100% hands-on accountability of all personnel and equipment then submit a SITREP to Range Operations as soon as possible.

3. If the emergency situation **DOES NOT PERMIT** timely occupation of tornado shelters due to an immediate sighting or other rapid emergency situation:

a. The tower NCO immediately issues the following commands:

___ **“Attention on the range, attention on the range; cease fire, cease fire, cease fire”**

___ **“All Soldiers – take cover, take cover, take cover!”**

b. Soldiers **INSIDE** of range buildings or facilities will immediately execute the following:

(1) Move to an interior corridor (if available) and stay away from all windows, doors, large glassed-areas, and large open areas with a long roof span.

(2) Crouch down along a wall and protect your head with your hands from possible debris, remaining in the sheltered area until given the **“all clear”** by Range Operations and/or your unit chain of command.

c. Soldiers **OUTSIDE** of range buildings or facilities **BUT NOT** occupying the firing line will immediately execute the following:

(1) Seek shelter in the nearest building (if available) following the same procedures for b(1) and b(2) above.

(2) If there is no shelter available, place all weapons and equipment on the ground and find the nearest ditch or other earthen depression that will provide adequate cover; and

(a) Never attempt to outrun a tornado;

(b) DO NOT try to move until the **“all clear”** has been given;

(c) Once an **“all clear”** has been given, return to your previous location to re-establish your chain of command in order to allow for accountability of personnel and equipment.

d. Soldiers **OCCUPYING THE FIRING LINE** will immediately execute the following:

(1) Rapidly verify that their weapons are clear, placing them and other equipment on the ground while seeking shelter in the nearest fortified fighting position.

(2) If fighting positions are occupied or otherwise unavailable, find the nearest ditch or other earthen depression that will provide adequate cover; and (a) Never attempt to outrun a tornado;

(b) DO NOT try to move until the **“all clear”** has been given;

(c) Once an **“all clear”** has been given, return to your previous location to re-establish your chain of command in order to allow for accountability of personnel and equipment.

4. Once all threats have passed, the unit commander along with his/her cadre will assess the situation and take appropriate action to treat Soldiers first (i.e. re-establish accountability of personnel, administer first aid as required, call for MEDEVAC, etc...) then ensure accountability of equipment.

5. Simultaneously, range cadre will establish communications with Range Operations and assist the training unit commander with reporting any incidents that will require immediate assistance from Range Operations or installation level emergency services.

Appendix P
STANDING OPERATING PROCEDURES (SOP) FOR SMALL ARMS RANGE SAFETY AREA (SARSA)

1. Purpose: To establish a detailed standing operating procedure for Range Operations and aerial observers to follow to ensure safety compliance for aircraft flying lower than 3,000 feet AGL to include:

a. Formal/documented training requirements for observers; immediate actions taken by the observer upon seeing an aircraft not in compliance with the altitude rule; notification list/ telephone numbers for emergencies or issues or issues concerning the SARSA.

b. Procedures for all clear and to resume firing.

2. Scope: This standing operating procedure applies to units utilizing ranges on Fort Leonard Wood range complex when the SARSA is activated.

3. SARSA Weather Criteria:

SARSA will only be activated when weather minimums meet the following criteria:

a. Ceiling greater than or equal to 3,500 feet Above Ground Level (AGL) 4,700 feet Mean Sea Level (MSL)

b. Visibility greater than or equal to 3 statute miles

4. Observers Training requirements:

a. SARSA observers will be initially briefed on the duties and responsibilities during the range safety officer briefing.

b. Fort Leonard Wood Regulation 210-14 and Range SOP's will be updated to include the SARSA observer responsibilities (paragraph 5) and notification list (paragraph 7).

c. Observers will be trained at a minimum once a quarter by aircraft flyover to give observers spatial reference of aircraft incursion.

d. A SARSA training video will be produced from several ranges to be shown during range safety officer briefing. The video will be used to provide initial observer training when aircraft is not available.

5. Observers Duties and Responsibilities:

a. Observers will:

(1) Upon notification from Range Operations that the SARSA is activated the observer will post at a place to afford maximum visibility of the airspace within the boundary of the range.

(2) Observers will become familiar with SARSA SOP and particular range SOP's prior to assuming duties.

(3) Observers will call for a cease fire on the range for any aircraft that drops below 3,000' AGL.

(4) Observers will contact Range Operations and notify them of the aircraft incursion.

6. All Clear Procedures:

- a. Observer will report to Range Operations that aircraft is clear of range.
- b. Range Operations will notify ranges to commence normal operations.

7. Responsibilities and Procedures:

a. Bloodland Range Operations will:

(1) Apprise Forney ATCT of planned use of SARSA at least fifteen (15) minutes in advance of planned usage.

(2) Provide one trained aerial observer per operating range.

(3) Continue to schedule R4501 airspace (IAW the FAA R4501 LOA and Letter of Procedure).

(4) Request R4501B&F airspace activation (IAW the FAA R4501 LOA and Letter of Procedure) whenever the WRAFF weather deteriorates below a ceiling 3,500 feet AGL/ 4,700 feet MSL or visibility less than 3 statute miles.

(5) Coordinate with WRAFF for aircraft to support observer training once a quarter.

(6) Range Operations will notify WRAFF of aircraft incursion.

b. WRAFF ATCT will:

(1) Forney Tower will advise local aircraft that have established communications with WRAFF of the status of range activity within the SARSA.

(2) Time permitting, Forney ATCT will notify Bloodland Range Operations as soon as possible whenever weather criteria/ minima reported at WRAFF falls below a ceiling of 3,500 feet AGL /4,700 feet MSL or a visibility less than 3 statute miles.

(3) Provide aircraft for observer training.

8. Notification List:

- a. Bloodland Range Operations (573) 596-2525
- b. Bloodland Range Operations Supervisor (573) 596-6147
- c. Forney ATCT (573) 596-0065/7193
- d. Forney ATCT Chief (573) 596-4995

9. References:

- a. DA PAM 385-63
- b. DAR memorandum of concurrence dated 23 Jan 08

Appendix Q
ARMY AIRCRAFT
AVIATION ROUTE STRUCTURE

1. Helicopter routes.

a. Forney Tower, Range Operations, and using pilot/unit agree to utilize a commonly named aviation route structure as defined in Appendix T & U for purposes of controlling helicopters and facilitate air movement to, from, and around the periphery of the FLW reservation.

b. Specific turn points along the routes will be referred to as “Checkpoints” (CPs) and numbered sequentially around the periphery of the reservation. Specific coordinates of the CPs are listed in Appendix S.

c. The following naming convention will be utilized:

East Route – Defined as CP 2 through CP 9. This route generally follows the East boundary of the FLW reservation to include portions of the Big Piney River.

West Route – Defined as CP 9 through CP 17. This route generally follows the South and West boundaries of the FLW reservation.

South Route – Defined as CP 9 to Forney Army Airfield along highway FLW 1. Aircraft utilizing the South Route will remain over highway FLW 1 slightly to the West edge. PC's will use caution not to encroach on active ranges East or West of FLW 1.

NOTES:

East Route was formerly defined as Forney Army Airfield to CP 5. To utilize this track, aircraft will request to depart Forney Army Airfield direct to CP 5.

The route naming convention will be utilized regardless of the direction of travel. As an example, aircraft may utilize the West Route clockwise or counterclockwise.

d. The following altitudes will apply:

East Route – 500 feet AGL and above.
West Route – 200 feet AGL and below.
South Route – 200 feet AGL to 1500 feet MSL.

e. Pilot/Unit aircraft will notify both Forney Tower (when operational) and Range Operations prior to utilizing the route structure. Aircraft will provide a starting point, ending point, and a direction of travel as appropriate (i.e., clockwise, counterclockwise, North or South).

f. All aircraft operating on the same segment will travel in the same direction. Forney Tower and/or Range Operations will not allow aircraft traffic to operate on the same route in opposite directions.

g. Multi-aircraft operations are allowed on the route structure.

h. A maximum capacity of 2 aircraft or 2 flights of multi-aircraft operations not to exceed 6 total aircraft will be adhered to for each segment of the route structure. Each group of aircraft

will maintain a minimum of 2 checkpoints between each other. Multiple aircraft on flights within the route structure must maintain inter-aircraft communications at all times while flying the route. Aircrews should coordinate route operations during the planning and include in risk assessment. Radio frequency 38.050FM and 242.4UHF will be used between aircraft on the route structure.

2. Maneuver areas.

a. Pilot/Unit aircraft will contact Range Operations on the appropriate radio frequency and obtain approval before proceeding to any of the specific maneuver areas. It is understood that Range Operations may have various operational reasons for denying aviation operation request into the maneuver areas.

b. Landings and touchdowns at any location within a training area or maneuver area not designated as a FAASF Landing Zone (LZ) will be coordinated with Range Operations prior to takeoff. Emergencies may dictate exceptions to this rule. Aircrews will advise Range Operations and/or Forney Tower of all precautionary or forced landing as soon as possible.

c. Range Operations must approve use of each LZ prior to use. Exceptions are the FAASF LZ's.

d. Helicopter Training Area (HTA); Airspace defined by the northwest quadrant of the FLW reservation. Specific boundaries are included in Appendix T.

(1) Pilot/Unit may utilize the HTA for training purposes to include terrain flight.

(2) Aircraft will request use from Forney Tower when operating within the HTA's horizontal limits of Class Delta airspace during periods of tower operations and from Range Operations at all times when within the HTA.

(3) Aircraft utilizing the HTA will adhere to all special use airspace restrictions and air traffic control (ATC) instructions.

(4) Traffic density will be limited to 1 aircraft or 1 flight in case of multi-aircraft operations. This limitation does not affect the traffic density of the route structure.

(5) Entry of the HTA will be at one of the defined CP14, CP15, CP16, and CP17 of the route structure of Forney Army Airfield.

(6) To avoid traffic conflict, particularly in the area beneath the 14/32 runway centerline, aircraft departing the HTA from terrain flight modes shall contact Forney Tower and/or provide clearly announced CTAF intentions prior to transition to traffic altitude and proceeding on a course inbound to Forney Army Airfield Cantonment Area.

(7) Flight altitudes will remain at 200 feet AGL and below.

(8) Aircraft within the HTA will attempt to remain clear of building and personnel.

(9) Aircraft utilizing the HTA will provide situation reports every 30 minutes as stated in paragraph 5-2 d(2).

NOTE:

Flight operations inside or in the vicinity of Cannon Range will be coordinated telephonically prior to takeoff. Aircraft will contact Cannon Tower via the appropriate radio frequency prior to arrival into Cannon Range. If Cannon Tower is not operational this area will be treated as a maneuver area and PC's shall comply with HTA request procedures as stated in paragraph a, and paragraph f (2) above.

g. If necessary for training mission operations, aircraft wishing to operate "lights out" or "IR lights" need to coordinate with Forney Airfield. This will be coordinated and approved on a case-by-case basis. In all other situations, aircraft operating at night will operate with lights IAW AR 95-1.

h. Flight over the FLW cantonment area will be avoided whenever possible for the purpose of noise abatement.

i. When cleared by ATC, pilot/unit aircraft will maintain a minimum of 500 feet AGL over the cantonment area except for the purpose of takeoffs and landings.

j. Specific "No Fly" areas are listed in Appendix T. Pilot/Unit will ensure those areas are not violated.

k. Pilot/Unit aircraft will report to Range Operations any sightings of personnel in the FAASF LZ's.

Appendix R
ARMY AIRCRAFT
NIGHT VISION DEVICE (NVD) FLIGHT OPERATIONS

1. Night Vision Device (NVD) Operations.

a. All aircraft conducting terrain flight will have a current navigational map of the Fort Leonard Wood area depicting hazards (i.e. towers, wires, avoidance areas, etc).

b. In addition to criteria for Army aircraft using NVGs, the following requirements all aircraft using NVDs:

(1) The operational infrared (IR)-filtered search /landing light requirement means the light must be able to extend and retract; the light is not required to be on continuously while training is being conducted.

(2) The Pilot-in-Command (PC) will determine when the light is required, unless light use is specified in the unit SOP or is included in the mission briefing.

(3) Should the light fail while the mission is in progress, the PC will evaluate the situation and either continue or abort the mission.

(4) Pilots should not hesitate to use the landing light or search light, whether filtered or unfiltered, if light use is considered essential for flight safety.

c. Aircraft using night vision systems/devices will add the word "Ghost" to their call sign.

d. NVD training areas.

(1) Forney Traffic Pattern. Helicopter traffic pattern altitude is 1,700 feet MSL. Traffic patterns will be flown to avoid housing areas. No more than three NVD aircraft will operate in the traffic pattern at any one time. When Forney Tower is opened mixing of aided and unaided traffic is not authorized. Traffic pattern during NVD operations will be as directed by Forney Tower. If Forney Tower is closed the aided military aircraft will operate in a south traffic pattern and the unaided military aircraft will operate in a north traffic pattern. Arriving and departing IFR aircraft and nonparticipating/unaided VFR aircraft have priority over NVD aircraft.

(2) Terrain flight training area can be used for NVD operations/training when scheduled and approved by Airfield Operations.

(3) Range Impact Area can be used for NVD operations and training when scheduled and approved by Range Operations.

e. The terrain flight training area is limited to one aviation unit/exercise at any given time. Exceptions must be coordinated in advance with Airfield Operations and the unit operating in that specific training area.

f. All aircraft will monitor Forney Tower/Advisory and Range Operations.

g. Disorientation Procedures. Disoriented aircrews should immediately notify Forney Tower/Advisory of their situation and:

(1) East of FLW1 fly heading 090 and Climb to 2,500 feet MSL for three minutes, then turn north until orientating off of I-44. If still unable to reorient contact Kansas City Center on 128.35/284.67 to request radar vectors..

(2) West of FLW1 fly heading 270 and Climb to 2,500 feet MSL for three minutes, then turn north until orientating off of I-44. If unable to reorient, contact Kansas City Center on 128.35/284.67 to request radar vectors.

h. Weather Minima.

NVD flights conducted within the Fort Leonard Wood training areas will adhere to the weather minima requirements established in AR 95-1 and further restricted to a weather minima of a ceiling of 1000 feet AGL, 3 Statute Miles visibility, and Basic Cloud Clearance.

2. Aircraft External Lighting.

a. Day lighting requirements will be per AR 95-1 or appropriate service regulation, except for aircraft in formation. For formation flights only the trail aircraft is required to have on anti-collision lights in operation.

b. Night/NVD.

(1) The following external lighting configurations are mandatory for operations at Forney Airfield.

(a) Unfiltered landing lights will be on during all night/NVD run-ups and shutdowns. It is understood that some aircraft do not have unfiltered landing lights, and others can only comply after engine start.

(b) Unfiltered landing lights will be on during all night/NVD initial approaches to Forney Airfield; only the lead aircraft is required to have its unfiltered land light illuminated. Upon pilot request and when other traffic is not adversely affected, Forney Tower may permit traffic pattern or additional approaches to be flown with the landing light off.

(c) After night/NVD formations have landed, aircraft will taxi individually to parking or refueling with landing lights on, position lights on steady bright and anti-collision lights on.

(d) Upon pilot request, and when other traffic is not adversely affected, Forney Tower may turn off airfield lights for training purposes. Airfield lighting will be turned back on prior to a nonparticipating/unaided aircraft reaching 10 nautical miles from the airport.

(1) When lighting is turned off all landings will be at the pilot's own risk.

(2) When notified of non NVD/unaided aircraft reaching 10 nautical miles from the airport or a departing aircraft starts taxing, Forney Tower will announce on the Local Control frequencies (125.4/268.7) "Lights Coming Up, Lights Coming Up" and then turn on the airfield lighting to the appropriate setting.

(3) Totally "blacked out" operations, to include operations with IR position lights only, may be conducted within R-4501 with approval of the AT&A Officer or designated representative and Range Operations. A local NOTAM will be issued for the operation.

(4) The following external lighting configurations are mandatory for all single ship night/NVD flights within Forney Class D airspace and on the Fort Leonard Wood reservation:

(a) Position lights will be on steady bright. Lateral position lights will not be taped, and the tail light will be neither taped nor turned off.

(b) IAW AR 95-1, anti-collision lights will be on when engines are operating except when conditions may induce vertigo or other hazard to safety. The UH-60 and CH-47 aircraft may turn off the lower anti-collision light during NVD flights.

(5) The following external lighting configurations are mandatory for multi-ship night/NVD flights within Forney Class D airspace and on the reservation:

(a) Trail aircraft position lights will be on steady bright; position lights of other aircraft will be on steady dim for night formation flights.

(b) For approved "blacked out" operations conducted within R4501, if appropriately modified, aircraft may selectively turn off the taillight. Trail aircraft's anti-collision light and tail position light **will not** be turned off.

(c) Only the trail aircraft is required to have the anti-collision light on.

(d) During multi-ship operations, night or NVD/NVS, pilots will turn on aircraft lighting, as appropriate, to warn approaching aircraft of the position of the formation.

(6) The unfiltered landing light will be on during night/NVD flights for single-ship and for the lead aircraft in a formation during arrival and departure to Forney Airfield as outlined below:

(a) Traffic inbound to Forney Army Airfield will turn on the unfiltered landing light at least 1 kilometer before the appropriate reporting point.

(b) Traffic departing Forney Army Airfield for the reservation will have the unfiltered landing light on until at least 1 kilometer beyond the initial outbound checkpoint.

(Digitally available through ITAM or copy the embedded graphic below)



Appendix T HELICOPTER TRAINING AREAS

Helicopter Training Area		
Defined as:		
Boundary	Notes	
15S WB 69642 83679	(1) MOARNG may utilize the HTA for training purposes to include terrain flight.	
15S WB 75016 83554	(2) Aircraft will request use from Forney Tower when operating within the HTA's horizontal limits of Class Delta airspace during periods of tower operations and from Range Control at all times when within the HTA.	
15S WB 74555 79374	(3) Aircraft utilizing the HTA will adhere to all special use airspace restrictions and ATC instructions.	
15S WB 72990 76326	(4) Traffic density will be limited to 1 aircraft or 1 flight in case of multi-aircraft operations. This limitation does not affect the traffic density of the route structure.	
15S WB 72753 70203	(5) Entry the HTA will be at one of the defined CP14, CP15, CP16, and CP17 of the route structure or Forney Army Airfield.	
15S WB 66361 70037	(6) To avoid traffic conflict, particularly in the area beneath the 14/32 runway centerline, aircraft departing the HTA from terrain flight modes shall contact Forney Tower and/or provide clearly announced CTAF intentions prior to transition to traffic altitude and proceeding on a course inbound to Forney Army Airfield Cantonment Area.	
15S WB 67453 73982	(7) Flight altitudes will remain at 200 feet AGL and below.	
15S WB 68662 75615	(8) Aircraft within the HTA will attempt to remain clear of building and personnel.	
15S WB 69085 75600	(9) Aircraft utilizing the HTA will provide situation reports every 30 minutes as stated in paragraph 4b.	
15S WB 69116 77217		
15S WB 69916 77246		
15S WB 69917 77994		
15S WB 70355 78084		
15S WB 70358 81268		
15S WB 69656 81299		
15S WB 69642 83679		
No Fly Areas / Noise Abatement		
Type	Description	Location
No Fly	Ammunition Supply Point	15S WB 78489 75021
Noise Abatement	Resident w/in vicinity of CP 13	15S WB 65357 66691
Noise Abatement	Cantonment Area	Northeast of RWY 14/32

Appendix U AVIATION ROUTE STRUCTURE

FLW Aviation Route Structure					
	Latitude	Longitude	Name	Description	Altitude
CP 2	N 37 47.85	W 092 07.39	East Route	CP 2 to CP 9	500' AGL and above
CP 3	N 37 47.56	W 092 05.80	West Route	CP 9 to CP 17	200' AGL and below
CP 4	N 37 46.45	W 092 05.90	South Route	CP 9 to Forney Army Airfield	200' AGL to 1500' MSL
CP 5	N 37 44.96	W 092 02.14			
CP 6	N 37 43.00	W 092 02.68	*South Route - Aircraft utilizing the South Route will remain over highway FLW 1 slightly to the West edge. PC's will use caution not to encroach on active ranges East or West of FLW 1.		
CP 7	N 37 39.83	W 092 03.12			
CP 8	N 37 38.49	W 092 05.86			
CP 9	N 37 37.96	W 092 08.79			
CP 10	N 37 37.31	W 092 10.70	*East Route was formerly defined as Forney Army Airfield to CP 5. To utilize this track, aircraft will request to depart Forney Army Airfield direct to CP 5.		
CP 11	N 37 36.54	W 092 10.61			
CP 12	N 37 36.28	W 092 15.73			
CP 13	N 37 38.34	W 092 15.20			
CP 14	N 37 41.22	W 092 14.50			
CP 15	N 37 43.80	W 092 12.85			
CP 16	N 37 46.65	W 092 11.92			
CP 17	N 37 47.70	W 092 09.88			

Appendix V

CIVILIANS ON RANGES AND TRAINING AREAS

1. These procedures are not designed to restrict civilian visitors from observing their Army nor should it be viewed as a restriction on demonstrations, static displays, or other related activities. The intent is to ensure that civilian visits are conducted with the maximum regard for the safety of all concerned by limiting civilian operation of the types of exposure in which civilian participation may interfere with the safe operation by the military. The Army believes it is important to maintain a strong communication link with the American public to demonstrate Army values and capabilities and to receive their valuable input. FLW Public Affairs Office will provide guidance regarding compliance in establishing community relations programs.

2. Commanders at all levels will:

- a. Ensure compliance with FLW policies on civilian visitors to ranges and training areas.
- b. Be personally involved with this program to ensure proper procedures for obtaining clearance are followed.
- c. Not allow civilians and or family members to participate in IET/IMT or unit training events. Observation of events can be coordinated IAW paragraph f of this appendix; however they cannot be active participants in training.

3. When the installation training complex is requested for use by nonmilitary organizations such as schools; county, municipal, state, or federal agencies; organized clubs (including rod and gun clubs); or civic associations, the following requirements apply.

- a. The organization or agency will comply with requirements and procedures established by DA Pam 385-63/MCO 3570.1B, and local range regulations and SOPs.

- b. Request for use will be coordinated via staffing paper with the installation Range Operations, MSCoE Safety Office, and the Staff Judge Advocate (SJA) office, and submitted to the Garrison Commander for approval. Allow a minimum of 30 days for staffing and approval.

- c. Request will identify if non-DOD associated minors will be involved in firearms activities. If so, the activity must be an approved course of marksmanship training, unless otherwise approved by the Garrison commander.

- d. A license must be obtained between the installation and the nonmilitary organization, detailing all rights and responsibilities of each party, liabilities, procedures, and regulatory and procedural requirements. This agreement will be incorporated into the report of availability as required by AR 405-80.

- e. The nonmilitary organization designates an OIC and RSO. Personnel designated as OICs and RSOs will complete a pistol and rifle course approved by the National Rifle Association (NRA), or equivalent (for example, the U.S. Pistol Shooters Association). The Garrison Commander, based on input from the Range Operations Officer, MSCoE Safety Officer, SJA, and other staff agencies, as appropriate, determine the equivalency.

- f. The installation Range Operations Officer will ensure designated OIC and RSO are briefed on their duties and responsibilities.

4. Military family members engaging in authorized marksmanship training or participating in activities involving weapons firing, such as organizational or family days, will comply with this regulation, installation range regulation, and SOPs. Request for these activities will specify if minors will be involved.
5. Civilian personnel, such as military family members and local populace, must receive authorization from the installation Range Operations officer to enter the training complex to participate in or observe capabilities exercises, fire power demonstrations, training courses, competitions, or other types of firing. Such personnel will remain in designated safe areas as determined by the installation Range Operations Officer.
6. Inspection team members, or other official observers required on the firing line, firing position, or firing area will position themselves in safe areas as determined by the installation Range Operations Officer. These personnel must wear appropriate safety equipment, as specified by the local range regulations and the installation Range Operations Officer.
7. The Secretary of Defense has directed in a memorandum dated February 22, 2001, a DOD-wide moratorium on permitting civilian visitors to operate military vessels, vehicles, and crew-served weapons systems (to include equipment under the control of the Army National Guard and Air National Guard) when such operation could cause, or reasonably be perceived as causing, an increased safety risk. This moratorium is effective regardless of how closely military personnel supervise civilian visitors. In addition to the actual operation of military vessels, vehicles, and crew-served weapon systems, civilian visitor participation in the following activities is prohibited:
 - a. Throwing live-hand grenades.
 - b. Using diversionary devices (for example, flash bangs and/or pyrotechnics).
 - c. Participating in live-firing in a shooting house (for example, close quarters battle).
 - d. Participating in live-firing on maneuver ranges while units are maneuvering.
 - e. Fast rope/rappelling from helicopters/special purpose insertion extraction rigging.
 - f. Parachuting.
 - g. Other activities, as determined by a commander that could cause, or reasonably be perceived as causing, increased safety risk.
8. Civilians, to include family members and DOD civilians, must be approval from the installation Range Operations Officer to fire weapons within the installation training complex.
9. The DOD, US Government, and other nations' delegations arranged through Executive Services are exempt from this staffing requirements.

WAIVER OF LIABILITY *and* COVENANT NOT TO SUE

ACTIVITY:

ORGANIZATION:

I understand the activities I will be participating in include participating in the _____ I understand that the activity I am to be involved in has some risk of physical injury and inherent danger. The risk includes death or serious injury from falling off of the _____ Additional risks include, but are not limited to, broken bones, cuts/scrapes, pulled/strained muscles, head injuries, dehydration, or other injuries. As a condition of participating in the activities, I am willing to assume the inherent risk and dangers of the activities, both known and unknown. I agree that I will not participate in any event for which I am physically unable to complete, or do not want to participate in. I will openly disclose any unusual mental or physical conditions to the appropriate program instructors prior to my actual attendance or participation in the programs listed. I understand that I may not be permitted to participate in any particular event or program or I may even be excluded from all events or programs if the instructors determine that my participation would cause an unreasonable or unacceptable risk of harm to myself or others. I accept their discretion.

WAIVER OF LIABILITY

In consideration for being allowed to participate in the activity, I hereby release and hold harmless the UNITED STATES OF AMERICA, its agencies, and its covered activities from any liabilities or claims arising from my participation in the above activity. I will abide by the safety rules as set forth in the safety briefings provided and the instructions of the officers in charge.

COVENANT NOT TO SUE

Further, I agree that I will not ever prosecute or in any way aid in the prosecution of any demand, claim, or suit against the UNITED STATES OF AMERICA, its officers and agencies, and its covered activities, for any loss, damage, or injury to my person or property that may occur from any cause whatsoever as a result of taking part in the above activity.

MEDICAL CARE CONSENT

I do hereby consent in advance to whatever medical procedure or treatment is considered necessary in the best judgment of the attending United States Army medical personnel. In consideration for receipt of said medical care, I agree to hold the United States and all of its personnel harmless for any injuries which occur as a result of the presence or activities of said personnel.

I, _____, understand the risks inherent in participating in the aforementioned activities and want to participate in the activities.

PARTICIPANT'S NAME: _____

PARTICIPANT'S SIGNATURE: _____

PARENT OR LEGAL GUARDIAN'S SIGNATURE (if participant is a Minor): _____

Date: _____

Incl 1

Appendix W
NOISE COMPLAINT FORM

Fort Leonard Wood
Operational Noise Management Program
Complaint Investigation Report Form

Complainant: _____ Date: _____

Address: _____

Phone (home): _____ (work): _____

Reason for Complaint: _____

History of Problem: _____

Damage Claimed: Yes / No _____

Is this the first time you have been annoyed by this noise: Yes No _____

Query/Coordination

Facility: _____ Unit: _____

Weather Conditions: _____

Results of Query: _____

Action to Correct or Alleviate Noise Problem: _____

Additional Information: _____

Response to Complainant: _____

Complainant Satisfied: (Yes or No) _____

Follow Up: _____

Received By: _____ Time: _____

Remarks: _____

Appendix X

ENVIRONMENTAL COMPLIANCE

1. Purpose. The purpose of this appendix is to aid leaders in the planning, execution, and reporting of training. This involves the following activities covered by the FLW Air Permit:

- Fog Oil
- Smoke/CS Grenades
- FOX Vehicle/Biological Integrated Detection System (BIDS)
- Asphalt Production
- Rock Crushing
- Unpaved Route Training

2. Applicability. These procedures apply to all MP and CM unit training, and to asphalt and quarry operations, conducted on FLW. Contact the DPW, Environmental, Energy, and Natural Resources (EENR), for more information.

Key Terms.

a. Meteorological (MET) Data Event- A scheduled event that requires favorable MET data from Range Operations to execute training in compliance with the FLW air permit.

b. Non-MET Data (MET-D) Event- A “scheduled” training event that does not require meteorological data to execute and is not reportable under the FLW permit.

c. Wet Code- An initiation code given by Range Operations indicating approval to begin a training event.

4. Operational Checks.

a. Pre-operations checks:

(1) Ensure training area requests and overlays are submitted to Range Operations.

(2) Confirm training plan at the weekly Range Operations scheduling meeting.

(a) Confirm routes, number of smoke/CS grenades, number of smoke pots, number of vehicles, amount of simulant use, and amount of fog oil as appropriate to be used during the training event.

(b) Confirm the time and location of the training event and route authorization.

(c) Confirm alternate training activities/sites in the event that training requiring MET data cannot be conducted.

b. During-operations checks:

(1) Contact Range Operations upon occupation of range/training area and receive an “occupation code.” The code is permission to occupy only, not to begin training.

(2) Maintain continual communications with Range Operations during all training events.

c. Range/training area procedures:

(1) Give the Range Operations Firing Desk Technician the names and card numbers of OIC and RSO.

(2) Inform Range Operations this is a MET Data Event. Confirm the usage of smoke/CS grenades, smoke pots, stimulants/fog oil for training. A pyrotechnics window is required for smoke/CS grenades and smoke pots.

(3) Call Range Operations and request a "wet code." Unit may have to wait 15 minutes to ensure satisfactory MET data.

(a) After 15 minutes, units will receive MET data conditions from Range Operations.

(b) If the data is a GO, the unit will be given a "wet code" to begin training.

(6) If the data is a NO-GO, the unit cannot conduct training that requires monitoring of MET data. Range Operations will advise the unit to call back in 15 minutes. The unit may decide to conduct their alternate training activity that does not involve MET data.

(d) If the MET data goes out of tolerance, Range Operations will direct the unit to stop all applicable training until further notice.

d. Unpaved route training procedures:

(1) Give the Range Operations Firing Desk Technician the six-line communication report IAW paragraph 3-18, this regulation.

(2) Inform Range Operations this is a MET Data Event. Confirm the usage of routes and smoke/CS grenades for training. A pyrotechnics window is required.

(3) Call Range Operations and request a "wet" code.

(a) After 15 minutes, units will receive MET data conditions from Range Operations.

(b) If the data is a GO, the unit will receive a "wet code" to begin training.

(c) If the data is a NO-GO, the unit cannot conduct training that requires monitoring of MET data. Range Operations will advise the unit to call back in 15 minutes. Alternate training not dependent on MET Data may be conducted.

(d) If the MET data goes out of tolerance, Range Operations will direct the unit to stop all applicable training until further notice.

e. Post Operations Checks. Upon completion of training, the unit will notify Range Operations of:

- The number of personnel trained
- The number of smoke/CS grenades and/or smoke pots used
- The amount of fog oil used

- The number of simulants used
- The amount of quarry rock and/or asphalt produced
- The number of vehicles used during training.

5. Approved Training Sites.

a. Bids/FOX Sites:

Babbs Airfield	Firing Point 6	Range 27
TA 231A	TA 400	TA 401

b. Smoke/CS Grenade Sites:

Range 24	Range 33	TA 125
TA 126	TA 148	TA 194
TA 230	TA 233	TA 237
TA 238	TA 240S	TA 241
TA 243	TA 400	TA 401

6. Points Of Contact.

a. For more specific range operations information:

- (1) Range Operations Fire Desk Technician – 596-2525
- (2) Meteorological NCO - 596-4532

b. For more specific information on the air permit contact the Directorate of Public Works, Environmental Division:

- (1) Air Quality – 596-0005
- (2) Environmental Division – 596-0882

Glossary

Section I Abbreviations and Acronyms

AA&E

Arms, ammunition, and explosives

AEC

Army Environmental Center

AGL

above ground level

AIT

Advanced Individual Training

ALS

Ammunition Logistics Section

AMC

Army Material Command

AT

annual training

AR

Army regulation

ARSO

Assistant range safety officer

ASP

Ammunition Supply Point

ATTN

attention

ATV

all-terrain vehicle

BASOPS

base operations

BIDS

biological integrated detection system

BG

bacillus globigii

BRM

basic rifle marksmanship

CALFEX

combined Arms Live-fire Exercise

CATEX

combined arms training exercise

CBRN

chemical, biological, radiological, and nuclear

CCMCK

close combat mission capability kit

CCP

casualty collection point

CDTF

chemical defense training facility

CLFR

Convoy live-fire range

CG

commanding general

CM

centimeter

CM

chemical

COB

civilian on the battlefield

COND-RES

conditional reservation

CP

command post

CS

chloroacetophenone sulfur

CTC

combat training company

CTMC

consolidated tROp medical clinic

CVC

combat vehicle crewman

D&C

drill and ceremonies

DA

Department of the Army

DAITM

Department of the Army Investigation Team
for Malfunctions

DES

demolition effects simulators

DOD

Department of Defense

DODIC

Department of Defense identification code

DPTMS

Directorate of Plans, Training, Mobilization
and Security

DPW

Directorate of Public Works

DTG

date/time group

DZ

drop zone

DZSO

drop zone safety officer

EENR

environmental, energy, and natural
resources

ENGR

engineer

EOD

explosive ordnance disposal

EPW

Enemy Prisoner of War

EST

engagement skills trainer

FAA

Federal Aviation Administration

FDC

fire direction center

FLA

front line ambulance

FLIP

flight information publication

FLW

Fort Leonard Wood

FM

field manual

FORSCOM

Forces Command

FT

feet

FTX

field training exercise

GLWACH

General Leonard Wood Army Community
Hospital

HAHO

high altitude high opening

HC

hexachloroethane

HMMWV

high mobility multi-wheeled vehicle

HTA

Helicopter training area

HW

hazardous waste

IBA

individual body armor

IET

initial entry training

IED

improvised explosive device

ITAM
Integrated Training Area Management Program

ITRO
Interservice Training Review Organization

kg
kilogram

LAO
Logistics Assistance Office

Lbs
pounds

LBV
load bearing vest

LRC
Logistics Readiness Center

LRSO
laser range safety officer

LMR
land mobile radio

LSDZ
laser surface danger zone

MDI
modern demolition initiators

MDNR
Missouri Department of Natural Resources

Med
medical

MEDDAC
medical department activity

MEDEVAC
medical evacuation

MET-D
meteorological data

METL
mission essential task list

MILES

multiple integrated laser engagement system

MMR
military munitions rule

MOPP
mission oriented protective posture

MOUT
military operations on urban terrain

MP
military police

MPH
miles per hour

MSD
minimum safe distance

MSCoE
Maneuver Support Center of Excellence

MSL
mean sea level

MSO
MSCoE Safety Office

MTOC
Motor Transportation Operators Course

NCOA
Noncommissioned Officer Academy

NCOIC
noncommissioned officer in charge

NEC
Network Enterprise Center

NG
national guard

NSN
national stock number

NOE
nap of the earth

NOTAM
notice to airmen

NVD
night vision devices

OIC
officer in charge

OPFOR
opposing force

OSUT
one station unit training

PAO
Public Affairs Office

PECS
physical endurance combat skills

PFT
physical fitness training

PM
provost marshal

POC
point of contact

POI
program of instruction

POL
petroleum, oils and lubricants

POV
privately owned vehicle

POW
privately owned weapon

PSP
power support platform

PT
physical training

QASAS
quality assurance specialist, ammunition surveillance

RCNI
Range Operations number identifier

RO

Range Officer

RCRA
Resource Conservation and Recovery Act

REG
regulation

RFMSS
Range Facility Management Support System

ROTC
Reserve Officer Training Corps

RSO
range safety officer

SAP
satellite accumulation point

SARSA
small arms range safety area

SCO
Smoke control officer

SDO
Staff duty officer

SDZ
surface danger zone

SFO
senior fire officer

SGS
Secretary of the General Staff

SJA
Staff Judge Advocate

SOP
standing operating procedure

TA
training area

TACOM
Tactical Army Command

TB
technical bulletin

TC

training circular

TFW

tactical fighter wing

TM

technical manual

TNT

trinitrotoluene

TOT

time on target

TPA

terephthalic acid

TRADOC

Training and Doctrine Command

TSC

training support center

TSP

training support package

TTB

tactical training base

UIC

unit identification code

USAES

United States Army Engineer School

USACBRNS

United States Army Chemical, Biological, Radiological, and Nuclear School

USAMPS

United States Army Military Police School

UXO

unexploded ordnance

VIC

visual information center

VT

variable trim

VFR

visual flight rule

WBG

wet bulb globe temperature

WP

white phosphorous

Section II

Terms

Ammunition and explosives

Includes (but is not necessarily limited to) all items of ammunition; propellants, liquid and solid; high and low explosives; guided missiles; warheads; devices; pyrotechnics; chemical agents; and components and substances associated therewith, presenting real or potential hazards to life and property.

Ammunition and explosives area

An area specifically designated and set aside from other portions of an installation for the development, manufacture, testing, maintenance, storage, or handling of ammunition and explosives.

Assistant Range Safety Officer (ARSO)

A qualified commissioned or warrant officer, noncommissioned officer (SSG or higher), or civilian GS-5 or higher designated by the OIC to assist the RSO in carrying out the safety responsibilities for the range activities.

Barricade

An intervening barrier, natural or artificial, of such type, size, and construction as to limit in a prescribed manner the effect of an explosion on nearby buildings or exposure.

Blast impulse

The product of the overpressure from the blast wave of an explosion and the time during which it acts at a given point (that is, the area under the positive phase of the overpressure-time curve).

Blast overpressure

The pressure, exceeding the ambient pressure, manifested in the shock wave of an explosion.

Bloodland Range Training Complex

All ranges and training areas on Fort Leonard Wood outside the cantonment area.

Bloodland Troop Trail

A paved trail running north and south, parallel to Iowa Ave. Closed to wheeled vehicles, except trail vehicles for foot marches.

Center of impact

Center of the dispersion pattern of impact bursts. From the point of view of range only, it is the range center; from the point of view of deflection, the deflection center.

Chemical agent

A substance that is intended for military use with lethal or incapacitating effects upon man through its chemical properties. Excluded from chemical agents for purposes of this Standard are riot control agents, chemical herbicides, smoke- and flame-producing items, and individual dissociated components of chemical agent ammunition.

Clearances

a. Surface clearance. A range clearance where the surface area is searched visually and dud/UXO and other munition contamination are removed and disposed of properly. Surface-cleared ranges are restricted to activities that require no ground breaking and limited access.

b. **Shallow clearance.** A range clearance where the area is systematically swept with standard service mine detectors and all ferrous cased dud/UXOs on the surface and down to a depth of 20-24 inches should be located, removed, and disposed of properly. The use of shallow cleared areas is restricted to activities causing only shallow surface disturbance, such as agriculture.

c. **Moderate depth clearance.** A range clearance, following surface and shallow clearance, to a depth of five feet, using a detector system more sensitive than the service mine detector. All items located are dug up and disposed of properly. Moderate depth clearance is required when an area is to undergo development.

d. **Deep clearance.** A range clearance that is usually only required at "point" locations (i.e., where deep underground utilities or the foundations of a large building are to be placed). The area is first cleared by use of mine detectors and then in 5-foot layers to the necessary depth.

Combined arms live-fire exercise (CALFEX)

A combat exercise in which an Army/Marine Corps combined-arms team, in combat formation, conducts a coordinated combat firing and maneuver practice in executing the assault, seizure, and defense of appropriate objectives. Tactical air support may be included.

Contaminated area

Any area where there is known or suspected unexploded munitions regardless of type or the means by which they got there.

Cookoff

A functioning of any or all of the explosive components due to high temperatures within the weapon.

Demolitions effects simulation

Des charges are explosives which use detonating cord, blasting caps, MDI, cardboard sand and chalk to simulate explosives

Detonation

A violent chemical reaction within a chemical compound or mechanical mixture evolving heat and pressure. A detonation is a reaction which proceeds through the reacted material toward the unreacted material at a supersonic velocity. The result of the chemical reaction is exertion of extremely high pressure on the surrounding medium forming a propagating shock wave that originally is of supersonic velocity. A detonation, when the material is located on or near the surface of the ground, is characterized normally by a crater.

Direct fire

Fire delivered on a target when the piece is layed by sighting directly on the target, using the gun sighting equipment.

Downwind hazard area

The area beyond the impact point that may be affected by a riot control chemical agent or by smoke due to downwind drift caused by wind direction and speed.

Dry code

Acknowledgement from Range Operations that the training event is over.

Dud/UXO

Ammunition which has failed to function as designed after firing. As a result, it is in a hazardous and unpredictable condition. This does not include misfires.

Dud/UXO area

Areas known to contain unexploded live ammunition.

Explosion

A chemical reaction of any chemical compound or mechanical mixture that, when initiated, undergoes a very rapid combustion or decomposition releasing large volumes of highly heated gases that exert pressure on the surrounding medium. Also, a mechanical reaction in which failure of the container causes the sudden release of pressure from within a pressure vessel, for example, pressure rupture of a steam boiler. Depending on the rate of energy release, an explosion can be categorized as a deflagation, a detonation, or pressure rupture.

Firing lane

The area within which an aircraft or vehicle-mounted weapon is fired. It consists of a start firing line, cease-firing-disarm line, and left and right limits of fire.

Firing line

The line from which weapons are fired and forward of which no one is permitted during firing except as cited in this regulation.

Firing position

The point or location at which a weapon other than demolitions is placed for firing. (For demolitions, the firing position is the point or location at which the firing crew will be located during demolition operations).

Forward operations base

A base usually located in friendly territory or afloat that is established to extend command and control or communications or to provide support for training and tactical operations. Facilities may be established for temporary or longer duration operations and may include an airfield or an unimproved airstrip, an anchorage, or a pier.

Hangfire

A delay in functioning.

High-angle fire

Fire delivered at elevations greater than the elevation producing maximum range; fire, the range of which decreases as the angle of elevation is increased. Mortars deliver high-angle fire.

Low-angle fire

Fire delivered at angles of elevation equal to or below that corresponding to the maximum range of the gun and ammunition.

Malfunction

The failure of a weapon or ammunition to function IAW the intent of its design.

Meteorological-data (MET-D) event

For units which are required to comply with the Fort Leonard Wood Air Compliance Permit: A scheduled training event that requires favorable meteorological data collected by Range Operations in order to execute training in compliance with the FLW Air Permit. MET-D events

require an overlay, a scheduled Training Area and a Range Operations-issued wet code to begin the event.

Misfire.

A complete failure to fire, not necessarily hazardous, but, since it cannot readily be distinguished from a delay in functioning or hangfire, must be handled as worst case IAW procedures for the weapons system.

Occupation code.

Approval from Range Operations to occupy a training area. (A wet code is required to begin training.)

Officer in charge (OIC).

A commissioned, warrant, or noncommissioned officer (NCO) in the grade of E6 (small arms and machine guns) or above from the training or firing unit chain of command. Responsible for the overall safe conduct of training and the proper use of the facility.

Overhead fire

Fire that is delivered over the heads of unprotected friendly troops occupying Area D. Troops wearing kevlar helmets, IBA, and protective masks are considered unprotected. It does not apply to artillery crews occupying Area E due to approved tactical firing formations.

Public traffic route

Any public street, road, highway, navigable stream, or passenger railroad (includes roads on a military reservation that are used routinely by the general public for through traffic).

Range

Any area on the post designated and habitually used for the firing of weapons with live ammunition, weapon training for a special purpose, or use of demolitions.

Range Officer (RO)

A commissioned officer, warrant officer, non-commissioned officer, or civilian who serves as the central point of control and coordination for all activities conducted with the installation/community training complex and implements and enforces the installation/community range safety program. This may include the scheduling and maintenance of the training complex IAW this regulation and the policies of the commander.

Range Safety Officer (RSO)

A qualified commissioned or warrant officer, or noncommissioned (E5 or higher) officer, who is the direct representative of the officer in charge of firing. The RSO is responsible to the OIC for insuring the adequacy of safety when firing is being conducted and for final determination that, before firing, settings placed on in-direct fire weapons and ammunition represent data within prescribed safety limits.

Responsible Unit

Unit responsible for ensuring training facility is safe for operation. Submits work orders for organizational maintenance. Responsibility does not imply ownership. RO is final approval authority for training outside cantonment area.

Roadblocks

A permanent or temporary barrier to foot and vehicular traffic beyond which personnel are forbidden to pass without the prior approval of Range Operations or the officer in charge of the

activity for which the roadblock is established. A roadblock may be a wire barrier, gate, or a sign.

Roadguard.

A roadguard is an occupied location to restrict access to a given area. Usually roadguards are used to stop or redirect vehicular traffic during periods when weapons are firing over or across main roads and the firing would endanger passengers in vehicles traveling those roads. Roadguards must establish and maintain communication with the OIC of the training in progress for which they are a part.

Scheduling Activity

The organization directly responsible for maintaining, scheduling, reporting use and training conflict resolution.

Senior Commander

Commandants, Garrison Commander

Safety radius

The distance from a weapon considered safe for personnel. It is also the minimum distance that troops will be kept away from a misfire, dud/UXO, or any potential explosion hazard and the distance required to move from a potential cook-off that cannot be cleared from the weapon.

Smoke Control Officer (SCO)

A range safety certified commissioned, warrant, or noncommissioned officer in the rank of staff sergeant or above or a qualified civilian instructor. The SCO must be knowledgeable of and exercise the health and safety precautions that are associated with hexachloroethane (HC) and fog oil smoke. SCO is responsible for command and control of all aspects of the training and must be physically present in the training area.

Surface Danger Zone

That segment of the range area endangered by a particular type of weapon firing and consists of the following areas:

- a. Target area. The point or location to which the weapon is to be fired. (For demolitions, the target area is the point or location at which the demolition charge is emplaced).
- b. Impact area. The primary danger area for indirect fire weapons that are established for the impact of all rounds. When applied to direct fire weapons, it is the area located between established range limits. The impact area is within the approved surface danger zone.
- c. Ricochet area. The area between the impact area and Area A that parallels the line of fire. It is provided to contain ricochet projectiles.
- d. Area A. The area (secondary danger area) that parallels the impact area laterally. It is provided to contain fragments from items exploding or ricocheting on the right or left edge of the impact area.
- e. Area B. The area (secondary danger area) on the downrange side of the impact area and Area A. It is designed to contain fragments from items exploding on the far edge of the impact area.

f. Area C. The area (secondary danger area) on the up range side of the impact area and parallel to Area B. It is designed to contain fragments from items exploding at the near edge of the impact area (also referred to as the short limit of the target area).

g. Area D. The area between Area C and Area E. It is a safe area for troop occupation for training purposes.

h. Area E. The area between Area D and the firing position. It is endangered by muzzle debris, overpressure, and injurious noise levels. Area E may be occupied only by weapon crews firing from an approved tactical configuration (circular, box, star, etc.).

Tactical roadblock

Temporary barriers, block craters, etc., used in tactical training. Tactical roadblocks will be constructed in a manner to permit passage of emergency traffic and be removed upon completion of exercise.

Training area

A particular portion of the Fort Leonard Wood reservation identified by a number in which training activities are conducted.

Training exercise

A term used to denote a certain type of activity on a specific piece of terrain. It includes range firing, demonstrations, and field training exercises, testing of material and other special field activities. It may include live ammunition, blanks, demolitions, pyrotechnics, simulators, and chemical ammunition.

Training facilities

Committee/storage buildings, portable metal buildings, bleachers, latrines, range towers, warming tent frames, mess tables, rifle racks, firing lanes/lines, target devices/targets, lane markers, and other authorized items not considered training aids.

Troop limits

That portion of a range or exercise area beyond which personnel and vehicles will not go except upon specific authorization by Range Operations. A troop limits area will not be occupied when it falls within the surface danger area of another range or problem area unless advance written coordination is effected between the units concerned and Range Operations.

User maintenance

Maintenance performed on a day-to-day basis by using units/activities on ranges, training areas and related facilities which requires no alteration to the range or facilities.

Waiver

Written authorization which specifically permits deviation from the mandatory requirements of applicable regulations for a specified time, not to exceed one year from date of issuance.