Department of the Army ***Fort Sill Regulation 385-1**
Headquarters, U.S. Army Garrison
462 Hamilton Road, Suite 120
Fort Sill, Oklahoma 75303
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SAFETY

POST RANGE REGULATION

Summary. This regulation establishes responsibilities, procedures, and rules for all personnel utilizing the Installation Range Complex by personnel assigned, attached or transient to Fort Sill, Oklahoma.

Applicability. This regulation applies to commanders and unit personnel assigned, attached, tenant, or transient to Fort Sill while conducting training operations on the Fort Sill training complex.

Suggest Improvements. The proponent of this regulation is the Directorate of Plans Training, Mobilization and Security. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to DPTMS.

Distribution. This regulation is distributed solely through the Directorate of Human Resources, Administrative Services Division Homepage at http://Sill-www.army.mil/dhr/Admin Svcs Div/index.html.

*This regulation supersedes Fort Sill Regulation 385-1, 23 January 2012 and includes provisions of Fort Sill Reg 115-11, Survey Control within the Fort Sill Military Reservation, which is rescinded.

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Chapter 1
Introduction

1-1. Purpose. This regulation prescribes policies and procedures for scheduling, maintenance, and safe operations on Fort Sill ranges and training areas.

1-2. References. Appendix A of this regulation contains a listing of required and related publications and forms.

1-3. Explanation of Abbreviations and Terms. Abbreviations and terms used in this regulation are explained in the glossary.

1-4. Records Management. Records created as a result of processes prescribed by this regulation must be identified, maintained, and disposed of IAW AR 25-400-2, The Army Records Information Management System (ARIMS) and DA Pam 25-403, Guide to Recordkeeping in the Army. Record titles and dispositions are available on the Army Records Management System website: https://www.arims.army.mil/.

1-5. Applicability. This regulation applies to personnel and organizations, military and civilian, who are authorized to use Fort Sill Military Reservation outside the cantonment area, to include the airspace up to an altitude of 40,000 feet, on official business using equipment (including weapons) that has been type classified and approved for use by the U.S. military. Fort Sill Regulation 200-1 governs recreational use of ranges and training areas. Other uses of ranges and training areas require an approved exception to policy IAW the procedures in paragraph 1-6 of this regulation.

1-6. Exceptions.

a. Events using weapons or potential weapon technology (lethal or non-lethal) that have not been type classified for use by U.S. military will not be used unless the following actions are completed:

(1) All weapons or potential weapon technology must have a surface danger zones (SDZ) that has approved by the Director, U.S. Army Training Support Center IAW AR 385-63 and DA Pam 385-63. Surface danger zones provided by any other activity is not considered valid.

(2) The requirement for the event must be validated by the HQDA DCS G-3/5/7 IAW AR 385-63.

(3) After the requirement is validated, the concept of operations for the event will be submitted to the Range Officer NLT 60 days prior to the event for safety review. The Range Officer will route the request through the chain of command to the FCoEFS Senior Commander for approval.

(4) If the SDZ cannot be contained entirely within the Fort Sill boundaries (including restricted special use airspace), then the exception must be submitted to the Director of the Army Staff as an exception to policy in AR 385-63.

b. Units will submit requests for exception to policy to allow family members, and other nonmilitary personnel not on official military business onto active firing positions, ranges, or training areas to participate in organization days or marksmanship competitions. These requests will be in the form of a decision paper to the Range Officer no later than 30 days before the event date. The request will include the following items, in addition to any others deemed necessary by the command to ensure firing safety, discussed in detail, before any consideration will be given:

(1) Weapon Operating Instruction (Operation, Misfire Procedures, General Safety).

(2) Verbatim Safety Briefing to be used on the range.

(3) Transportation to and from the range.

(4) Water provided and protection from heat and cold.

(5) Hearing and ballistic protection for participants.

(6) Liability waiver signed by each participant.

(7) Preliminary Risk Assessment (a completed Risk Assessment will be on-hand at the range for all conditions which apply on date of event and signed at the appropriate level).

(8) Safety qualified coach per each firer if civilians are to fire military weapons.

c. Submit all other requests for exceptions to the requirements of this regulation in writing to Chief, Range Operations, NLT 9 weeks prior to the training date for TRADOC units, 8 ½ weeks for Reserve Component units on Annual training or 8 weeks for FORSCOM units.

Chapter 2
Responsibilities

2-1. USAFCOEFS Commander. The USAFCOEFS Commander will--

a. Establish an installation range safety program.

b. Assign a qualified installation range officer in writing.

c. Serve as approving authority for exceptions to policy regarding use of non-standard ammunition on Fort Sill ranges and training land.

d. Serve as approving authority for deviations required by range users to conduct training.

2-2. Garrison Commander. The Fort Sill Garrison Commander will designate a point of contact to serve as the central manager for—

a. Program execution of all range, training land, and related support requirements.

b. Coordination with the corresponding IMCOM G-37 Sustainable Range Program (SRP) agent and G-6, U.S. Army Corps of Engineers Range and Training Land Program Mandatory Center of Expertise (RTLP MCX) program manager, and the HQDA DCS G-3/5/7 Chief, Training Support Systems Division (DAMO–TRS).

2-3. Director of Plans, Training, Mobilization, and Security (DPTMS).

a. The DPTMS is the approval authority for allowing access to the range and training land complex to non-DoD activities or DoD activities for purposes other than training performed under the provisions of AR 350-19 and AR 385-63.

b. The DPTMS is the approval authority for the Range Operations operating budget.

2-4. Brigade/Battalion Commanders/Directors/Department Chiefs. Brigade/Battalion commanders/directors, department chiefs will--

a. Establish, document, and maintain a safety training and certification program to train and qualify personnel in safety procedures for their specific mission and assigned weapons.

b. Certify personnel to perform the duties of officer in charge (OIC) and range safety officer (RSO) IAW 10-1 b. DPTMS or the Range Officer may decertify an OIC/RSO if he/she violates the Fort Sill Reg 385-1.

c. Ensure subordinate leaders complete risk assessments and are signed at the appropriate level, IAW ATP 5-19 and TRADOC Reg 385-2.

d. Prohibit use of alcohol and controlled substances in the training complex and prohibit any individual under the influence of alcohol or controlled substance entrance into the training complex.

e. Report and investigate incidents or accidents involving equipment**,** weapons, or ammunition to Range Operations.

2-5. Company/Battery/Detachment Commanders. Unit commander will--

a. Ensure compliance with this regulation, applicable TMs and FMs, installation range guidance, environmental regulations, and applicable SOPs for safe training and firing.

b. Designate an OIC and RSO for each firing exercise or any training requiring the use of pyrotechnics.

c. Ensure personnel performing duties of OIC and RSO are certified IAW 10-1 b.

d. Complete risk assessments and ensure it is signed at the appropriate level, IAW IAW ATP 5-19 and TRADOC Regulation 385-2.

e. Prohibit use of alcohol and controlled substances in the training complex and prohibit any individual under the influence of alcohol or controlled substance entrance into the training complex.

f. Report and investigate incidents or accidents involving weapons or ammunition to Range Operations.

2-6. Installation Range Officer. The Installation Range officer will--

a. Serve as the central point of control and coordination for all activities conducted within the installation ranges and training land.

b. Coordinate range safety issues with appropriate installation staff.

c. Approve, control, and monitor personnel access into the installation training complex.

d. Maintain current maps and overlays of training complex impact area boundaries, surface danger zone (SDZ) diagrams, and ground hazards.

e. Maintain records of current surface danger areas and airspace zone diagrams, weapon system safety data, firing limitations, and survey data for firing positions.

f. Take or recommend actions necessary to enforce provisions of this regulation.

g. Perform other administrative and investigative duties and activities related to the scheduling and safe operation of ranges, training areas, and airspace.

h. Maintain permanent records of all munitions expended, to include an estimated dud rate, by type, quantity, location, and using organization. Include all UXO clearance operations or EOD incidents conducted on the range.

i. Maintain and repair mechanical and automated range target systems to ensure availability of ranges for units.

j. Submit requests for maintenance and repair of real property on ranges and training land to DPW to ensure that facilities including training land are safe and functional.

Chapter 3
Communication Requirements

3-1. Communications. Communication between units and Range Operations is paramount to ensure the safe operation of the Fort Sill Military Reservation.

a. The following are permanently assigned Range Operations frequencies SC/PT for SINCGARS):

RADIO FREQUENCIES		
EAST RANGE	**WEST RANGE & QUANAH**	**MACOM**
38.50	34.50	East/West

b. Range Operations operates a range safety net 24 hours a day, 7 days a week, to control weapons firing, the use of training facilities, and the conduct of aerial operations.

c. The highest controlling element using the Fort Sill Military Reservation must monitor the range safety net for all of its subordinate units at all times. The Range Officer will place any unit not monitoring this net in an "ADMINISTRATIVE CHECKFIRE" status until continuous monitoring is verified.

d. When communicating with Range Operations over the range safety net, use of Hollywood or unit internal call signs are not authorized. Unit call signs will be the actual unit designation (e.g., 2-2 FA at Firing Point 45W or 2-2 FA at Training Area 37).

e. Do not use the range safety net for administrative purposes. Communication checks over the range safety net should be made only when doubt exists concerning communication status. Units will make every effort to keep the radio nets free of unnecessary traffic.

f. Units with no access to TO&E radios may submit a request for radios (Ma/COM) to communicate with Range Operations through the Internet (https://rfmssbackup.belvoir.army.mil/sill/pages/login.aspx, menu item: Library, RANGE OPERATION DOCUMENTS; Document Title: RANGE SUPPORT REQUEST) at least 2

weeks prior to week of training. Contact Range Operations at 442-2008/2994 if you cannot communicate on the Radio frequencies listed.

3-2. Dry Check-In. This procedure allows the highest controlling element to monitor the range safety net for all sub-elements and eliminate the requirement to individually check-in sub-elements. Range Operations will issue a six digit Dry Check-In Code upon receipt of the following information (Lines A-K below):

NOTE: Check in for pyrotechnics requires Wet Check in with an OIC and RSO in line D.

DRY CHECK-IN PROCEDURE	
LINE	**INFORMATION REQUIRED**
A	Unit Identification
B	Location of Controlling Element and all TAs to be used for training
C	RTOs Initials
D	OICs Name and Rank
E	Unit Phone Number
F	Total Number of Personnel
G	Number and Type Of Weapons
H	Total Number of Vehicles (Wheeled)
I	Total Number of Vehicles (Tracked)
J	Location of Helicopter Landing Zone
K	If releasing Pyrotechnics/Simulators, ensure a check-in is accomplished

3-3. Wet Check-In. The highest controlling element will use this procedure to check sub-elements in and out of the ranges including Observation Points and RETRANS sites. The controlling element will monitor the range safety net, allowing the sub-elements to focus on training. Sub-elements are not required to monitor the range safety net. The controlling element will check all sub-elements in and out of the range. In the event of a check fire or cease-fire freeze from Range Operations, the controlling element will notify all sub-elements and then notify Range Operations of their status. Range Operations will issue a six digit Wet Check-In Code upon receipt of the following information (Lines A-J below):

WET CHECK-IN PROCEDURE	
LINE	**INFORMATION REQUIRED**
A	Unit Identification
B	Location of Controlling Element and all TAs to be used for training
C	RTOs Initials
D	OIC/RSOs Name and Rank (for each firing element in a Wet Status)
E	Unit Phone Number
F	Number of Personnel
G	Number and Type of Weapons including lasers
H	Total Number of Vehicles (Wheeled)
I	Total Number of Vehicles (Tracked)
J	Location of Helicopter Landing Zone

3-4. Check-Out Code. Units must request a check-out code prior to moving. Range Operations will issue a six digit Check-Out Code upon receipt of the following information (Lines A-E below):

CHECK-OUT PROCEDURE	
LINE	**INFORMATION REQUIRED**
A	Unit Identification
B	Number, Type of Rounds Expended (if any) and DODIC to include blanks
C	Number and Type of Charge Fired (if any) and DODIC
D	Report any DUDS to Include Location and Lots for Round and Fuze
E	Report number and type of inoperative target systems and firing lanes

Chapter 4
Training Safety

Section I
Safety

4-1. Risk Management.

a. Risk management is a mandatory, systematic process, which identifies risks of mission and training requirements, weighs risk against training benefits, and eliminates unnecessary risk. Leaders must complete a deliberate risk assessment using DD Form 2977 prior to conducting training on a Fort Sill Military Reservation training facility or site. The risk assessment covers all training events scheduled at the training site and signed at the appropriate level.

b. Units will provide risk assessments for all events assessed as High or Extremely High risk to the Garrison Safety Manager for comment before conducting training.

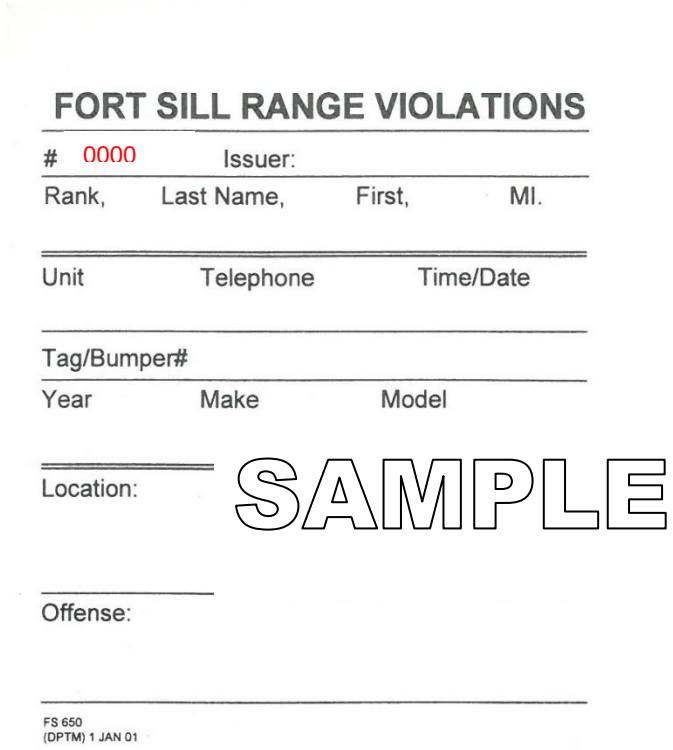
c. The risk assessment will remain at the training site until training is completed, and unit will update as changes to training environment or situation dictate (e.g., change in weather, live fire, day vs. night op, etc.).

d. Address specific questions about risk management/assessment to the Installation Safety Office, 442-4215/4466.

4-2. Policy Enforcement. Range Operations personnel may issue the OIC, RSO or NCOIC of a unit conducting field training a Range Violation Notice (Fort Sill Form 650) for failure to comply with this regulation. The Range Officer may suspend the OIC, RSO or NCOIC on the spot. DPTMS will notify (in writing) the battalion commander of the affected unit of the circumstances surrounding the violation. Depending on the severity of the violation, DPTMS or Range Officer could decertify the OIC/RSO/NCOIC. In case of recurring violations or decertification, DPTMS will notify (in writing) the unit's next higher commander.

a. Recertification. The decertified individual must be retested by the certification authority and attend the Range Safety Brief prior to assuming duties as OIC/RSO. A copy of the test and answer sheet will be supplied to Range Operations Officer in order to complete the re-certification process.

b. The Fort Sill Form 650 is a controlled document with a serial number for each form. Each form is produced in three copies: 1) the original copy is provided to the range officer, 2) the second copy (yellow) is provided to the offender, and 3) the third copy (manila) is retained for records IAW paragraph 1-4 of this regulation.



FORT SILL RANGE VIOLATIONS

0000 Issuer:

Rank, Last Name, First, MI.

Unit Telephone Time/Date

Tag/Bumper#

Year Make Model

Location:

SAMPLE

Offense:

FS 650
(DPTM) 1 JAN 01

Figure 4-1. Sample Fort Sill Form 650

4-3. Incident/Accident Reporting.

a. Round Outside of Designated Target Area.

(1) In the event a unit observing indirect fires observes a round which impacts outside of the designated target area, the unit observing the fires will immediately contact Range Operations and the firing unit. Range Operations will direct all indirect firing points to "CEASE FIRE FREEZE". (See paragraph 6-3.c. for CEASE FIRE FREEZE Procedures.)

(2) The unit observing the round out of target area will submit the following report as soon as possible:

10 LINE ROUND OUT OF TARGET AREA SPOT REPORT	
LINE	**INFORMATION REQUIRED**
1	Date/time of incident
2	Location of impact
3	Any injuries to personnel
4	Any equipment damage
5	Number of rounds out of impact
6	Airburst or ground burst
7	If airburst, estimated height
8	Location of observer
9	Source of round (if known)
10	Name and unit of person reporting

(3) Range Operations will initiate notification and investigation procedures (See paragraphs 6-3.d. and 6-3.e..)

(4) The firing unit will remain in CEASE-FIRE FREEZE status until instructed otherwise by Range Operations.

b. Unobserved Fires.

(1) In the event a unit fires a round which is unobserved, the unit observing the fires will immediately direct the firing unit to "CEASE FIRE FREEZE" then contact Range Operations.

(2) Range Operations, with support of the firing unit determines the calculated impact location of the round (s)

(3) If Range Operations determines that the calculated impact of the round(s) is outside the designated impact area, they will initiate notification and investigation procedures (See paragraphs 6-3.d. and 6-3.e..)

c. CEASE FIRE FREEZE Procedures.

“

(1) Upon receipt of “CEASE-FIRE FREEZE”, firing units will immediately comply the following procedures:

(a) Do not fire or move any weapons.

(b) Leave sighting and aiming stakes in place.

(c) Do not alter fire control equipment.

(d) Do not shut off or alter fire direction equipment.

(e) Do not move or touch ammunition, to include unused propellant bags.

(f) Move all personnel at least 50 feet away from weapons and weapons vehicles.

(2) The firing unit will respond with the name and rank of the OIC to acknowledge receipt of the call when their location is called by Range Operations.

(3) The firing unit will remain in CEASE-FIRE FREEZE status until instructed otherwise by Range Operations.

d. Notification Procedures.

(1) As soon as possible after the incident, Range Operations will notify the Fort Sill Operations Center (FSOC), the DPTMS, and the Garrison Safety Manager that a firing incident occurred with round(s) out of designated target area and provided the following information:

(a) Time of the incident.

(b) Firing unit.

(c) If there were any death or injuries to personnel.

(d) If there was any damage to any equipment.

(2) The firing unit will submit appropriate serious incident reports IAW USAFCoEFS Reg 1-8 through the Range Officer and the Garrison Safety Manager to the FSOC.

e. Investigation Procedures.

(1) The Garrison Safety Manager will investigate the incident IAW AR 385-10, The Army Safety Program; and AR 385-63, Range Safety.

(2) Range Operations will inform the Garrison Safety Manager if the firing event was being conducted under a deviation to AR 385-63.

(3) The Garrison Safety Manager will report the findings of the investigation to the Senior Commander, Fort Sill.

(4) If the incident was attributed to human failure, the unit chain of command through the brigade commander will brief the Senior Commander, Fort Sill, no later than 48 hours following the completion of the investigation, of corrective actions taken to prevent recurrence.

f. Other Incidents/Accidents.

(1) Any person observing or involved in an accident/incident listed below will report it immediately to Range Operations.

REPORTABLE INCIDENTS/ACCIDENTS
Death or any injury requiring the evacuation of military or Civilian personnel. (Unit will also submit a Serious Incident Report (SIR) IAW USAFCoEFS Regulation 1-8.)
Property damage exceeding $100.
Incidents that result in a loss of combat capability or security (e.g., lost weapon, ammunition, or COMSEC equipment). (Unit will also submit an SIR IAW USAFCoEFS Reg 1-8.)
Any incident likely to result in adverse media coverage. (Unit will also submit an SIR IAW USAFCoEFS Reg 1-8.)
Any fire, in or out of the impact area.
Vandalism on the range or to range facilities.
Missing aircraft. (Unit will also submit an SIR IAW USAFCoEFS Reg 1-8.)
Unmanned Aircraft System (UAS) leaving restricted airspace. (Unit will also submit a DA Form 2397, Unmanned Aircraft System Accident Report, completed IAW procedures in DA Pam 385-40, Accident Investigations and Reporting, to the Fort Sill Air Traffic and Airspace Officer NLT 18 hours after the incident.)
Dud munition
Weapon or ammunition malfunctions.
Any incident/accident involving radioactive material.
Use of riot control agents (RCA) outside of approved areas. (Unit will also submit an SIR IAW USAFCoEFS Reg 1-8.)
Any other incident/accident deemed reportable at the time.
All HAZMAT spills, i.e. fuel, oil and any petroleum products. (Unit will also submit report to Directorate of Public Works (DPW) Environmental Quality Division (EQD) IAW para. 12-5 of this regulation and submit an SIR.)

(2) Reports should include the following information:

INCIDENT/ACCIDENT REPORT FORMAT	
LINE	**INFORMATION REQUIRED**
1	Name, Grade, and Unit of Person Calling
2	Type of Incident/Accident, Location, & Time Incident/Accident Occurred
3	Injury Data (# Persons by Name, Grade, Unit, & Extent of Injuries)
4	Any Useful Additional Information or Information Requested by Range Operations

(3) Units will provide a copy of any SIR for an incident listed above to the Range Officer.

4-4. Unexploded Ordnance Reporting.

a. EOD Requests. Make emergency requests (live unexploded ammunition) for EOD support through Range Operations. Make routine requests (non-explosive ammunition) directly to 761st Ordnance Company (EOD) at 442-8885/8886.

b. Unexploded Ordnance (UXO) hazard procedures. If an item of unexploded ordnance (UXO) is found, observe the following rules:

UNEXPLODED ORDNANCE RULES	
RULE	
1	Do not approach, move, or disturb the UXO.
2	Make all radio transmissions further than 100 meters from the UXO.
3	Do not attempt to remove anything on or near the UXO.
4	Mark UXO with marking kits or engineer tape placed at waist level above ground. Any marking should be visible from at least 50 meters away. Do not mark the UXO any closer than the distance at which it was first discovered.
5	Evacuate all nonessential personnel and equipment from the area.

c. Report UXO hazards to Range Operations using the following spot report:

9 LINE UXO SPOT REPORT	
LINE	**REQUIRED INFORMATION**
1	DTG UXO discovered & Reporting Unit Designation.
2	Grid Location of UXO.
3	Contact Method for Reporting Unit (Radio Frequency, Call Sign, Phone #)
4	Type of Munition & Method of Emplacement (Dropped, Projected, Placed, or Thrown).
5	Any associated NBC Contamination.
6	Any Resources Threatened in the UXO Hazard Area.
7	Impact on Unit Mission.
8	Any / All Protective Measures Taken.
9	Recommended Priority (Immediate, Indirect, Minor, No Threat).

4-5. Off Limits Training Areas. The following areas of Fort Sill are **off limits:**

OFF LIMITS AREAS OF FORT SILL	
Number	**Description**
1	All weapon system Surface Danger Zones (SDZs).
2	All Impact Areas (unless given permission from Range Operations).
3	Sewage treatment facilities in TA 31
4	TA 52
5	TA 53 north of Miner Road
6	UXO area in TA55 (ND 49823416 to ND 49843368 to ND 50333368 to ND 60333416
7	All areas marked by EQD for revegetation
8	Running Deer Girl Scout Camp (ND 391404).
9	Camp Eagle (unless permission is granted from Commandant, NCOA).
10	Crater Creek Demolition Area (ND 373353).
11	Quanah Special Effects Fields (ND 261359 to ND 261369 to ND 271369 to ND 271359 to ND 261359).
12	Quanah Range Operations Tower (Antenna Hill) (ND 353348)
13	TA 83 (Medicine Bluffs and Natural Resources Area)

NOTE: Consult the MWR website (http://sill.armymwr.com/us/sill/programs/range-control/) for weekly updates to off limits areas in the range and training land complex.

4-6. Hearing Conservation. Commanders are responsible for implementing the requirements necessary to safeguard individual hearing. OIC/RSOs will enforce hearing conservation practices at all training areas and ranges.

Section II
Movement

4-7. Military Vehicle Movement Restrictions.

a. The following paved roads are off limits for use by any vehicles above 5 tons, tracked vehicles, heavy expanded mobility tactical trucks (HEMTT), and 5 ton and 2 1/2 ton trucks loaded with fuel or ammunition:

(1) Tower Two Road (ND 507348 to 507385). The Chief, Range Operations, will make exceptions on a case-by-case basis.

(2) MOW-WAY Road.

(3) Apache Gate Road.

b. Vehicles will not stop traffic on HWY 115 to permit crossing of vehicle traffic. Vehicles will cross without interrupting public traffic flow by yielding right-of-way and crossing when possible.

c. Tracked vehicles and all vehicles in convoy must never exceed 35 mph on range roads.

d. Utilize ground guide for all vehicles moving in a confined area or where troops are bivouacked.

e. If low water crossings have water flowing over them, and the bottom of the crossing or the water elevation marker cannot be seen, or the MP's have closed (Coned Off) the low water crossing, **DO NOT ATTEMPT TO CROSS**. Low water crossings covered with water may cause vehicles to start floating downstream without warning.

f. Engineer Lake is the only dam authorized for tactical vehicle use. All other dams are off limits to tactical vehicles.

g. Ditches and road shoulders are off limits to all vehicles. Make pivot turns, neutral steers, etc., on roadways.

h. Do not park tracked vehicles within 20 feet of the base of trees. All other vehicles can park no closer than 10 feet from the base of trees.

4-8. Justification for Sole Use of Roads and Trails. The assignment of a range training area does not include the exclusive use of roads and trails in the area unless approved by Range Operations. Tank trails are authorized for all units to utilize without scheduling unless a Foot Road March is being conducted. These trails are training area boundary roads and improved gravel trails that do not impede training of units scheduled for the training areas.

4-9. Privately Owned Vehicle (POV) Restrictions. POV use is allowed on Fort Sill Military Reservation subject to the following:

a. Use POVs in the range and training land complex for military purposes is limited to units having a bona fide need; the Range Officer is the approval authority for range POV passes.

b. The POV range pass will be displayed on the dashboard of the vehicle when parked on a range or in a training area, except as described in paragraph 4-9d, below. Obtain passes from Range Operations for military purposes, or from the Fish and Wildlife Office for recreational purposes, IAW Fort Sill Reg 200-1. These passes are not interchangeable.

c. Artillery firing positions and Training Areas are off-limits to all POVs. However, personnel may park POVs along improved asphalt or gravel roads near firing positions if personnel have a range-parking pass or they may use a parking area if available.

d. Range Parking Passes are not required for improved parking areas (normally at fixed facilities), while the owner is on official military business.

e. Personnel will not drive POVs in blackout areas during the hours of darkness unless they are on official military business or licensed hunters and fishermen traveling 1 hour before dawn and 1 hour after dark enroute to or from their activities. If personnel must enter a blackout area, turn on parking lights only. Black out areas are listed in paragraph 4-12 of this regulation.

4-10. Roadguards and Barriers.

a. Requirements for roadguards are outlined on range safety cards issued by Range Operations. Traffic Control Points (TCP) locations will be coordinated and approved by Range Operations when outside an area scheduled by the unit.

b. Place roadguards/barriers temporarily on roads and trails in the range area to prevent access to danger areas.

c. Vehicles will not cross barriers without permission from Range Operations.

d. Remove barriers as soon as possible after conclusion of the mission dictating their use.

e. Roadguards will control traffic on public highways (e.g., State Highway 115) only during firing of ammunition not approved for overhead fire (e.g., MLRS firing). The highway will be closed only during actual firing and for no longer than 15 minutes at a time. To close the highway, the RSO and OIC will ensure the following:

(1) Guards are equipped with radio or wire communications with the unit FDC.

(2) Guards are posted outside of the safety fan.

(3) The controlling FDC notifies the guards on the highway when actual firing is to commence and has ended.

(4) The guards stop traffic during actual firing.

(5) In the event emergency-type vehicles (e.g., ambulances, fire trucks, police cars) are approaching on the highway, the guards will immediately notify FDC. The FDC will issue check fire and notify the guards to let the emergency vehicles proceed.

(6) Stop school buses for no more than 5 minutes.

f. Roadguards will not close improved surface roads (gravel or pavement) for more than 15 minutes at a time.

g. Roadguards will wear reflective vests at all times and carry baton flashlights when it is dark or visibility is reduced to 500 feet or less.

h. Range Operations and/or DES will emplace temporary barricades as necessary for safety reasons.

i. POVs will not cross any low water crossing barricade. Unit commanders may make the decision to bypass barricades for military vehicles. Use discretion in making this decision. Running water can exert extreme force on the side of a vehicle, washing even the heavy vehicles downstream.

4-11. Range Gates.

a. Individuals using range gates must lock the gates behind them. However, units desiring free access to range gates while conducting field exercises are authorized to leave gates unlocked if guards are posted on both sides of HWY 115 with instructions to prohibit the entrance of unauthorized vehicles and personnel**.** Twin Gates are not authorized entry and exit points for regular traffic. Force Protection rules apply and they must go through normal operating entry points.

b. Keys to Twin Gates and Falcon Gate are maintained at Range Operations. Keys can be requested by filling out the request form located in the range forms folder of the RFMSS library and emailing it to usarmy.sill.imcom.mbx.ft-sill-dptms-range-scheduling@mail.mil. Request can also be faxed to 580-442-4231 or hand carried to BLDG 1490. After submission, keys can be picked up at Range Operations on the day of training. Requests will include dates needed, which gates, justification, and who is authorized to sign for keys (must be SSG or above).

4-12. Blackout Drive/NVG Operations.

a. The following range areas are Blackout Drive Areas and are closed to other than official military activities and POVs during the hours of darkness Monday through Sunday. Conducting blackout drive/NVG operations on the following is prohibited on the remainder of Fort Sill.

(1) All of Quanah range.

(2) West Range area**,** west of West Lake Road on South Boundary Road.

(3) West of Kerr Hill Machine Gun Range, grid ND 429347 on McKenzie Hill Road.

(4) West of Lake Elmer Thomas on North Boundary Road.

(5) Punch Bowl Road between grid ND 538388 and North Boundary Road.

b. Personnel authorized in blackout areas are the following:

(1) Troops in training.

(2) Personnel on official military business.

(3) Licensed hunters and fishermen traveling on the ranges 1 hour before dawn and 1 hour after dark enroute to or from their activities.

c. All drivers using NVGs must be licensed IAW AR 600-55 or undergoing training or testing IAW AR 600-55 under the direct supervision of an NVG-qualified and licensed instructor who is designated in writing by the unit commander.

d. Tactical night blackout moves across State Highway 115 are prohibited. Vehicles crossing State Highway 115 must have service drive lights on low beam.

e. Only Range Operations is authorized to make the decision for blackout drive conditions to be lifted. Range Operations will broadcast lifting of blackout drive conditions over the range safety net when conditions are not conducive to the use of blackout drive and/or NVGs. Commanders should advise Range Operations when conditions are severe enough, in their opinion, to lift blackout drive status.

f. Emergency vehicles responding to an incident will travel full service drive. Other vehicles must stop and allow emergency traffic to pass before continuing under blackout conditions. Range Operations will broadcast that emergency vehicles will be in the blackout drive area over the range safety net.

g. Any unit desiring to conduct blackout drive in areas or on days and times not provided for in paragraph 4-12 must submit a written request to Range Operations at least 3 weeks in advance of the training date(s).

4-13. Convoys.

a. Convoys will not cross or travel on main post roads during the periods of 0645-0730, 1100-1200, and 1600-1715, unless units receive prior clearance from the DES, Traffic Section (558-6014/6015). This restriction does not apply to Saturdays, Sundays, or holidays.

b. Convoys approaching State Highway 115 will stop at the edge of the right-of-way. A responsible individual (SSG or above) will direct each vehicle individually across the highway without interrupting the public traffic flow. **Do not halt** traffic on State Highway 115 to allow military vehicles to cross the highway.

c. Convoys will post roadguards when crossing uncontrolled public traffic route intersections.

d. Convoy speed will not exceed 35 miles per hour.

4-14. Movement of Tracked Vehicles.

a. During movement, use track commanders (TCs).

b. The driver and TC must be two separate people.

c. The TC will have communication with the driver in vehicles equipped with an intercommunication system.

d. If communication between the driver and the TC is lost during movement, the driver will immediately pull off to the side of the road. The unit communications team will repair the communications or lead the vehicle to the next position.

e. Do not exceed 25 miles per hour when driving tracked vehicles.

NOTE: Training Area Entry Points. All tracked vehicles must enter and exit training areas and facilities at authorized points. Authorized points are identified on Fort Sill 1:50,000 maps as roads entering or leaving training areas or facilities.

Section III
Pyrotechnics/CS/Smoke

4-15. Pyrotechnics/Simulator Care and Handling. Care and handling of pyrotechnics, particularly simulators, is of major concern. Misuse, mishandling, or abandonment can easily result in serious injury or death.

a. OIC/RSO must be certified to handle and use pyrotechnics, must be on the unit's safety certification roster, and be on the Range Safety Briefing Roster, on file at Range Operations, must receive a WET check-in code, and is responsible for the accountability of all simulators and pyrotechnics.

b. Turn-in pyrotechnics when there is--

(1) Evidence of moisture within the item.

(2) Any indication of mishandling (cracks, dents, breaks, etc.).

c. Do not touch malfunctioning pyrotechnics/simulators, and report them to Range Operations.

d. During training, report the location of duds or abandoned devices to Range Operations IAW procedures in chapter 4, section I, paragraphs 4-3 and 4-4c.

e. Pyrotechnic restrictions.

(1) Range Operations may issue pyrotechnic restrictions during windy or dry periods.

(2) Range Operations will inform units of the exact restrictions VIA radio communications.

(3) During these restrictions, Range Operations may allow units to use certain types of pyrotechnics. Contact Range Operations for information.

4-16. Riot Control Agents (RCAs)/Smoke.

a. Use of RCAs in training is limited to the 0-CS. All other RCAs are prohibited for training use.

b. Do not employ RCAs without the approval of Range Operations. Submit requests for use of RCAs at least 3 weeks prior to exercise.

c. Do not allow the effects of RCAs to leave Fort Sill or drift into the cantonment area. Limit the use of Chemical Smoke (CS) to 1,000 meters from the installation boundary and 500 meters from improved roads and built-up areas.

d. Unit commanders are encouraged to use good judgment and discretion when using RCAs or smoke devices in situations involving moving vehicles or aircraft.

e. RCA Unrestricted Use Area.

(1) Bounded by grids ND 3936, 4136, 4138, 4038, 4037, 3937, and 3936.

(2) Prior to employing RCAs and/or smoke at any location, including the RCA area, units will contact Range Operations to determine if any restrictions are in effect. Any RCA activity must be scheduled 3 weeks in advance.

(3) Conduct a reconnaissance prior to releasing RCAs within 200 meters of Blue Beaver Valley Road so that nonmilitary or nontactical personnel will not be affected.

Section IV
Ammunition

4-17. Prohibited Ammunition. The types of ammunition listed below are not authorized to be fired at Fort Sill. There may be several Department of Defense Identification Codes (DODIC) applicable for each type of ammunition.

MK19 Grenade Machine Gun HE ammunition
HELLFIRE missiles
STINGER missiles
PATRIOT missiles
Sub-munition-producing artillery projectiles
Excalibur
All MLRS/HIMARS munitions except Reduced Range Practice Rocket (RRPR) (DODIC H185)

4-18. Care and Handling.

a. The OIC/RSO/NCOIC of any exercise involving the use of ammunition will conduct an ammunition safety briefing prior to issue. At a minimum the briefing must cover--

(1) The dangers of ammunition tampering.

(2) The handling and firing ammunition.

(3) The proper storage.

(4) The steps to take in the event of an ammunition mishap.

b. Units will strictly adhere to directives in FM 6-50, DA Pam 385-64, TM 43-0001-28, AR/DA Pam 385-63, and the appropriate weapons operator's manual at all times at firing positions.

c. Units that bring their own ammunition or that have ammunition shipped in for their use must adhere to the following procedures:

(1) Ensure Fort Sill Ammunition Supply Point (ASP) inspects ammunition prior to its use.

(2) Ensure that the Fort Sill ASP has verified, in writing, that the ammunition has not been suspended or restricted from use.

(3) Provide the ASP with contact numbers so that it may contact the using unit in the event any ammunition lot is suspended for firing after its issue.

(4) Ensure artillery ammunition is cleared for overhead fire. If it is not, conduct special coordination through Range Operations.

d. Units must request approval to use nonstandard or foreign ammunition. The approval authority is the USAFCOEFS Commander.

4-19. Movement Requirements and Restrictions.

a. Transport and handle ammunition only under the direct supervision of personnel who are thoroughly familiar with safety regulations listed in AR/DA Pam 385-63, DA Pam 385-64, FM 5-25, and in TM's for specific weapons.

b. Use dunnage, blocking, and tie down straps in accordance with Fort Sill Regulation 385-10. Secure ammunition in such a manner as to prevent any movement.

c. Vehicle operators transporting or uploaded with explosives will adhere to the following:

(1) Display "EXPLOSIVES" signs on the front, rear, and each side as outlined in Fort Sill Reg 725-1. Cover or remove signs when vehicles are not carrying explosives.

(2) Meet regulatory requirements listed in AR/DA Pam 385-63, DA Pam 385-64, and in TMs for specific reference.

(3) Carry two working 10 BC-rated fire extinguishers. This requirement is satisfied by portable fire extinguishers on wheeled vehicles, or one portable extinguisher on tracked vehicles, provided the tracked vehicle is equipped with an operational internal fire extinguishing system.

d. Units desiring to carry troops and ammunition together in vehicles designated as prime movers for towed howitzers will verify that the ammunition is secured in such a manner as to prevent any movements (in accordance with DA Pam 385-64), and that troops are seated on seats designated for that purpose.

e. Draw ammunition from the Ammunition Supply Point (ASP) and transport it to a field staging area. The following rules apply to field staging areas:

(1) Locate ammunition outside the cantonment area, at least 400 meters from installation and cantonment area boundaries, and public traffic routes.

(2) Unit can set up ammunition on established firing positions.

f. Units may distribute ammunition according to the following rules:

(1) To tactical vehicles IAW TMs for that vehicle.

(2) Units may carry propellant and projectiles on firing vehicles designed for that purpose.

(3) Do not transport projectiles while fuzed except when issued as a fuzed round.

(4) Separate non-compatible components as much as possible.

g. Combat configuration is defined as the transportation of explosives and their components that are not of a compatible nature as listed in DA Pam 395-64. Units must adhere to the following while in combat configuration:

(1) Unit commanders may transport ammunition if the vehicle has been designed for the that purpose (e.g., M109 howitzer).

(2) Units may move on the following approved routes only.

Combat Configuration Movement Table
East to west and vice versa southeast on Punch Bowl Road to ND 539/387
East on gravel road to ND 545/386
North on tank trail to ND 547/391 crossing Apache Gate Road
East on road past Ennis Knob to ND 560/382 (Quinette Road intersection)
From Quinette Road intersection continue east on Quinette Road to East Range, and west on Quinette Road to ND 560/382
West on paved road past Ennis Knob to ND 547/391
Cross Apache Gate Road to tank trail and proceed south to ND 545/386
West on gravel road to ND 539/387
Northwest on Punch Bowl Road to West Range area
Anywhere along East Boundary Road

h. Units can transport ammunition in the cantonment area in standard configuration. Refer to Fort Sill Reg 385-10, for routes. Do not transport fuzed ammunition in the cantonment area.

4-20. Malfunctions, Disposal, and Usage Restrictions.

a. In the event of an ammunition malfunction or any significant weapon malfunction that causes a serious incident, the RSO/OIC will do the following:

(1) Suspend firing, place weapon in "Cease Fire Freeze."

(2) Ensure the weapon and/or ammunition involved remains intact.

(3) Contact Range Operations.

(4) Continue training when released by Range Operations.

b. Occasionally, units may experience malfunctions where the projectile fails to exit the tube. In the event of a "sticker," take the following actions:

(1) RSO will immediately call a check firing on that piece and notify Range Operations.

(2) Evacuate personnel.

(3) Personnel will not tamper with the weapon prior to the arrival of representatives from LRC.

(4) The LRC representative will determine what actions will be taken to clear the weapon.

(5) EOD will not attempt to extract the projectile until the LRC representative and commander approve.

c. Dispose of excess propellant as follows:

(1) A command safety certified officer/NCO (SSG or above) will supervise the training for disposal of propellant.

(2) Transport excess propellant to the powder burning area in a metal container on a cargo vehicle with a metal cargo bed, with explosive signs, and operational fire extinguishers.

(3) Do not transport other material, equipment, or passengers in the cargo bed with excess propellant.

(4) Authorized areas for powder burning are as follows:

EAST RANGE	WEST RANGE
ND 592396 (Dodge Hill)	ND 419375 (Blue Beaver) ND 537403 (Snow Ridge)

	ND 494349 (MOW-WAY)

(5) Units must check-in with Range Operations, identifying the unit, OIC, and location.

(6) Only one unit at a time is authorized to use a powder burning area.

(7) All vehicles will remain on the gravel road.

(8) Personnel and equipment (except a two-man burning detail) will be at least 50 feet from the burning site.

(9) Powder burning must be done in the center of the lane.

(10) There will be sufficient number of personnel standing by to utilize two shovels, four fire beaters, and ten gallons of water to control/extinguish the fire.

(11) Powder Burning during Pyrotechnic Restrictions

(a) Normally, powder burning is restricted during periods of pyrotechnic restrictions as follows:

	105MM	155MM
AMBER	18” X 50’	10 INCREMENTS
RED	18” X 50’	5 INCREMENTS
BLACK (The Fort Sill Fire Department must be on site with a crew and brush truck when burning any powder during a BLACK status. Units may request Fire Department support through Range Operations.	18” X 50’	5 INCREMENTS

(b) Range Operations may further restrict powder burning when surface winds exceed 18 knots (20.7 mph) or as other safety considerations warrant. Units will be informed of these restrictions upon check-in with Range Operations.

d. Upon completion of powder burn, units must accomplish the following prior to receiving check-out codes:

(1) Contact Range Operations to have the completion time recorded.

(2) Stay on site for 10 minutes after contacting Range Operations to ensure the fire is completely out.

(3) Request check-out codes upon completion of the 10 minutes.

Section V
Target Emplacement in Impact Areas

4-21. Coordination of Target Emplacement. Units requesting to emplace targets in the impact area must coordinate through Range Scheduling for date and times the impact area will be available. Once scheduled, the unit must coordinate further with the following agencies:

a. EOD support through 761st Ordnance Company, (EOD).

b. Survey Information Center, Range Operations, (survey support).

c. Range Support Section, Range Operations, (targets, inspection to verify for drainage of all POL, and removal of all reflective surfaces).

4-22. Procedures.

a. Unit will provide the necessary manpower to remove reflective surfaces, drain all fluids, and move targets to the impact area. Range Operations personnel must inspect targets prior to moving the targets to the impact area.

b. Unit will complete a risk assessment approved by the unit's brigade commander or director.

c. Unit will provide a medic or combat lifesaver with aid-bag while in the impact area.

d. All unit personnel must have helmet and flak vest when entering the impact area.

e. If using helicopters, the unit is responsible for coordinating air support.

Section VI
Range OIC and RSO Certification

4-23. Certification Process. Certification of range OICs and RSOs is an organizational command program that is supported by Range Operations. The certification consists of the following two parts:

a. Fort Sill Range Safety Brief. Briefings are conducted each Wednesday and Friday at 1300 in the Range Operations Classroom. This briefing is valid for 1 year. Individuals must sign the class roster to receive credit for attending the class.

b. Unit Certification. The content of the unit's range OIC and RSO certification program is established by the unit commander, but the program will include the following requirements at a minimum:

(1) Be able to load, unload, assemble and disassemble the weapons (40mm and below).

(2) Be able to safely fire the weapon.

(3) Know the weapon characteristics and safety considerations identified in the applicable technical and field manuals including misfire and troubleshooting procedures for the weapon.

(4) Know the ammunition authorized to be fired on the ranges to be used.

4-24. Grade Requirements. The table below lists the minimum grade required to be an OIC/RSO for each type of range.

WEAPON		OIC	RSO
CALFEX	Battalion or higher Combined Arms Live Fire Exercise	O4	E7
LFX	Company/Battery/Troop and below Collective Live Fire Range using organic weapon systems[Note: see paragraph 7-5 for additional requirements	E7	E6
MLRS/HIMARS	Multiple Launch Rocket System	E7	E6
HG	Hand Grenade (HE)	E7	E6
HGP	Hand Grenade (Practice)	E6	E5
NBC	NBC Chamber	E6	E5
9MM	Pistol	E6	E5
M16	Rifle	E6	E5
M4	M4 Carbine	E6	E5
M2	.50 Caliber Machine Gun	E6	E5
M60	7.62 mm Machine Gun	E6	E5
M240	7.62mm Machine Gun	E6	E5
M249	5.56 mm Squad Automatic Weapon	E6	E5
MK19	40mm Grenade Machine Gun	E7	E6
M203	40mm Grenade Launcher	E7	E6
AT4	Anti Tank Weapon (HE)	E7	E6
SUB	Sub Caliber AT4	E6	E5
MINE	M18 Claymore	E7	E6
TOW	TOW Guided missile	E7	E6
25MM	BFIST	E7	E6
DEMO	Demolitions	E7	E6
LASER	Laser	E6	E5
PYRO	Pyrotechnics/Simulators	E6	E5
105MM	105mm Cannon	E7	E6
155MM	155mm Cannon	E7	E6
60MM	60mm Mortar	E6	E5
81MM	81 mm Mortar	E6	E5
120MM	120mm Mortar	E6	E5
12 GA	12 Gauge Shotgun	E6	E5

4-25. Documentation.

a. Units will provide rosters of individuals certified as range OICs and RSOs to Range Operations. Safety certification rosters must be on hand at Range Operations prior to any unit conducting live fire training on Fort Sill. Units, without a certification roster on hand, are not allowed to live fire on Fort Sill. The roster must be signed by a commander of the grade O-5 or above, NCO Academy Commandant, or the director of an activity at the grade of O-5 or GS-14 or above. The roster is valid for one year or until the unit commander changes.

b. A sample Safety Certification Roster is at Figure 4-1. Use the following abbreviations from the “WEAPON” column of the table in paragraph 4-24 in the “Certified For” portion of the memorandum. Enter the last five digits of the individual’s Social Security Number in the ID# portion of the certification memorandum.

ATZR-ZX xx June xxxx

MEMORANDUM FOR RANGE CONTROL, DPTMS

SUBJECT: Safety Certification Roster

1. The following personnel of 1st Battalion, 11th Field Artillery, meet the safety certification requirements as specified in Fort Sill Reg 385-1, Safety Post Range Regulation, paragraph 9-1b, for the listed weapons ranges:

NAME	RANK	POSITION	ID#	UNIT	CERTIFIED FOR	EXPIRATION DATE
GIGIAN, Frank L.	CPT	OIC, RSO	56789	HHB	155MM, M16, HG	XX AUG XX
LAFONT, Lecu Z.	SFC	OIC, RSO	89012	HHB	DEMO, M16, 9MM	XX AUG XX

2. Point of contact is SFC Smoke, Assistant Noncommissioned Officer in Charge, Operations, 1-11 FA, 442-1234/5678.

IMA B. IGROCK
LTC, FA
Commanding

Figure **4-1**. Sample Safety Certification Roster

Section VII
Target System Operators

4-26. General. Units using ranges with automated target systems will provide their own targets system operators with the following exceptions:

a. Target system operators will be provided for units conducting a LFX under the provisions of paragraph 7-5 of this regulation.

b. Units may request that Range Operations provide target system operators for other ranges on a case-by-case basis; the operators would be provided on a cost-reimbursable status at overtime wage scale. The overtime must be approved by the DPTMS and funds provided before the training is conducted. The request for target system operators is submitted in RFMSS on the range request.

4-27. Target System Operator Training.

a. Training will be provided on the operation of Kerr Hill Machinegun (KHM), Automated Field Fire (AFF) and on Modified Record Fire 2 (MRF2). Training on KHM includes operation of the Combat Pistol Qualification Course (CPQC). Operators trained on the MRF2 may also operate MRF, NRETS and MRF3. Training will be provided for other ranges including Night Infiltration Course (NIC) and Fire and Movement Range (FMR) only upon request.

b. Operator certification is valid for one year.

c. Training classes will be conducted once each month; class dates will be posted on the Fort Sill Master Activities Calendar. Units may request additional classes as needed. There are five class seats for each range each week.

Chapter 5
MEDEVAC Procedures and Requests

5-1. Emergency Medical Service. Emergency medical service (ground or air medical evacuation) is available to units in the field only by contacting Range Operations. Units will not contact emergency medical services directly. Units may have to move injured personnel to an Ambulance Exchange Point (AXP) (designated by Range Operations).

5-2. MEDEVAC Procedures.

a. 9-Line MEDEVAC Request. To request MEDEVAC, call Range Operations on the range operations net, FM frequency 34.50 for the West Range (west of Highway 44) and frequency 38.50 for the East Range (east of Highway 44). Start the radio transmission with the words: “MEDEVAC, MEDEVAC, MEDEVAC.” Radio is the primary method to transmit the MEDEVAC request. The alternate means is telephone or cell phone.

MEDEVAC Frequency – West Range – FM 34.50

MEDEVAC Frequency – East Range – FM 38.50

MEDEVAC phone number at Range Operations – (580) 442-2008/2994

Some units communicate with Range Operations via hand-held Motorola radios. These radios are preset to the correct frequency. Units will not enter training areas unless they have radio communication with range control.

b. Once the words "MEDEVAC, MEDEVAC, MEDEVAC" are heard on the range control net, all other units will immediately go to radio listening silence. Radio listening silence will remain in effect until range control announces it is cancelled.

c. The following information will be transmitted in the 9 line format:

9 LINE MEDEVAC REQUEST		
LINE	**INFORMATION**	**Transmitted remarks/special instructions**
1	Location of pickup site (grid coordinates)	To preclude misunderstanding, include a statement that letters are included in the message
2	Radio frequency, call sign and suffix	Call sign and suffix of the person to be contacted at the pickup site.
3	Number of patients by precedence:	Brevity Codes: **A** (Urgent) – within 2 hours **B** (Urgent Surgical) – within 2 hours **C** (Priority) – within 4 hours **D** (Routine) – within 24 hours **E** (convenience)
4	Special equipment required (if you know of any special equipment needed for patient care)	Brevity Codes: **A** (None) **B** (Hoist) **C** (Extraction equipment) **D** (Ventilator)
5	Number of patients by type (litter/ambulatory)	Brevity Codes: **L** (Litter) **A** (Ambulatory)
6	Security of pickup site	Brevity Codes: **N** (No enemy troops in area) **P** (Possible enemy troops in area, approach with caution) **E** (Enemy troops in area, approach with Caution) **X** (Enemy troops in area, armed escort

		required)
7	Method of Marking Pickup Site (e.g., Panels, Smoke, Lights, etc.)	Brevity Codes: **A** (Panels) **B** (Pyrotechnic signal) **C** (Smoke signal) **D** (None) **E** (Other)
8	Patient's nationality and status (military/Civilian).	Brevity Codes: **A** (Military, U.S.) **B** (Civilian, U.S.) **C** (Military, non-U.S.) **D** (Civilian, non-U.S.) **E** (Enemy prisoner of war)
9	NBC contamination	Brevity Codes: **N** (Nuclear) **B** (Biological) **C** (Chemical) This line is included only when applicable

NOTE: Post a copy of this MEDEVAC request in every command post, range tower and with all RTOs. This message format must be easily accessible by all. Commanders will ensure that RTOs are trained on how to send a 9-Line MEDEVAC request.

d. Precedence definitions.

(1) URGENT – Evacuation is required as soon as possible but not later than 2 hours to save life, limb, or eyesight.

(2) PRIORITY – Evacuation is required within 4 hours or the patient's medical condition could deteriorate to an URGENT precedence.

(3) ROUTINE – Evacuation is required within 24 hours.

e. Patient Data. As soon as possible **after** transmitting the 9 line request, send the patient(s) last name and last four of the service number to Range Operations so medical records can be on hand at the hospital. If patient records are not located at Fort Sill, (i.e., patient is TDY, with a visiting unit, etc.) inform Range Operations. **Do not delay** the MEDEVAC request while determining patient data.

f. Communications. Range Operations will maintain communications with MEDEVAC aircraft and/or ambulances. Units will maintain communications at all times with Range Operations. Personnel conducting a ground evacuation will maintain communication with Range Operations during the evacuation.

g. Helicopter Landing Zones. The following helicopter landing zones (HLZs) are located near high risk training ranges. Range Operations has determined these locations by survey/GPS. At each of these ranges, a representative from Range Operations will issue VS-17/18 panels to the using unit and show them the location of the HLZ. For line 1 of the 9 line request, units may simply list the pickup location as HLZ one, for example. For all other training areas and ranges units will select HLZs. Units should select a 100 ft x 100 ft area for the HLZ that is clear of rocks and debris and is suitable for a helicopter take-offs and landing. Units will also report anything in the area that could be a danger to a helicopter (i.e., suspended wires). Units will report to Range Operations the grid location of their HLZ when they check in upon occupation of their training area/range/firing point. Brief landing zone obstructions, that are visible, to Range Operations after the 9-line has been completed and Range Operations has requested the helicopter.

HELICOPTER LANDING ZONES

HLZ	Training Area	Grid Coordinates	Latitude	Longitude
1	Wyatt Range Complex	ND 65331 37250	34° 40' 30.517"N	98° 17' 2.733"W
2	Infantry Squad Battle Course	ND 65661 36701	34° 40' 12.6"N	98° 16' 59.9"W
3	Live Fire Convoy	ND 62057 39202	34° 41' 34.617"N	98° 19'20.865"W
4	Hand Grenade Range	ND 58625 34671	34° 39' 8.258" N	98° 21'36.882"W
5	McKenzie Hill Complex	ND 45108 34683	34° 39' 1.374" N	98° 30'27.941"W
6	Urban Assault Course / Live Fire Shoothouse	ND 42107 34673	34° 39' 11.2" N	98° 32'25.8"W
7	Blue Beaver Moving Target / Scout Recce	ND 41737 37149	34° 40' 31.7" N	98° 32'39.9"W

h. Helicopter Landing Assistance.

(1) Day Landing. Units will mark HLZs with VS-17/18 or "Day Glow" panels. Units will ensure they are secured with large rocks or tent stakes to prevent them from entanglement in the rotor blades. In the event panels are not available, units may mark the HLZ with smoke. Employ smoke when the aircraft is visible. Do not employ smoke too soon as smoke will dissipate quickly. Panels are available at Range Operations.

(2) Night Landing. When light around the HLZ is not available, two vehicles can be placed approximately 100 feet apart and 100 feet downwind of the center of the landing point. The helicopter will approach into the wind and pass between the vehicles and land in the pool of light. See diagram. Remove antennas from all vehicles used to provide light.

(3) Approach. Approach the helicopter only if necessary and then only when the crew motions your forward. Approach the aircraft only at a 45 degree angle from the front. Never approach the rear of the aircraft.

i. The on site OIC/RSO must ensure that personnel evacuated for medical treatment do not possess weapons, ammunition, explosives or pyrotechnics.

5-3. Air/Ground MEDEVAC Decision.

a. Depending on where a unit is training on Fort Sill, it may be faster to conduct a ground evacuation for an URGENT casualty rather than wait on an air MEDEVAC. As a rule of thumb, if a casualty can be evacuated to Reynolds Army Community Hospital (RACH) by ground in 15 minutes or less, units should not wait on an air evacuation. If you deem the injury needs to go to an Emergency Room, Comanche County Memorial Hospital is the closest one.

b. If an accident/incident occurs in the area east of the 50 North-South gridline, south of the 40 east-West gridline and west of the 60 North-South gridline, then the unit should conduct a ground evacuation (see diagram). For URGENT patients, if low water crossings are impassable and the use of bridges is not possible, then the patient will be evacuated by air.

c. The nature of some injuries may warrant an air evacuation even though a ground evacuation may be faster (i.e., a back injury where the patient is stable and a ground transport would cause further injury). In these instances, the OIC/RSO should communicate circumstances to range control.

d. When a unit occupies a training area, range, or firing point, Range Operations will notify the unit if there are any conditions or events that may affect MEDEVAC operations (weather, road/route conditions/restrictions, status of Reynolds Army Community Hospital, etc.).

5-4. Ambulance Exchange Points.

a. For ground evacuation, Range Operations may direct units to evacuate a casualty with unit vehicles to an ambulance exchange point (AXP).

b. The following are Fort Sill AXPs:

AMBULANCE EXCHANGE POINTS				
AXP	**Location**	**Grid Coordinates**	**Latitude**	**Longitude**
Alpha	Peachtree Crossing	ND 56903 38830	34° 41' 23.620" N	98° 22' 43.521" W
Bravo	Hoyle Bridge	ND 57429 36712	34° 40' 14.759" N	98° 22' 23.367" W

Charlie	SGT David B. Bleak Troop Medical Clinic (Bldg 6039	ND 56917 35649	34° 39' 40.354" N	98° 22' 43.742" W
Delta	Pig Farm Crossing	ND 58185 33919	34° 38' 43.937" N	98° 21' 54.353" W
Echo	4 Mile Crossing	ND 50639 38470	34° 41' 13.119" N	98° 26' 49.784" W
Foxtrot	Mow-Way & McKenzie Hill RD	ND 49772 34652	34° 39' 9.329" N	98° 27' 24.667" W
Golf	Twin Gates (HWY 115)	ND 33702 34583	34° 39' 9.447" N	98° 37' 55.985" W
Hotel	White Wolf Crossing	ND 54524 38126	34° 41' 1.2" N	98° 24' 17.2" W
India	McKenzie and Blue Beaver Rd.	ND 41645 34592	34° 39' 8.7" N	98° 32' 43.9" W

5-5. Required Medical Personnel and Equipment.

a. Organic Medical Assets. Units are expected to use organic medical assets before requesting additional assets.

b. Ground Evacuation Vehicle. All units operating on Fort Sill range/training areas will have a designated ground evacuation vehicle. It will be solely used for that purpose. It must be prepared to conduct an evacuation at all times and will contain a radio that can be used to contact Range Operations during an evacuation.

c. Medical Personnel. All units conducting live fire training will have certified medical personnel (combat medics and combat lifesavers (CLS) on site. These personnel will be solely used for that purpose and will not actively participate in the live fire training.

d. Required Equipment. The following equipment will be maintained by every unit at each training site:

Item	Quantity
1 – CLS bag	1
2 – extra tourniquets	2
2 – Litters	2
6 – Litter straps	6
1 – C-collar	1
2 – Blankets	2
1 – Backboard	1**

1 – Head immobilizer	1

** - Backboards will be no more than 72 inches in length and will be no greater than 18 inches wide, and one end must be tapered. This will allow them to fit into local Civilian MEDEVAC aircraft, Fort Sill's current air MEDEVAC support. Backboards with two square ends will not fit in the contracted helicopter.

Chapter 6
Artillery Live Fire Procedures

Section I
All Artillery Units

6-1. Responsibilities.

a. Commanders/directors.

(1) Major subordinate commanders will establish procedures for qualifying and certifying personnel required to perform safety duties. Ensure range safety certification rosters are on hand at Range Operations, signed by the battalion commander/director/ commandant, and are updated at least annually, but preferably when changes occur. DPTMS or the Chief, Range Operations can decertify an OIC/RSO if he/she violates Fort Sill Reg 385-1. If an OIC/RSO is decertified for multiple violations, the next commander in the chain of command above the original certifying officer will verify the recertification. At a minimum, the following criteria must be met:

(a) Prior to certification, personnel will be mentally well and will demonstrate proficiency on this regulation and the weapon system to be used.

(b) Administer comprehensive, written, and hands-on examinations.

(c) Examinee must attain a passing score to be eligible for certification.

(2) Commanders/directors will designate personnel to perform the duties of OIC/RSO prior to firing exercises.

(3) The chain of command to which the Range Safety Officer is assigned will have complete responsibility for all aspects of firing and firing safety.

(4) Commanders/directors will investigate firing incidents after notifying Range Operations.

b. Range Safety Officer in Charge (OIC) for artillery units.

(1) The OIC will be present in each firing position when using the training area method or in a firing point which requires a separate Range Safety card for that particular firing point, which unit can obtain at Range Operations.

(2) During firing in support of TRADOC instruction, the RSO will coordinate all aspects of the school training with the instructor being supported.

(3) When TRADOC instructors are conducting an exercise on a range, the designated officer instructor will become the OIC and assume the safety responsibilities associated with that title.

(4) While live firing is in progress, limit the OIC's duties to those he/she can perform without leaving the firing position.

c. Range Safety Officer (RSO).

(1) RSO duties include, but are not limited to--

(a) Establishing an overall safety system within the firing position. RSO must be at the firing position at all times while in a wet status.

(b) Ensuring personnel required to perform safety checks are competent, properly briefed on their duties, and command certified by their unit.

(c) Enforcing compliance with this regulation.

(d) Assisting OIC in his/her duties.

(2) Before departing for the range, the RSO and safety personnel should understand, comply with and have on hand (in either printed or digital format with necessary viewing hardware and software) the following references:

(a) DA Pam 385-63.

(b) Fort Sill Reg 385-1.

(c) Fort Sill Reg 385-10.

(d) Any applicable ATPs, FMs, and TMs for the weapon system being used.

(3) The RSO will ensure the following equipment is on hand and in the field:

(a) Authorized Range Safety Card issued by Range Operations when firing from a firing point.

(b) Applicable TFTs.

(c) Properly functioning AFATDS with a secondary data check capability.

(d) Applicable GSTs.

(e) Current map of the area.

(f) Two properly functioning and declinated aiming circles (non-Paladin cannon unit only) or one Gun Laying and Positioning System (GLPS) and one aiming circle.

(g) Serviceable gunner's quadrant.

(4) Before firing, the RSO will conduct the following safety checks:

(a) Verify the Range Safety Card issued by Range Operations applies to his/her unit, exercise, and date, and confirm any pen-and-ink changes with Range Operations.

(b) Prepare the safety diagram. The RSO will possess all Range Safety Cards, safety diagrams, and safety Ts applicable to the firing for which he/she is responsible.

(c) Ensure all personnel performing safety duties and checks have copies of appropriate safety Ts.

(d) Verify personnel responsible for safety checks are command certified.

(e) Verify the guns/launchers are in the position specified on the Range Safety Card.

(f) Verify the azimuth of lay used to compute the safety diagram and lay the howitzers as dictated by the FDC.

(g) Verify the FDC has the Safety card/diagram and all no fire areas are plotted on the firing chart and map.

(h) Verify Wet check-in code has been obtained from Range Operations.

(i) Verify minimum quadrant elevation (min QE) determined by the executive officer/firing platoon commander.

(j) Compare the XO's Min QE for the minimum range to the Range Safety Card, using the larger of the two as the safe QE.

(k) Ensure that firing does not commence until rounds can be observed by a Forward Observer or electronically with RADAR.

(l) Brief observers to be alert for rounds out of impact and give Range Operations location if any DUDs are observed.

d. Platoon Leader and Platoon Sergeant. Platoon leaders and sergeants are responsible for--

(1) The general safety practices of the firing platoon.

(2) The professional competence of their personnel.

(3) The supervision of the safe firing of the battery, to include proper performance of safety duties by personnel and elimination of unsafe conditions.

e. Section Chiefs.

(1) Section Chiefs are responsible for safety checks required within his/her section to include checks of the weapon and ammunition, provided he/she is command certified.

(2) During firing, section chiefs will perform the following:

(a) Ensure rounds are fired above Min QE, below Max QE, inside lateral safe deflection limits, and with fuze settings at or above MIN Time, according to his/her safety T.

(b) Command “CHECKFIRING" and cite reasons when firing data is unsafe.

(c) Verify safety of weapon settings and crew actions prior to commanding "FIRE."

(d) Command "CHECKFIRING," if he/she observes any unsafe conditions.

(e) Report unsafe conditions to the chain of command.

(f) Suspend firing until all unsafe conditions are corrected.

(g) Verify the ammunition to be fired is the type specified on the Safety T.

f. Fire Direction Officer, to include Battery Operations Officer and Platoon Operations Officer.

(1) The Fire Direction Officer will--

(a) Verify the safety limits from the safety diagram

(b) Verify that all No Fire Areas are properly plotted on the firing charts or map.

(c) Ensure only safe fire commands are transmitted to the firing sections.

(d) Verify and apply either MET + VE or registration corrections to cannon artillery.

(e) Verify and apply MET to MLRS safety diagrams/T's.

(2) The Fire Direction Officer may be either a commissioned or noncommissioned officer.

g. Forward Observers. Units will assign personnel to perform the duties of forward observers when live rounds/rockets are to be fired. Responsibilities of personnel assigned as forward observers include--

(1) Ensuring they are checked in by the unit they are supporting.

(2) Maintaining communications with the element they are supporting. (They need not maintain communications with Range Operations.)

(3) Engaging only targets they are able to observe or unless radar is available to support the firing unit.

(4) Plotting all No Fire Areas and the safety limits of the unit they are supporting on a map.

(5) Engaging only targets contained within authorized safety limits.

(6) Calling checkfire and reporting any rounds unobserved or rounds observed out of target area. If a round impacts out of safety fan, announcing “Cease Fire Freeze” to the FDC who will contact Range Operations immediately.

(7) Reporting location of DUDs to FDC who will report them to Range Operations.

(8) Plotting all targets on his/her map prior to calling for fire.

(9) Being trained to observe impact locations/warhead events of rounds fired by the supporting unit.

(10) Being equipped with any necessary equipment to safely observe live rounds (e.g., NVGs for nightfire, etc.).

6-2. General Procedures/Information/Restrictions.

a. Administrative. Range Operations will prepare and issue Range Safety Cards for approved firing activities from firing points. Do not use ammunition, fuze, weapon, type of fire, or charge other than that authorized by the card.

b. Safety. Verify the accuracy of safety diagrams/safety Ts by independent computations. Firing position will include both sets of computed safety data.

c. Positioning/Survey.

(1) Unit OICs/RSOs will choose tactical firing positions which are at least 400 meters from the installation boundaries. Cannon units will also ensure that they account for Danger Area E (550 meters for 105mm, 725 meters for 155mm and 445 mils left and right of center) when emplacing near public traffic routes. Once a position has been chosen, use the unit's organic survey section to survey each position (not including Paladin or MLRS/HIMARS systems).

(2) Unit survey personnel will select a suitable location for the surveyed firing point.

(3) Survey personnel will use conventional survey techniques and/or position and azimuth determining system (PADS/IPADS) to provide an accurate location of the surveyed firing point.

(4) The Range Safety Officer will verify the location of the surveyed firing point SCP using one of the following methods:

(a) Resection.

(b) Graphic Resection.

(c) Precision Lightweight Global Positioning System Receiver/Defense Advanced GPS Receiver (DAGR) on Figure of Merit 1.

(d) Map spot within 100 meters of the surveyed firing point.

NOTE: Do not use Precision Lightweight Global Positioning System Receiver/Defense Advanced GPS Receiver to obtain or verify direction.

d. Observation of rounds.

(1) Units may use RADAR in lieu of, or in conjunction with, a forward observer when visual observation is limited or restricted. If used alone, the RADAR must operate

in the "Hostile Fire" mode and the time interval between rounds for multiple round missions will be no less than 30 seconds.

e. Surface Danger Areas (SDA).

(1) SDA D. Area for cannons, which is the “safe zone” within the surface danger zone where minimal hazards exist, provided certified ammunition for overhead fire is used (projectile, propellant, and fuze).

(2) SDA E.

(a) For cannon firing indirect fire, the area immediately in front of the piece bounded by the deflection limits expanded right and left by 445 mils and extending forward by 550 meters for a 105mm howitzer, and 725 meters for a 155mm howitzer.

(b) Personnel access to SDA E is prohibited. This does not apply to weapon crews firing from an approved tactical configuration.

(c) Artillery units will control access to all roads, which pass through their SDA E.

(3) SDA F.

(a) Area immediately to the rear of a rocket launcher, directly exposed to blast overpressure, fragments, and debris from rocket launch.

(b) Extends 350 meters to each side of the launcher and 400 meters to the rear.

(c) Personnel are prohibited from occupying Area F during firing.

(d) A noise hazard area extends an additional 300 meters past Area F and may only be occupied by mission essential personnel, wearing approved hearing protection.

(4) Exclusion Area I (MLRS).

(a) 1000 meter area that extends forward of the launcher.

(b) Personnel are endangered, by failure of the rocket motor, during boost phase.

(5) Exclusion Area II (MLRS).

(a) Area from the uprange side of the impact area back to exclusion area I.

(b) Occupation of exclusion area II, by unprotected individuals, is authorized only by deviation.

f. No Fire Areas (NFA).

(1) Permanent NFAs are as follows:

PERMANENT NO FIRE AREAS		
RADIUS	**NFA DESCRIPTION**	**GRID LOCATION**
250m	West Lake Dam	ND 4542/3775
200m	Blockhouse Signal Mountain	ND 4667/3705
500m	Elgin Tank	ND 64**05**/450**0**
500m	I-See-O-Tank	ND 6280/4050
N/A	Kerr Hill Machinegun Range	West Range Impact Area west of grid 45 and South of 37
N/A	Modified Record Fire West	West Range Impact Area east of grid 49 and North of the 37
N/A	Davy Crockett Area	West Range Impact Area east of grid 48 and South of the 37

g. Impact Area Target Areas. All rounds fired on Fort Sill must impact inside one of the following target areas unless the unit has made prior coordination with Range Operations and received a Range Safety Card that allows them an exception. These target areas account for all secondary danger areas and probable errors.

West Range Target Area		**North Arbuckle Target Area**		**South Arbuckle Target Area**	
A. ND 434/399	E. ND 459/367	J. ND 630/437	L. ND 630/414	P. ND 634/363	S. ND 617/375
B. ND 454/402	F. ND 447/362	K. ND 635/434	M. ND 619/421	Q. ND 608/363	T. ND 634/375
C. ND 480/390	G. ND 438/363			R. ND 612/372	
D. ND 480/369	H. ND 435/372				

h. Direct Fire Exercises (cannon only).

(1) When direct fire is employed, use the safety limits, taken from the range safety card, to compute low angle safety data. RSOs will construct a safety T to give to the section chiefs.

(2) Lay howitzers out using orienting angle, grid azimuth, or simultaneous observation methods orienting an M-2 aiming circle. Verify the azimuth of fire IAW Para 5-4c(3).

(3) Mark howitzers with deflection limits using tape, chalk, or safety markers for SP howitzers and stakes for towed howitzers.

(4) For range, even though firing is conducted with the use of the range scale in the direct fire telescope, the chief of section must verify the elevation with gunner's quadrant.

i. Clearance procedures. Upon completion of training, the unit commander will ensure the following actions are completed prior to clearing the range:

(1) Conduct a thorough police of the range training facility and ensure no debris is left in the area. Do not bury or discard garbage and trash, accumulated by units bivouacked, on the range.

(2) Fill and level weapon spade holes, foxholes, slit trenches, sumps, etc.

(3) Report destroyed, damaged, or missing firing point markers and orienting stations to Range Operations.

(4) Units receive all check-out codes.

j. Restrictions.

(1) Firing unfuzed projectiles on any Fort Sill range is prohibited.

(2) DA Pam 385-63, chapter 11, discusses ammunition clearance for overhead fire. When personnel occupy any part of surface danger Area D, use only lots of ammunition cleared for overhead fire. Most firing positions at Fort Sill require the use of ammunition cleared for overhead fire. Clearly mark ammunition requisitions "For Overhead Fire" whenever personnel may be in Surface Danger Area D.

(3) Do not use RAP for overhead fire.

(4) If ammunition is not cleared for overhead fire, block roads IAW paragraph 4-10.f of this regulation, and tank trails passing under the trajectory of artillery ammunition and remove personnel from Area D before firing commences.

(5) Artillery ammunition used in training exercises involving overhead firing in close support of ground troops by overhead or flanking fire will be from the same lot number for each exercise. If you must change lot numbers, complete a Registration with the new lot prior to firing overhead of unprotected troops.

(6) Precutting of powder charges is not authorized except for controlling demonstrations where a registration has been conducted or for training in preplanned fire missions (Fire Plan, Time On Target, Priority Targets).

(7) Presetting of time fuzes is not authorized unless the ASP issues time fuzes in lieu of PD except for Preplanned Fire Plans. The commander may then authorize time fuzes to be preset to PD action (i.e., M564 must be set at 90.0).

(8) Never leave ammunition and/or residue powder increments unattended.

Section II
Cannon Units without Automated Fire Control Systems

6-3. Responsibilities.

a. Commanders will adhere to responsibilities as outlined IAW chapter 6 .

b. RSO (IAW chapter 6, section I).

c. Platoon Leader / Sergeant (IAW chapter 6, section I).

d. FDO (IAW chapter 6, section I).

e. Section Chiefs will perform the following duties prior to live fire:

(1) Record lay data on gunner’s reference cards.

(2) Ensure he/she has the proper safety T's for that firing position.

(3) Assist the RSO in accomplishing the following actions before firing:

(a) Verify the proper positioning of the aiming posts, collimator, or aiming point in reference to the referred deflection by sighting through the weapon sight.

(b) Verify boresight of each weapon after each change of firing position.

(c) Verify the sight settings (to include slipping azimuth scale).

(4) Verify the azimuth of lay for his/her howitzer by means of a compass.

(5) Fire only authorized, serviceable rounds of ammunition. (If there is any doubt whether a particular type round is authorized, he/she will check with the RSO before allowing the type round in question to be loaded and fired.)

(6) Confirm the proper charge increments for each type round are present before the round is prepared for firing.

(7) Once the round is prepared, verify the placement of the correct number and type of charge increments in the powder chamber before firing the howitzer.

(8) Prior to live firing into Quanah Special Effects Impact Area, conduct direct coordination with Falcon Range 442-6300, to ensure range is clear.

6-4. Requirements/Procedures.

a. Cannon units may use either the "Training Area Method" or the "Firing Point Method" to shoot on Fort Sill

b. Guidelines for Firing Point Method of Safety are as follows:

(1) Each firing position will have a designated position center, battery center or center howitzer. Use this point to initiate safety data computations.

(2) Safety Ts constructed, using this data, are valid for howitzers within a 200-meter radius.

(3) Compute a separate safety T on howitzers outside of the 200-meter radius of the position center or gun only when manual fire direction methods are used and TGPCs are not applied.

NOTE: SDAs, computed and constructed by Range Operations personnel, already include piece displacement factors.

c. To verify Azimuth of Lay (AOL) do the following:

(1) Use a second aiming circle.

(2) Set up the second aiming circle (safety circle), at least 10 meters from the lay circle.

(3) Use any approved method (ATP 3-09.50) to orientate the safety circle other than the one used to orient the lay circle.

(4) Allow +/-10 mils between the lay circle and the safety circle.

(5) Use +/- 2 mils tolerance between the safety circle and the gun.

d. Make initial targets visible and in the central portion of the safety fan prior to registration or application of MET + VE. This is to verify the location and lay of the weapon. Complete the verification and select a registration point as close to central

portion of the safety fan as possible. After the registration, apply registration corrections to time, deflection, and quadrant limits. Units may fire a MET + VE check round in place of a registration.

e. The Officer/NCO responsible for the operation of the FDC will have the following on his/her firing charts:

(1) Safety limits specified by the Range Safety Card.

(2) Lateral azimuth limits.

(3) Minimum and maximum ranges (to include doglegs).

(4) Any permanent or temporary no fire areas (NFAs).

f. To compute or verify safety data do the following:

(1) The position safety officer will use a range deflection protractor to construct a safety box within the target area, after the target area, and position center is plotted.

(2) Unit safety personnel are encouraged to use as much of the target area as possible and construct safety boxes that contain doglegs.

(3) Each firing position will have a firing chart or a mounted 1:50,000 Fort Sill map with the appropriate target area plotted on it.

(4) The RSO will verify that the safety box is contained within the specified target area.

(5) To construct a basic safety diagram, for safety computations, extract the following information from the constructed safety box:

(a) Left azimuth limit.

(b) Right azimuth limit.

(c) Minimum range.

(d) Maximum range.

(e) Azimuth of lay.

g. Obtain the following information from the Fort Sill 1:50,000 Range Map:

(1) Altitude of the firing position.

(2) Maximum altitude at minimum range.

(3) Minimum altitude at maximum.

h. Use information contained on the card to obtain MIN QE or the Firing Point Method, only when issued a Range Safety Card from Range Operations.

i. OIC and RSO will fire the first round from a new firing position as close to the center of the target area as observation allows.

j. Unit survey personnel and the RSO will decide on a suitable location for the orienting station.

k. Survey personnel will use conventional survey techniques and/or position and azimuth determining systems (PADS/IPADS) to provide an accurate location of the ORSTA and azimuth to the EOL for each position.

Section III
Cannon Units with Automated Fire Control Systems

6-5. Responsibilities.

a. Commanders will adhere to responsibilities as outlined IAW chapter 6-1.

b. One unit RSO is required per training area, provided that all howitzers in the training area are operating under one FDC. The RSO may also perform the duties of the platoon leader, platoon sergeant, or fire direction officer. The RSO must--

(1) Be physically present within the training area or area of operation which includes--

(a) Any of the weapon locations.

(b) The Fire Direction Center (FDC).

(c) The Platoon Operations Center (POC).

(2) Be command safety certified on the weapon system.

(3) Ensure that all safety requirements are met.

(4) Verify the location of the SCP selected by himself/herself, battery commander, sergeant first class, or unit survey team.

(5) Draw the sector of fire on the chart/map (brigade/division boundaries are equal to and represent the weapon’s right, left, minimum, and maximum safety limits).

(6) Ensure Safety T's are on the howitzers for illumination to include the following:

(a) Left Limit.

(b) Right Limit.

(c) MIN QE.

(d) MAX QE.

(e) MIN TI.

NOTE: MIN QE will be the higher of 267 mils, or XO's MIN QE when data is computed using the Training Area Method.

c. Prior to live fire, a safety certified person, Sergeant First Class or above, must verify, at a minimum, the following:

(1) Automated Fire Control System database input for each gun section.

(2) Initialization grid (taken from a SCP).

(3) Internal communications in the gun.

(4) Direction.

(5) Fire control alignment test data (confidence check).

(6) Dry fire verification mission.

d. Follow the procedures for occupation as outlined in unit SOP and the ATP 3-09.50 or FM 3-09.70.

e. Duties of the Fire Direction Officer (FDO) in a Unit with Automated Fire Control Systems include--

(1) Ensuring that the FDC Chief and he/she are safety certified

(2) Conducting a dry fire verification mission to a target, in the impact area, whenever there is a major change in the data base gun or FDC. Use only authorized charge and shell/fuze combinations for the dry-fire verification.

(3) Comparing the Automated Fire Control System and the Lightweight Computer Unit/Battery Computer System data to ensure the computed data is within the following tolerances:

Verification Mission Tolerances	
Deflection	2 mil
Quadrant	2 mil
Fuze TI	0.1 sec
Fuze VT	1.0 increment

(4) Constructing firing charts IAW para 6-5b(5).

(5) Computing safety and issue Safety Ts for Shell Illumination IAW para 6-5b(6) of this regulation.

(6) Computing safety with box safety IAW ATP 3-09.50 or FM 3-09.70

6-6. Requirements/Procedures.

a. Units with Automated Fire Control Systems will use only the training area method to tactically occupy and fire from locations within a scheduled training area. A position area can have up to a 750 meter radius.

b. Ammunition requirements specific to the Paladin System are as follows:

(1) Paladin units may travel with fuzed ammunition on the howitzer (only HE/PD-M557 and M739 fuzes) when the onboard fire extinguisher system is operational.

(2) Only the M557 and M739 series fuzes may be prefuzed. Do not mate Mechanical Time, Mechanical Time Super Quick, and Variable Time fuzes to projectiles.

c. Degraded operations are as follows:

(1) An operational Paladin will be the laying piece or any authorized procedure as outlined in ATP 3-09.50 or FM 3-09.70.

(2) An Aiming Circle will be the safety circle.

Section IV
MLRS/HIMARS Units

6-7. Responsibilities.

a. Commanders will adhere to responsibilities as outlined IAW chapter 6, section I.

b. Range safety officer (RSO) will adhere to responsibilities as outlined IAW chapter 6, section I.

c. Duties of the platoon leader/sergeant are as follows:

(1) Ensure launchers are given the current Safety “T”.

(2) Ensure personnel understand and follow the correct procedures for conducting a live fire.

(3) Check and record the lot number of the launch pod container (LPC).

(4) Enforce safety policies and procedures established by DA Pam 385-63 and post regulations.

(5) Check to ensure launchers are properly initialized, GPS keys are loaded and launcher is tracking GPS. If launcher is not tracking GPS, ensure launcher is updated with correct location using approved GPS system.

d. Duties of the launcher chief are as follows:

(1) Ensure that all procedures in the launcher are conducted IAW applicable technical manuals.

(2) Verify launcher is properly initialized, GPS keys are loaded and launcher is tracking GPS. If launcher is not tracking GPS, ensure launcher is updated with correct location using Defense Advanced GPS Receiver (DAGR) or other approved GPS.

(3) Check and verify and record, LPC lot number and that the proper data, according to the lot number is entered.

(4) Receive all instructions and firing commands from the controlling FDC.

(5) Verify launcher-firing position within the designated firing area with Fire Control System, DAGR or map spot.

(6) Check firing data to determine if the launcher is laid and safe with the current safety “T”.

(7) Ensure current meteorological (MET) message is used.

(8) Record all missions on a launcher fire mission log (DA 7233) and provide this log to the controlling FDC after firing.

(9) Verify all data prior to arming and firing the launcher.

e. Duties of the Battery Fire Direction Center personnel are as follows:

(1) The battery operations officer will perform the following:

(a) Verify the computation of safety data/Safety-T's.

(b) Ensure the FDC has all safety data displayed properly in the battery and platoon FDCs.

(c) Review validity of MET and check that all launchers have valid MET, firing position and target locations.

(d) Direct the execution of all fire missions.

(e) Ensure copies of the AFATDS printout, launcher fire mission logs (DA 7233) and FDC fire mission logs (DA 7232) are maintained on all data pertaining to the live fire exercise IAW AR 25-400-2.

(2) The controlling FDC chief will do the following:

(a) Ensure AFATDS with operational printer is present.

(b) Print out all incoming and outgoing messages/data.

(c) Verify set up and operation of the AFATDS LCU.

(d) Verify all data sent to and received from the launchers is safe and correct.

(e) Ensure data received by the launchers is within applicable safety parameters.

f. OIC/FDO will-

(1) Ensure data is computed using current MET and distributed to all launchers.

(2) Request firing safety limits from Range Operations.

(3) Maintain communications with Range Operations, and monitor check-in and check-out codes for firing units.

(4) Ensure all Safety of Use Messages are on hand prior to the live fire exercise.

(5) Coordinate observation post locations with Range Operations.

(6) Prior to live firing into or out of Quanah Range, conduct direct coordination with Falcon Range, 442-6300, to ensure the range is clear.

6-8. Requirements/Procedures for Live Fire.

a. General. Any organization conducting live fire into or out of Quanah Range, must coordinate their activities with Falcon Range personnel at 442-6300 prior to their training date(s). You must establish an LNO at Falcon Range on the day of the live fire event. This requirement is to ensure there will not be a safety conflict between U.S. Air Force activities and Fort Sill artillery units. Quanah Range LNOs must have communication with their firing batteries in order to issue check fires or to ensure that simultaneous aircraft/artillery operations can be safely accomplished.

(1) Units will not live fire without proper “wet” check-in code from Range Operations.

(2) Units must establish SCPs for updates.

(3) Units must verify that SCPs are valid. Graphical resection or map spot methods may be used to verify the SCPs. Personnel may use a DAGR only when the position error reading is +/- 20 meters, or when operating at a Figure of Merit (FOM) 1.

(4) Loss of communications during live fire operations requires the unit to place themselves in a "dry" status until communications are reestablished.

(5) Units will provide sufficient detail personnel to serve as a firefighting team. The team will have an NCOIC, vehicle with radio, and sufficient firefighting equipment (to include five gallon water cans).

b. MLRS/HIMARS Live Firing Safety.

(1) Range Safety Cards issued by Range Operations contain the following specific information for all MLRS/HIMARS live fires:

(a) Specific rocket to be fired from that location (e.g., RRPR, etc.).

(b) Unit, firing point, training area, dates & times for which the safety card is valid.

(c) Road guard requirements (number & locations).

(d) OPAREA/firing point boundaries.

(e) Target area (a.k.a. Target Selection Box in TC 3-09.8 in which all rounds must be observed.

(f) Any additional instructions necessary to fire from that area/firing point.

(2) Target areas issued on the Range Safety Card are equivalent to the refined Target Selection Box in the ATP 3-09.8 or TC3-09.8. As such, these areas need no further refinement and are used to compute safety and construct Safety-Ts.

(3) The following are the three methods for computing live fire safety for the MLRS:

(a) Point-to-Point. Safety T tolerances between check systems used to construct safety Ts for the Point-to-Point Method are as follows:

AZ & QE	+/-5 MILS

(b) OPAREA.

(c) Firing Point.

**Note: LLM will not be stowed until the observer reports “Round Observed Safe”

Chapter 7
Non-Artillery Live Fire Procedures

7-1. General Situations.

a. Units desiring to train on special situations must contact Range Scheduling for approval.

b. Units firing small arms and crew served weapons from firing points will obtain a Range Safety Card with instructions applicable to the specific weapon system from Range Scheduling.

c. Personnel concerned with operating a small arms range will familiarize themselves with this regulation, AR/DA Pam 385-63, and appropriate FMs and TMs pertaining to weapons being fired. The OIC/RSO must be command safety certified and have received a current annual range safety briefing from Range Operations. The OIC/RSO must remain on the range until completion of live fire and receipt of a check out code from Range Operations.

d. Units must check in to all ranges and maintain communications with Range Operations IAW chapter 3 of this regulation.

e. Fly the scarlet range flag, at the appropriate range, before any firing is conducted.

f. Personnel firing, instructing, or observing training on a range firing machine guns, grenades, grenade launchers, or rocket launchers range will wear an Army issued or approved helmet on the firing line. The firing line starts 10 feet behind the firing positions. PPE1 will be used for hand grenades and grenade launchers.

g. Personnel on firing lines will wear hearing protection and eye protection when firing is in progress.

h. Using units will police range after use (includes latrines and target houses).

i. OIC is responsible for inspecting troops to ensure that individuals do not remove brass or ammunition from the range. The unit will collect and return expended brass and packing materials (clips, bandoleers, and packing boxes) to Ammunition Supply Point (ASP).

7-2. Mortars.

a. Mortars will shoot only from established Fort Sill firing positions unless special requests are made through Range Scheduling and survey is available.

b. RSO requirements (paragraph 6-1) apply when firing mortars.

c. Safety data is computed in a similar manner as artillery. The range safety card for mortars will specify the following:

(1) Minimum and maximum range.

(2) Minimum and maximum charge.

(3) Left and right azimuth limits.

d. Modify deflection limits for mortars as in high angle fire, except move the left deflection limit left by the amount of drift corresponding to minimum charge and lowest elevation to be fired (minimum drift). Move the right deflection limit left by the amount of drift corresponding to maximum charge and highest elevation to be fired (maximum drift).

e. Mortar units may direct lay, but must compute safety data. They may lay with M-2 aiming circle, and place azimuth and deflection limit stakes so that acquired targets are in prescribed safety limits for that mortar point.

7-3. Mines and Explosive Charges. This paragraph prescribes general procedures for handling and detonating explosives, mines, and firing devices. It does not apply to projectiles, bombs, or fuzes.

a. Except for EOD operations conducted by the 761 Ordinance Company, demolitions operations OICs must be a SFC or above. The OIC and RSO must be on a current certification roster at Range Operations and must be present at each shot. Duties of the OIC for demolitions are as follows:

(1) Supervise the preparation, placement, and firing of charges for a demolition project.

(2) Verify connections are inspected before firing.

(3) Ensure no detonations will take place within 300 meters of the St. Louis-San Francisco Railroad (vicinity North Arbuckle and Beef Creek areas on East Range) or any main or secondary road unless road guards are posted and traffic is halted.

(4) Be familiar with the requirements in DA Pam 385-63, for detonation, mines, firing devices, trip flares, simulators, and explosive charges, prior to the exercise.

(5) Ensure safety restrictions and distances listed on the Safety Card (must be at demo site) are followed.

(6) Ensure demolition training operations are discontinued during or on the approach of an electrical or severe dust storm.

(7) Ensure charges are placed in the center of specifically prepared firing pits.

(8) Detonate charges from a position that allows a clear view of the pit and the immediate vicinity.

(9) Ensure only one charge is placed and fired in a pit at one time.

(10) Ensure the overpressure (blast effect) caused by the explosion does not exceed 2-lbs/sq inch where personnel are located unless appropriate hearing protection is worn. This will be calculated by using the cube root formula in DA Pam 385-1 Chapter 15, 15-1 h. (2).

(11) Ensure charges placed on steel do not exceed two pounds and are fired within an appropriate confining structure with an excavated pit at least 1 meter deep.

(12) Ensure charges placed on concrete do not exceed forty pounds and are placed on the side nearest to the observers.

b. Firing shaped charges.

(1) Position shaped charges to direct the gas jet toward the target and when practicable, place on the side of the target nearest the observers.

(2) Observers will be at least 275 meters from the charge and in defilade, or at least 100 meters if in a missile proof shelter.

c. Firing cratering charges.

(1) Maximum charge to be fired in training will not exceed 320 lbs.

(2) Charges are detonated on soil free from gravel, rock, metal or other possible missiles to a depth of at least 6 inches.

(3) Provide a sandbag barricade of at least 1 meter above surrounding level ground between location of charge and personnel.

(4) Transmit the following information to Range Operations prior to firing:

SHAPED CHARGE PREFIRING REPORT	
1	Type of charge to be fired.
2	Size of charge to be fired.
3	Location of detonation.
4	Expected time of detonation.

(5) Transmit the following information to Range Operations at the completion of firing:

SHAPED CHARGE P0ST-FIRING REPORT	
1	Notify Range Operations that "Detonation is complete."
2	Notify Range Operations with DODIC

7-4. Direct Fire with Tank Main Gun. Range Operations will approve tank firing as required.

7-5. Live Fire Exercises.

a. LFXs are an integral part of maintaining combat readiness. Thorough planning and coordination are essential to the development of these exercises, just as they are for real-world missions. LFX certification is a Brigade Commander's program. If unit leaders are not properly trained, resources are wasted and death or injury may occur. Leaders will train safely and realistically. To attain the highest level of realism in training, graduated degrees of complexity will be integrated into training scenarios and LFX execution. Leaders must ensure the safety of our Soldiers through risk mitigation during training, which is a reflection of our plan to preserve combat power in combat.

b. Definitions.

(1) Static Range LFX. Static ranges are defined as ranges that have a fixed firing line, do not involve maneuver, and involve no movement forward of firing line/firers once firing begins. Static ranges are typically used for qualification/marksmanship, ambushes (minus the assault phase), defensive LFXs, and also include demolition areas and indirect firing points. If the training scenario includes movement from one static firing position to another static position, then the training event is considered a Maneuver Range LFX.

(2) Maneuver Range LFX. To achieve realistic training, ranges at Fort Sill are designed to involve the complex conduct of fire and movement to include movement to contact, react to contact, attack, and ambushes that require troops to move forward of an administrative firing line. For a maneuver LFX, units must conduct a range walk with Range Operations, leaders' certification, and a day and night blank fire with all personnel prior to execution of a day and night live fire. If a Soldier or unit is required to move in front of the firing line (emplace Claymore or demolition, search objective, etc), all other Soldiers will immediately place their weapons on safe and firing will not begin

again until leaders and safeties have accounted for all Soldiers. All blank and live night maneuver LFXs will be conducted utilizing all night vision devices (NVD) available to the unit (NVGs, PAQ-4s, PEQ-2/15s, PAS-13s, etc). Maneuver ranges require 30 days prior coordination with Range Specialists (see paragraph 7-5.c. for additional guidance). Unit Commanders will ensure Soldiers have zeroed and qualified on their assigned weapon systems to include vision enhancing devices with bore-scoped aiming lights prior to the Soldiers participating in any LFX. Unit Commanders will ensure the Soldiers understand they will not engage any target they cannot positively identify.

(3) Combined Arms Maneuver Range LFX. This training includes integration of organic indirect fires, Army Aviation, and Joint Close Air Support Systems with ground maneuver elements. Complexity increases with the integration of organic indirect fires with ground maneuver and increases further by the addition of any aerial element, to include small and tactical unmanned aerial vehicles. Each element requires additional integration and deconfliction in the training and execution planning phase as it does when incorporating these elements to ground combat operations.

(4) Advanced marksmanship training events that involve controlled engagements while moving forward are not considered maneuver ranges if control measures are in place to keep the firing line moving forward together. These procedures and restrictions for these training events are contained in paragraph 7-1 of this regulation. Examples of these training events include those identified in Section II and Section IV of Chapter 7, Advanced Rifle Marksmanship of FM 3–22.9, Rifle Marksmanship M16A1, M16A2/3, M16A4, and M4 Carbine.

c. Range Approval Process. Need to specify Maneuver range LFX or CALFEX. The full packet is not needed for static ranges.

(1) Unit will submit a LFX range packet to Range Operations NLT 30 days prior to the live fire event. LFX packets will include, at a minimum, training scenarios including OPORDs, SDZ overlays, a complete listing of weapons and ammunition and a draft Deliberate Risk Management Worksheet (DD Form 2977). Additional instructions to be considered when preparing an LFX range packet are listed in paragraph 7-5.f.

(2) NLT 21 days prior to live fire, the OIC and RSO will conduct a range walk with Range Operations personnel. This range walk will identify SDZs, schemes of maneuver, and other issues. The joint range walk with Range Operations confirms that the unit's plan conforms to appropriate Army and Fort Sill regulations, policies, and procedures. At the completion of the joint range walk, Range Operations will either approve the training plan or identify required changes to the unit. (Note: A range walk is different from a certification walk by the approving commander. A range walk is conducted to determine if the plan is allowed by regulations and to express the limits of the range. A certification walk is conducted by the approving commander and the OIC/RSOs to determine if their plan conforms to his/her intent.) All personnel who are to serve as range OICs, RSOs and target system operators will be present for the entire range walk.

d. Command Certification.

(1) Prior to the conduct of a maneuver LFX, the command approving authority (see table below), company/battery commander(s), range OICs, and RSOs will all participate in a command certification of the range. For a Combined Arms Live Fire Exercise (CALFEX), the command certification will include the artillery, engineer, and aviation representatives integrated with the maneuver element commander. The command certification will cover the concept of operation for the live fire, range constraints, and limitations, direct and indirect fire plan, targetry, observer controller (OC) coverage, safety procedures, and the unit's training objective. Hand off of ranges between units is authorized only if all of the responsible leaders were present during the command certification.

Live Fire Exercise Certification Authority

Maneuver Unit Size	Command Approving Authority
Battalion	First General Officer in the chain of command
Company	Brigade Commander
Platoon	Battalion Commander
Squad/Section and below	Battalion Commander

(2) The commander of a unit executing a non-standard scenario or performing tasks not typically consistent with their established METL will be certified for execution by the next higher command authorized to train and perform such tasks. Subject Matter Experts (SMEs) will be used to help train, evaluate, and oversee those tasks not consistent with the unit's primary METL.

(3) As part of the certification, the approving commander will review the written safety briefing for the range based on the DD Form 2977, Composite Risk Management Worksheet, prepared for the scenario approved for conduct on that range. Maneuver live tire ranges are a high risk operation and only through thorough risk mitigation down to individual Soldier level can the inherent risk be reduced to medium. The risk management worksheet prepared for range LFXs must address all known hazards by Mission Essential Task List (METL) task.

e. Live Fire Execution.

(1) Standard Training Sequence. Commanders preparing their units for LFXs will utilize a Talk (issue the plan), Crawl (key leader walk-through), Walk (blank fire), and Run (LFX) approach. This concept requires units to familiarize key leaders with the live fire range and then conduct a series of blank fire rehearsals under the same conditions the unit will experience during live fire iterations prior to conducting the culminating LFX. The requirement to conduct blank fires under the same conditions of the LFX requires units to conduct a Day-Blank Fire iterations prior to a Day-Live Fire

iteration (a daylight rehearsal does not qualify a unit to conduct a night LFX). Similarly, units planning to conduct Night Live Fire iterations must first conduct a Night Blank Fire iteration. The normal sequence for live fire training includes a Day-Blank Fire until the unit commander deems the unit is prepared to advance to Day-Live Fire and Night-Blank Fire until the unit commander deems the unit is prepared to advance to Night-Live Fire. All LFXs will consist of all four separate phases. Every phase will conclude with an AAR. Additional discussion of the phases of LFX training are outlined below:

(a) Talk-Issue the plan and train the range support personnel. When virtual terrain exists, units will execute a virtual rehearsal at both the key leader and unit level.

(b) Crawl-Key Leader Rehearsal. This is normally done on the LFX objective. Unit leadership will conduct a rehearsal on the objective until the chain of command and RSO are satisfied the unit is prepared to conduct blank fire training. The walk through will ensure key leaders and safeties fully understand the unit's tactical plan, the standards for the conduct of the tactical tasks, and range safety limits, including range SDZs and other safety requirements.

(c) Walk-Blank or CCMCK Fire. This is normally done on the LFX objective. Conduct blank or CCMCK fire iteration under the same conditions as the live fire scenario, including the ground tactical maneuver plan, personnel participation, target array, and visibility. When available at the range, units should employ an after action review system in order to allow a thorough AAR of a unit's scheme of maneuver and fire control and distribution plans. Units must conduct blank fire iterations before both day and night live-fire iterations. Commanders will continue to conduct blank fire iterations until fully satisfied a unit is prepared to conduct either a day or night-live fire. Commanders will strive to incorporate as many battlefield effects as possible. All blank fires must precede live fire iterations by not more than 24 hours to ensure Soldier familiarity with scenario and sequence. As stated above, live fires are conducted under the same conditions of the blank fire. Changes in unit leadership, task organization, or the introduction of a new Soldier between blank and live iterations require the unit to conduct additional validation blank fire iterations. As in combat, when the conditions change, the unit must mitigate the newly identified risk.

(d) Run-LFX. This is the culminating event. Employ all battlefield effects and visual target feedback (using automated or falling/reacting targets, balloons, etc.) to create the most realistic environment and provide the maximum training benefit possible; however, dud-producing indirect fire munitions will not be employed on objectives to be cleared by a maneuver force.

(2) Command Presence. The chain of command is responsible for the safe conduct of range operations and all leaders will act as safety officers. Commanders are the senior safety officers for LFXs. Commanders may not delegate this responsibility. Indicated below is the Command presence required at various LFX echelons.

Live Fire Exercise Command Presence Requirements

Unit Size	Command Presence
Battalion (2 or more companies with battalion command and control (C2))	Brigade Commander will be present on the range and supervising execution. No deviations authorized.
Company (2 or more platoons with company C2)	Battalion Commander will be present on the range and supervising execution. No deviations authorized.
Platoon (2 or more sections/squads with platoon C2)	Battalion Commanders will be present on the range and supervising training during the LFX. A BCT Commander may authorize a battalion field grade officer in lieu of the Battalion Commander; include this substitution in the risk assessment.
Squad/Section (5 or more Soldiers in 2 or more maneuver elements).	Company/Troop/Battery Commander will be present on the range and supervising training iterations. With Battalion Commander concurrence, First Sergeants or Company XOs may supervise the range.
Fire Team (3-5 Soldiers in one element)	Company/Troop/Battery Commander or First Sergeant will be present on the range and supervising training. Individual iterations can be conducted by the Platoon Leader/Sergeant.
Buddy Team / Crew Served Weapons	The Platoon Leader or Platoon Sergeant will be present on the range and supervising training. Individual iterations can be conducted by the Squad/Section Leader.

(3) Range OIC and Safety Personnel

(a) All range OICs and RSOs must be certified IAW Chapter 4, Section VI of this regulation.

(b) The RSO's only duty will be to assist the Commander by monitoring the safety of the exercise. The RSO will enforce the risk management control measures and advise the commander of any events that violate these control measures. The RSO will not be an evaluator.

(c) All Soldiers will receive a safety briefing from the range OIC or RSO prior to training that explains the risk assessment associated with the range and level of training, prior to execution of training.

(d) All exercises will require a minimum of 1 safety or observer-controller (OC) per element (support unit and maneuver). Maneuver elements conducting demolitions must have a safety/OC in the rank of SSG or above and certified in the employment of demolition munitions. If an indirect fire asset is used (mortar or field artillery), there will be a safety or OC with each firing element (battery or platoon).

(e) Changeover of range personnel assigned as a range OIC or RSO will require new OIC/RSO receiving a thorough briefing from the current range OIC of changes to the risk assessment and a physical walk of the lane to ensure the individual understands their job requirements.

(1) Static Ranges. The range OICs and RSOs will be present for the range walk and additional OICs and RSOs can perform those duties once they have been a participant on the range (i.e., executed the training and met all other requirements to serve as OIC/RSO).

(2) Maneuver Ranges. All required personnel (Range Specialist, OICs, and RSOs) must be present during the entire Leader certification and blank fire. If any member of the training event leaves, the range walk will stop and the process reinitiated when all are present.

f. Additional Instructions.

(1) Only weapons and ammunition approved for use on that particular range (coordinated and approved through Range Operations) will be utilized during the LFX.

(2) Ensure safety limitations and range configurations do not require Soldiers to use firing techniques that would not be used in actual combat. If safety or terrain limitations require unrealistic actions, brief the Soldiers in detail on why certain actions are required and what the unit should do if confronted with a similar situation in combat. (The training scenario should be developed to avoid unrealistic safety restrictions if possible.) Battalion and brigade commanders may request deviations from regulatory standards when critical mission requirements that conflict with regulatory standards in AR 385-63, Range Safety, or this regulation. Deviations will be submitted IAW procedures in Paragraph 10-12 of this regulation.

(3) Units will remain tactical throughout the exercise. Minimize administrative training distracters such as tents, ammunition points, and support vehicles that are not "in play" or part of the scenario. When support is required, it will be hidden from plain view and camouflaged so as to avoid detracting from the rigor of the tactical exercise. In the event of a real world medical evacuation, the unit may go into an administrative status.

(4) Commanders may require targeting changes to ensure LFX events do not become rote. To do so, commanders will coordinate with Range Operations Safety and unit safety personnel to provide options for safe adjustments to targetry during execution. Changes to the target array must not change SDZs. Available options include, but are not limited to the following:

(a) Including additional engageable or "shoot" targets in close proximity to other "shoot" targets after the dry or blank run (i.e., putting two targets where one was before).

(b) Changing "shoot" to "no-shoot" targets after the dry or blank run (do not change the other way).

(c) Removing targets after dry or blank runs.

(d) Approving "target boxes" rather than pin-point target locations, that allow for minor and safe target movement between iterations that do not create a significantly different gun-target line or range geometry situation. Commanders and Range Operations need to work together to come up with creative solutions that keep our live-fires fresh and safe.

(5) Commanders are encouraged to have elements conduct a sight-unseen "cold-hit" on the live-fire objective using blank fire, SIMs/CCMK and live OPFOR to better test the element's plan and reaction to the enemy prior to beginning the LFX crawl-walk-run sequence.

(6) Risk assessments WILL continue throughout the training process.

(7) Training Ammunition.

(a) Short Range Training Ammunition (SRTA) rounds are lethal and will be implemented in the same manner as live ammunition, but with a reduced Surface Danger Zone (SDZ). The use of SRTA ammunition in the M4/M16 requires an exchange of the bolt carrier group for the M2 Short-Range Practice Bolt, Device No. 07-62, for proper weapon operation. Units using SRTA with the M2 Machine Gun must exchange the standard barrel with the M3 Short-Range Recoil Amplifier, Device No. 07-63. Both devices are available for loan at the TSC. Failure to use these training devices will result in decreased weapon performance, cause delays in training due to misfires, and may cause damage to the weapon.

(b) The Close Combat Mission Capability Kit (CCMCK) will be employed in the same manner as blank fire, but with the addition of required safety gear. CCMCK is also known as SIMUNITIONS or UTM, and is available as a kit from the TSC for the M9, M4/M16, and M249. There is specified PPE that is part of the kit and provided. Additionally, specific clothing should be warn when using CCMCK. Refer to TM 9-6920-

3700-10 and DA Pam 385-63 for all the safety warnings and procedures. Commanders will establish access controls and SDZs when using CCMCK.

(c) Commercial Paint Ball rounds are not authorized for use.

(8) All Soldiers participating in the LFX will receive five continuous hours of uninterrupted sleep within 24 hours of conducting a Live Fire Training Exercise. Sleep plans must be addressed in the Composite Risk Assessment and enforced during training execution.

(9) Soldiers will wear ballistic eye and ear protection and employ night vision and aiming devices during limited visibility. They will be properly trained on the use of their Night Vision Devices and those devices will be fully functioning.

(10) Medical Evacuation. Units WILL rehearse ground evacuation routes to nearest ambulance exchange points identified in Chapter 5 of this regulation prior to training.

Chapter 8
Laser Operations

8-1. Purpose. Provide guidance on the use of tactical lasers, pointers, and markers on the Fort Sill Military Reservation.

8-2. Scope. This chapter applies to use of fielded U.S. military laser systems on the Fort Sill Military Reservation excluding Falcon Range. Falcon Range maintains a laser certification provided by AFRL 711 HPW/RHDO which is updated annually and recertified triennially. Range Operations will develop procedures for experimental lasers or testing involving lasers, on a case-by-case basis, with the approval of the DPTMS.

8-3. Responsibilities.

a. The Installation Safety Manager (ISM) has the following duties and responsibilities:

(1) Overall laser safety officer (LSO).

(2) Responsible for all aspects of laser safety on Fort Sill.

(3) Acts as range evaluator as outlined in MIL-HDBK-828B.

(4) Responsible for ensuring laser users receive new or updated laser procedures and/or safety information.

b. The Range Safety Officer (RSO) has the following duties and responsibilities:

(1) Responsible for managing operations involving tactical lasers, including testing, on the range.

(2) Knowledgeable of current TTPs and incorporates them into range procedures.

(3) Ensures range scheduling does not conflict to provide safe operations of tactical laser testing on Fort Sill. Acts as range operator as outlined in MIL-HDBK-828B.

(4) Assists ISM in determining requirements for safe employment of tactical lasers.

c. Commanders/directors at all levels are responsible for ensuring compliance with the procedures in this chapter.

d. The Laser Range Safety Officer (LRSO) is responsible for the safe conduct of laser operations at lasing points.

(1) The LRSO must be knowledgeable on, and ensure compliance with--

(a) The contents of this regulation.

(b) The specific guidelines that ensure proper control of hazardous laser energy as described in MIL-HDBK-828B.

(c) The requirements for laser operations in DA Pam 385-63.

(d) Azimuth and elevation restrictions at lasing points. These restrictions are listed on the Laser Point Safety Data Card, obtained from Range Scheduling.

(e) Use of protective eyewear, by exposed personnel, when required.

(2) The LRSO must--

(a) Check in and out with Range Operations IAW chapter 2, this regulation.

(b) Report, within 2 hours, any case of suspected eye exposure to laser radiation, Range Operations, and the appropriate medical authority IAW TB Med 279.

(c) Provide a safety orientation to unit personnel, who work with lasers, to include an explanation of hazards and safety requirements.

8-4. Laser Certification Procedures.

a. Commanders/directors of laser users will--

(1) Train and certify LRSOs to ensure safe operations of lasers, on Fort Sill.

(2) Provide Range Operations with rosters of certified LRSOs. (Certification/Range Safety Briefing period is valid for 1 year.)

b. Commanders/directors may agree to consolidate certification training between organizations. Certification training will include, as a minimum, the following:

(1) Specific guidelines to ensure the proper control of hazardous laser energy outlined in MIL-HDBK-828B, chapter 4.

(2) Guidance as outlined in DA Pam 385-63, chapter 16.

(3) Written and hands-on instruction, on the system to be used, including doctrinal and technical aspects of laser employment, especially with regard to joint-laser procedures.

8-5. Range Usage Guidelines. The following details guidelines for LASER usage on Fort Sill:

a. Operate class 1 and 2 lasers anywhere.

b. Use class 3 and 4 lasers only at lasing points designated by Range Operations or in this regulation.

c. LRSO must be present during all operations with a Class 3 or 4 laser.

d. Units will schedule and occupy laser points, using the same process as for firing points.

e. LRSOs must request a "wet" check-in from Range Operations prior to using a Class 3 or 4 laser.

f. Range Operations will maintain a log of Class 3 or 4 laser use, showing date, time, laser point(s), target area(s), type of laser, and LRSO.

g. LRSOs will place temporary warning signs at LPs, during lasing operations.

h. LRSOs will cease all Class 3 or 4 laser operations if specular hazards are identified in the lasing area and continued use could cause the laser beam to be reflected off the specular object.

8-6. Class 3 and 4 Laser Points. At Fort Sill, only use Class 3 or 4 lasers at the locations listed in the chart below.

a. MOW-WAY 1-1L thru 1-4L	ND 496351
b. McKenzie 2-1L thru 2-6L	ND 471350
c. Daly 3-1L thru 3-3L	ND 464351
d. Thompson Tower 4-1L thru 4-5L	ND 411393
e. Andrews Hill 5-4L thru 5-6L	ND 503395

8-7. Specific Laser Systems and Requirements.

a. A listing of approved laser systems is available on RFMSS on the Library tab.

b. Units will coordinate with Range Operations prior to occupation of the training site for restrictions and usage requirements for specific laser systems.

8-8. Laser Pre-mission Briefing.

a. The LRSO/LRSNCO will discuss, as a minimum, the following safety guidelines during a premission briefing, conducted prior to going "wet" on a LASER operation:

(1) All individuals are safety officers. Anyone seeing an unsafe act is responsible for stopping the act and reporting it to the LRSO.

(2) A LASER is a direct fire weapon system. Rules that apply to direct fire weapons also apply to LASER systems.

(3) Do not stand in front of any LASER device.

(4) All targets must be within your safety limits. Do not lase the following:

(a) Targets on or above the horizon.

(b) Anything moving in the target area.

(c) Mirror like objects.

(d) Standing water/smooth ice.

(5) Announce "check firing" if you see any personnel in or about to enter the target area, or if you see any unsafe act.

(6) Stop lasing if you lose positive control of the laser.

(7) Do not lase any object within the reflectivity clearance of your laser.

(8) Announce "lasing, lasing" prior to and while lasing.

(9) You must have target in the "cross-hairs" before you lase.

(10) Double check your azimuth and VA to ensure they are within allowable limits before lasing.

(11) If you have any questions or concerns about a particular target, ask the LRSO.

(12) Maps depicting the targets and/or target areas and their laser hazard area.

(13) Run-in headings and flight profiles to be used for airborne laser operations and permissible firing fans for ground based laser operations.

(14) Guidelines for controlling hazardous laser energy.

(15) Hazards of the laser and planned operations.

b. The LRSO will also ensure operators understand, explain, and backbrief the following:

Left limit	MIN VA	A/C run-in heading	MAX VA	Right limit

Chapter 9
Air Operations

Section I
General

9-1. Purpose. Provide ground personnel a brief overview of the procedures and guidance for all air operations in Restricted Area 5601 (R5601) range complex.

9-2. Scope. The information in this chapter gives ground personnel a general understanding of all air operations in the R5601 range complex. Aircrews will use the detailed procedures contained herein to conduct all air operations.

9-3. Objective. The objective of this document is to ensure effective training and safe operations on the Fort Sill range complex.

9-4. Administrative.

a. The Joint and Combined Integration Directorate (JACI), Fort Sill, OK is responsible for preparing, updating and coordinating this chapter. This chapter largely

applies to R-5601A/B/F. The 301st FW/Falcon Range has responsibility for the operation of R-5601C/D/E. Additionally, Washita MOA and Sheppard 1 MOA Area 8 airspace will be coordinated through the Fort Sill Airspace Officer at (580) 442-2387/1882.

b. Aircrews are responsible for complying with the procedures outlined herein and all governing regulations. Bring conflicts to the attention of the 138TH CTF**,** JACI, Fort Sill. DSN 639-2198 or commercial (580) 442-2198 or to Range Operations, DSN 639-6191 or commercial (580) 442-6191.

c. Army Radar Approach Control (ARAC) and Chief, Range Operations are responsible for monitoring Air Force operations for compliance with applicable post regulations.

d. Submit changes to this chapter to the 6th CTS, Det. 1.

9-5. Emergency Procedures.

a. In the event of an airborne emergency, the JTAC or OIC will assist the aircrews where possible in the event of an airborne emergency. They can assist in providing radio relay or advance information to controlling agencies, and may provide initial direction for search and rescue efforts.

b. In the event of a downed aircraft, follow below procedures:

(1) Contact Range Operations and provide coordinates of the crash site, and assist in locating survivors.

(2) If the survivors are located in the impact area, do not enter. (Large quantities of unexploded ordnance of all types are contained within the impact area.)

(3) If in radio contact with the survivors, suggest they limit their movement until qualified assistance can reach them.

(4) If the crash site and survivors are outside the impact area, ensure you maintain radio contact with Range Operations as you move to assist.

(5) Unless required to assist personnel in imminent danger, remain outside of a 2000’ radius from the crash site until EOD personnel are on-scene.

9-6. Airstrips.

a. The following restrictions apply to use of airstrips on Fort Sill:

(1) Military personnel will not use airstrips on the Fort Sill Military Reservation for assembly, bivouac, or camping areas.

(2) Vehicles will stay clear of airstrip boundaries.

(3) Driving vehicles across airstrips is prohibited (except authorized vehicles performing official business on the maintained roads on the Frisco Ridge Airfield).

(4) Do not dig holes within 100 meters of airstrips and adjacent managed areas.

(5) Field communication wire will not cross boundaries of airstrips.

(6) Bury wire lines detouring around airstrips or place at least 50 meters from airstrip boundaries to eliminate hazards to operating aircraft.

(7) Do not tamper with windsocks at airstrips.

b. Airstrip Names and Locations.

NAME	LOCATION
Southeast Corner	ND 652/336
Rabbit Hill	ND 491/422
Frisco Ridge	ND 604/457

c. Emergency Airfields

AIRFIELD	HDG/DIST	RWY LENGTH	TWRFREQS
Henry Post AAF	105º/7.0 NM	5000'	229.4/124.95
Lawton Muni	135º/9.5 NM	8599'	257.8/119.9
Altus AFB	260º/37 NM	13,440'	255.6/119.65
Sheppard AFB	170º/42 NM	13,100'	272.6/119.75

Section II
Army Air Operations

9-7. Air Traffic over Ranges.

a. The USAFCOEFS has joint use authority for the airspace over the Fort Sill ranges up to 40,000 feet. The ARAC is coordinating agency for USAFCOEFS. The following describes R5601.

(1) R5601 is the restricted area, which encompasses the entire Fort Sill Reservation. R5601 is divided into five different sections (A-F) and is designed as a training platform for ground and aviation missions.

(2) R5601A, commonly referred to as “East Range” contains two impact areas, a helicopter training area (Southeast Corner) and a UAS Training Complex

(Frisco Ridge). This range is used for artillery, small arms, UAS operations and GPS guided cargo drops. Surface – 40,000 MSL

(3) R5601B, commonly referred to as “West Range”, is the largest range and serves many functions. Ground maneuvers, artillery, close air support, UAS operations, small arms, high and low altitude bombing, forward air controller operations and urban assault. Surface – 40,000 MSL

(4) R5601C, commonly referred to as Quanah Range, is primarily used by the United States Air Force as part of Falcon Range. This range contains scored bombing ranges, moving targets, artillery firing points, ground maneuvering areas and a fully functioning tower for target observation. Surface – 40,000MSL

(5) R5601D is used exclusively for aviation. This area provides spill out maneuvering airspace for R5601C. 500’AGL- 40,000MSL

(6) R5601E is used exclusively for aviation. This area provides spill out maneuvering airspace for R5601C. 500’AGL- 6,000MSL.

(7) R5601F is used exclusively for aviation. This area provides spill out maneuvering airspace for R5601C. 500’AGL- 40,000MSL.

(8) The airspace within R5601 is closed to all unauthorized air traffic.

b. Air traffic desiring to enter R5601 must obtain authorization using the following procedures:

(1) Military aircraft will not operate in or within R5601 airspace until pilots obtain a Fort Sill Regulation 95-1 briefing from Air Traffic Control, Airfield Management, and Range Operations. (Exception: Falcon Range users will comply with the procedures in 301FWI 13-212 when operating solely within the Falcon Range airspace.)

(2) The ARAC is responsible for clearing aircraft into R5601 after coordination with Range Operations. Pilots are responsible for airspace discipline; ARAC monitors aircraft operations on range and will take necessary steps to ensure aircraft containment.

(3) Use one of the following FM frequencies to obtain authorization to enter R5601 airspace and operate over a specific range:

(a) 38.50 (East Range).

(b) 34.50 (West Range).

(c) 34.50 (Quanah Range).

(4) Pilots in charge (PCs) will contact Range Operations to report mission and anticipated duration on the range. Provide subsequent changes to the mission to Range Operations before execution. It is the PC's responsibility to avoid briefed danger areas and hazards.

(5) For missions involving two or more aircraft, Range Operations will only brief the flight leader.

(6) Constant monitoring of range frequency is required.

(7) When requested to do so by Range Operations, aircraft will cease operations and depart the range immediately.

(8) PC will report to Range Operations when mission is complete and that they are departing the range.

c. Air Corridor Procedures.

(1) Air corridors have been established through the Fort Sill Military Reservation (Restricted Area 5601). See Fort Sill Regulation 95-1 for detailed description of the air corridors.

(2) Corridors, with the exception of the Green Corridor, are limited to an altitude of 200'AGL and below.

(3) Range Operations will brief pilots on the air corridor status prior to them entering corridors.

(4) Aircraft will broadcast in the blind their entry and exit of corridors, on the air-to-air frequency (VHF 143.10).

(5) Aircraft transitioning through corridors will stay to the right of the corridor during transitions.

(6) The Yellow Corridor, Visual Flight Requirement (VFR) only, extends 1/2 mile either side of the State Highway 115 from the south boundary to the north boundary of the Military Reservation. This corridor is used for north to south transition only.

d. Close Air Support (CAS) Procedures.

(1) When CAS is scheduled, Army aircraft must establish radio communications with the JTAC prior to going west of the 50 north-south grid line. (Frequency is UHF 356.5, or UHF 344.5).

(2) Rotary-wing aircraft must stay alert for low-level jet traffic from the north-south grid line 34 through the north-south grid line 42.

(3) Fort Sill Range Operations will update range status with ARAC as necessary and verify any altitude restrictions in effect.

e. Class D Airspace. Aircraft using Henry Post Airfield are allowed to operate within the Class D Airspace as defined by FLIP publications.

f. Request for Check Fire in Instrument Flight Rules (IFR) Sectors. A request for check fire in (IFR) Sectors of East Air Corridor, by ARAC or Henry Post Tower (HPT) is restricted to the following conditions:

(1) Airfield is below VFR minimums and aircraft operating IFR are arriving or departing through East Corridor.

(2) Anytime an emergency exists and the pilot or controller believes flight through the IFR sector would enhance safety.

g. Required Check Fire. When a check fire is required, HPT or Army Radar Approach Control (ARAC) will call Range Operations via hotline. Request for check fire is made no less than 5 nor more than 10 minutes prior to estimated time of aircraft entry into corridor, excluding request made due to an aircraft emergency.

h. Completed Check Fire. When Range Operations is assured that a check fire is completed, they will notify HPT or ARAC.

i. Check Fire Termination. When the necessity for check fire is terminated, the requestor (HPT or ARAC) will notify Range Operations that the aircraft has cleared the restricted area.

j. Completed Fire. Range Operations will notify HPT or ARAC when the firing is completed within the East Corridor.

k. Hotline Monitoring. Range Operations will answer the hotline from HPT or ARAC when there is firing from within the corridor. The commercial telephone system is used as a backup.

Section III
Fixed Wing and Non-Army Air Operations

9-8. Fixed Wing Operations.

a. Fixed wing air operations at Fort Sill (R5601) supports training of personnel in formal artillery school courses, operational joint force training, and service unique continuation training.

b. Aircrews are responsible for complying with the procedures outlined herein and all governing regulations. Bring conflicts to the attention of 6th CTS, Det. 1, Fort Sill, DSN 639-2198 or commercial (580) 442-2198 or Range Operations, DSN 639-6191 or commercial (580) 442-6191.

c. Minimum altitudes are as follows: 500'AGL (helicopters on the range complex 200'AGL and below).

d. Use of infrared counter measures (IRCM, self-protection flares) is authorized in accordance with current PYRO status defined in Chapter 13-6. Aircrew shall ensures the flares will not contact the ground while still ignited. Do not dispense countermeasures over or toward ground personnel.

e. Use of electronic countermeasures (ECM, jamming or chaff) is PROHIBITED.

f. The highest peak in R5601B is 2208' MSL Mount Sherman at ND 382 387 / 34º41.3'N 098º34.9'W. Mount Scott is less than 3 NM north of the target area and rises to an elevation of 2,464' MSL.

9-9. Range Scheduling. (Falcon Range users will comply with the procedures in 301FWI 13-212 when operating solely within the Falcon Range.).

a. CAS missions are scheduled by Fort Sill Range Operations. Range times and locations will also be coordinated with Falcon Range and the Fort Sill Airspace Officer. Special Instructions (SPINS) shall be generated, coordinated and approved by the airspace officer.

b. Units desiring to schedule range missions, for unit level continuation training must realize that Army requirements, for use of the range will have priority over aircrew training. To schedule unit level continuation training, contact the Range Operations scheduling office at DSN 639-6191/5613. Fort Sill Range Operations is the final approving authority.

c. When mission is complete, inform Range Operations of the amount and type of munitions expended by DODIC.

d. Flight level 240 is the maximum altitude scheduled unless higher is requested by the user.

e. Range Operations will not schedule or man firing points 156W or 165W operations to run simultaneously, with live ordnance operations, by aircraft on the fixed wing impact area. Additionally, Range Operations will restrict the use of lasers on Daly/McKenzie Hills during CAS to those operating in an eye-safe wavelength, beyond 500 meters.

f. When civil authorities request permission to fly missions through Fort Sill's restricted airspace, approval is granted on an individual mission basis, provided the following safety procedures are followed:

(1) Provide a minimum of 1 hour notice of flights/missions to Range Operations. This is required in order to check fire all weapons in the affected area.

(2) Do not allow aircraft to enter restricted areas until you receive authorization from Range Operations.

(3) Aircraft in R5601 will maintain constant radio communications with Fort Sill ARAC while operating in and around Fort Sill.

(4) Aircraft will cease operations and depart restricted airspace immediately upon request from Range Operations.

(5) PC will report when the mission is completed, and unit has departed the restricted area.

g. If problems arise on the day of a scheduled mission (i.e., late sortie cancellation), contact Fort Sill Range Operations at DSN 639-2994/2008, and Range Operations will relay the message to the JTAC in the field.

9-10. No Ordnance Areas.

NAME	GRID LOC	LAT/LONG	RADIUS
West Lake Dam	ND 454/376	34º40.763'N / 098º30.264'W	500m
Signal Mountain Blockhouse	ND 467/370	34º40.435'N / 098º29.415'W	200m
Anywhere else outside of specified fixed wing target area	As Directed by Range Operations	As Directed by Range Operations	As Directed by Range Operations

9-11. Noise Sensitive Areas (Remain Above 2000' AGL).

NAME	GRID LOC	LAT/LONG
Lawton	N/A	N/A
Cache	ND 340/320	34º38'N / 098º38'W
Indiahoma	ND 230/310	34º37'N / 098º45'W
Medicine Park	ND 460/430	34º44'N / 098º30'W
Homa	ND 220/330	34º38'N / 098º45'W

Wichita Mountains Wildlife Refuge	Borders the north boundary of the R5601**F** complex beginning at approximately Medicine Park and extending westward approximately 15 miles. Minimum altitude is 2000' AGL, however, remain higher if possible.

9-12. Approved Ordnance.

a. Munitions approved for routine training on the Fort Sill Range includes-

(1) BDU-50 (500 lb inert bombs, DODIC F013).

(2) BDU-56 (2000 lb inert bombs, DODIC E756).

(3) BDU-33 **/**MK-76(25 lb practice bomb with spotting charge, DODIC E969).

(4) BDU-48 **/**MK 106 (10 lb high drag practice bomb with spotting charge, DODIC E962).

(5) 30mm, (DODIC B116) (DODIC B116) / 25mm (DODIC A967) / /20mm (DODIC A678) practice rounds or the service equivalent.

(6) MK-82 (500 lb live bomb, DODIC E509).

(7) MK-83 (1000 lb live bomb or 1000 lb inert bomb, DODIC E511).

(8) MK-84 (2000 lb live bomb, DODIC F275).

(9) BDU59/BDU60 PAVEWAY II Laser-Guided Training Round (LGTR) (DODIC EB33/EB34).

(10) 2.75” Rockets with Mk-66 motors (DODIC HA07) and either M156 WP (DODIC H855) or signature practice (DODIC H872) warheads.

(11) INERT: GBU-10 (DODIC F262), GBU-12 (DODIC F243), or GBU-16 (DODIC E511)

b. 30mm (DODIC B103)/20mm (DODIC AA22) HEI may be approved on a case-by-case basis.

c. GBU-15, GBU-24, guided missiles (AGM-65, AGM-114) or inertially aided munitions (GBU-31, GBU-38 et al) are prohibited due to footprints which exceed the boundaries of the restricted area.

d. For other munitions, contact Range Operations.

9-13. Impact Area Information. The West Range Impact Area, (for aircraft usage), consists of three CAS target areas, CAS Box 1, CAS Box 2 and 3. Each CAS Box is defined by a 500 meter radius.

a. CAS Box 1 is the western target array, with the primary targets located at ND 444394 (N34º41.750' W 098º30.939'). The western boundary of the impact area, a prominent north-south gravel road (ND 417/385 / N34º41.00'~~N~~ W098º32.45' to ND 417/411 / N34º42.40' W098º32.45') running across the valley.

b. CAS Box 2 is the eastern target array, with the primary targets located at ND 474 382 (N34º41.082' W 098º28.952').

c. CAS Box 3 is an inert only target box located at ND 487 387. Coordinate with Range Operations for specific information pertaining to deviation information.

d. Run-in ordnance restrictions are listed in paragraph 9-19.

e. There are numerous target hulks within the impact area that complicate identification of the fixed wing aircraft targets.

f. Target elevations range from 1300' to 1550'MSL.

9-14. Target Marking. (Falcon Range users will comply with the procedures in 301FWI 13-212 when operating solely within the Falcon Range.)

a. Personnel may use artillery marking for all missions. Plan and schedule for all CAS missions during USAFAS student training, and for other missions when possible.

b. Artillery marks will normally be white phosphorous (WP), but could be high explosive (HE), smoke (HC), or illumination (ILLUM) rounds. For safety, plan and schedule artillery marking during TRADOC student training or anytime large groups of personnel are in the vicinity of CAS operations. During other fixed wing operations, the JTAC will perform a risk assessment to determine the need for artillery marking. The artillery marking battery is normally located near the ruins at ND 409383. Gun-target line is approximately 070ºo with a maximum ordinate of 3500'MSL (105mm). Artillery mark will normally be a (WP), but could be a (HE), (HC), or (ILLUM) round. There are numerous other firing positions that can be used. The JTAC is responsible for ensuring de-confliction of aircraft and artillery.

Note: JTAC will give minimum holding altitude, over the impact area.

c. Conduct laser marking operations from Thompson Hill Tower for Close Air Support Target 1 (CAS1), or Andrews Hill for Close Air Support Target 2 (CAS2) and Close Air Support Target 3 (CAS3), and ND. Coordinate laser operations and laser codes prior to the mission. Pass laser target line and safety fan in the 9-line brief.

Aircraft will comply with current laser TTPs per JPUB 3-09.3.-Coordinate with Range Operations prior to the mission for Laser Safety Data Card and restrictions.

d. Scout helicopters may be airborne in the immediate vicinity. The JTAC ALO/ETAC will notify the aircraft of this hazard. in the remarks portion of the 9 line brief.

9-15. Location and Identification of Friendly Forces. JTACs are normally located at one of two pre-briefed positions, Thompson Hill Tower at ND 410393, (N34º41.694' W098º33.141') or Andrews Hill Observation Point (OP) at ND 503397 (N34º41.887' W098º27.052'). A large white tower, identifies Thompson Hill Tower. Laser points are further identified with panel markers when lasers are in use. Consider both sites as manned. Avoid over flight of these and other known manned positions. When live ordnance is being used at CAS1, all operations from Thompson Hill are suspended and the position unoccupied.

9-16. Airspace Coordination Area (ACA). This paragraph does not apply to R-5601C/D/E (Falcon Range). Personnel may use ACA Carlton**,** ACA Carlton Shelf, or ACA Williams during the CAS missions. Airspace Coordination Area (ACA) Carlton may be in effect during the CAS TOT. When ACA Carlton is active, do not fly into the quadrant south and east of ND 380/370 (Hill 591). There will be active artillery firing positions in the area. Grids ND 380/370 to ND 360/330 to ND 500/330 to ND 500/370 to beginning and extending from surface to FL400 define boundaries

a. When ACA Carlton is active, the following rules apply:

(1) CAS aircraft must use IP Bravo or Kilo.

(2) Artillery firing positions south and east of the ACA do not fire into the ACA without prior approval of the JTAC.

(3) Aircraft are authorized from surface to FL240 north of the 37 Grid Line in R5601B.

(4) Carlton Shelf also allows for 10,000' up to FL240 south of the 37 Grid Line.

(5) Place all other firing points in checkfire.

b. When ACA Williams is active the maximum ordinate for artillery will not exceed 1800 meters AGL. Aircraft are limited to 10,000' up to FL240 in R5601B unless artillery is cold and a lower altitude is approved by Range Operations.

9-17. JTAC Responsibilities and Duties.

a. The following are responsibilities of the JTAC personnel performing CAS missions at Fort Sill:

(1) Comply with all applicable regulations prior to and during any mission.

(2) Observe every precaution to provide maximum safety for their unit and any other units present in the vicinity.

(3) Monitor Range Operations net at all times.

(4) The JTAC/OIC will ensure each pilot/aircrew receives an over flight orientation of the target area, followed by a dry pass, to verify the target area and delivery parameters prior to making any hot or wet pass (AFI 11-214 attachment 4).

(5) Ensure flight members acknowledge all JTAC positions, other known friendly positions, and range boundaries prior to release of any ordnance.

(6) Ensure all applicable regulations are followed prior to and during any mission.

(7) Ensure the safety of their unit and those they are aware of in the surrounding area.

(8) Ensure all pilots are Combat Mission Ready or Basic Mission-Capable (or service equivalent) certified prior to delivery of live ordnance.

b. The following are the duties of the JTAC personnel operating on Fort Sill:

(1) Control all fixed wing CAS missions on the Fort Sill range.

(2) Conduct safe operations in the field.

(3) Conduct appropriate mission planning to ensure correct frequencies, CPs/IPs, target coordinates, observation position, marking method/availability, ordnance, and residual risk assessment procedures to use.

(4) Perform a telephonic brief, (if possible), with the air crew**.**

(5) Arrive at observation position a minimum of 30 minutes prior to the scheduled TOT and mark your position with marker panels that are clearly visible.

(6) Check-in with range control to receive a dry or wet check in code as appropriate.

(7) Establish ACAs, when required.

(8) Request and annotate any restrictions passed on from Range Operations at this time.

(9) Check-in with the marking battery (if available) and brief them on marking requirements. Confirm type of ordnance (HE, ILLUM, WP) on hand, position, number/type on guns, gun to target line (GTL) and maximum ordinate (MAXORD) for the target.

(10) Complete and sign the daily risk assessment on-site to allow the JTAC to assess firsthand the conditions prior to the mission.

(11) Upon completion of the mission check out with Range Operations and inform them of DODIC for ammunition expended, aircraft departure and or any unusual occurrences.

(12) Debrief the participating units prior to departing the range, if possible, and (at a minimum) perform a telephonic debrief with the aircrew.

c. TDY personnel must receive the following:

(1) Local area briefing from Range Operations.

(2) Local orientation by a qualified 6th CTS, Det. 1 Range Safety Officer.

(3) The 6th CTS, Det. 1 will inform Range Operations, through a written memorandum, that the individuals are terminal attack control certified and have completed the local area check-out, except those cases where the ~~138TH~~ 6th CTS, Det. 1 controller remains on-scene to perform supervision and safety observer duties for the duration of the TDY controller's activity.

9-18. Weapons Delivery Restrictions. (Falcon Range users will comply with the procedures in 301FWI 13-212 when operating solely within the Falcon Range airspace.)

a. Range Entry. The JTAC will coordinate the range entry of all aircraft conducting missions under their control. Aircraft must not enter/transit any portion of R5601 A/B/ F unless cleared by the ARAC.

b. Orientation Pass. Aircrews will over fly the target area for a range orientation prior to any weapons delivery. When any type of ordnance is used, the aircrew will accomplish a dry pass to confirm delivery parameters and to positively identify the location of the target and friendly ground party positions, in relation to the target. Aircrews will confirm friendly ground party positions with the JTAC personnel prior to engaging any target with ordnance.

c. Attack Sequence. All attacks will be conducted in accordance with JPUB 3-09.3, subject to the control of a current and qualified JTAC**.**

d. Arming Procedures, Forward Firing Ordnance (Rockets/Gun). To preclude off-range impacts, aircrews will ensure that the final aircraft weapons delivery mode is not selected until the aircraft heading complies with the target/munition attack axis restrictions in paragraphs 9-18.e or 9-18.f. in this regulation, as appropriate. Weapons systems may be active or armed prior to roll in, but the final weapons delivery sub-modes will not be selected (capable of release) until the aircraft complies with attack axis restrictions and is pointed at the target, consistent with existing aircraft directives and safety. Following release the system will be made safe and/or the sub-mode will be deselected after completing the safe escape maneuver unless service guidance directs that the system be made safe during the recovery.

(1) In aircraft that are equipped with hands on throttle-and-stick (HOTAS) weapons mode selection, aircrews will ensure that they do not enter the weapons release mode or sub-mode until the final attack heading and will deselect the weapons release mode or sub-mode during recovery unless aircraft-specific guidance requires deselection after recovery.

(2) In the event of a gun malfunction or a hung rocket or misfire, the primary concern will be to keep all ordnance in the impact area. An immediate KNOCK-IT-OFF call will be made, the MASTER ARM will be placed to SAFE and the aircrew will conduct the appropriate checklist procedure.

e. CAS Box 1 Fighter Weapons Delivery Restrictions.

(1) Strafe. Use of HEI rounds are approved on a mission-by-mission basis. Treat all strafe targets as "hard" targets. Arming for strafe is on final attack heading or in accordance with 11-MDS series manual requirements or NATOPS guidance. Attack restrictions for both 20mm and 30mm strafe are the final attack heading of 110º ± 30º for low-angle and long-range strafe (dive angle ≤) and 110° ± 45° for high angle strafe (>20º dive angle)

(2) Live Ordnance (Bombs and HEI Strafe). Final attack heading for live ordnance will be 110º± 30º with a minimum dive angle of 25° (no dive angle restriction for A-10) This attack heading runs down the center of the valley between Thompson Hill Tower (ND 410/393) and Thompson Hill OP (ND 412407). Thompson Hill will be unoccupied but, consider both sites as manned and avoid over flight. The use of high drag assemblies is not authorized with live ordnance except for A-10 aircraft. High drag devices are authorized in high-drag mode only.

(3) Inert Ordnance. Restrict deliveries to 110º ± 30º for their final attack heading. The JTAC may provide further restrictions depending on the ground situation. High drag devices are authorized in high-drag mode only.

(4) Practice Ordnance (BDU-33/MK-76/BDU-48). Restrict deliveries to 110º ± 45º for all aircraft and delivery mode/dive angles, including dive, level, and toss/loft.

(5) Rockets. 2.75” rockets are restricted to 110º ± 30º for level and diving deliveries. Loft deliveries are prohibited.

(6) Laser-Guided Weapons (GBU-10/GBU-12/GBU-16**/**LGTR). Restrict deliveries to 110º ± 30º for the final attack heading. Laser-guided inert munitions may be employed with a diving delivery of 25º dive angle or greater and below 10,000’ AGL. LGTR munitions have no altitude or dive angle restrictions. No live laser-guided munitions may be expended.

f. CAS Box 2 and 3 Fighter Weapons Delivery Restrictions.

(1) Strafe. Use of HEI rounds are approved on a mission-by-mission basis. Treat all strafe targets as “hard” targets. Aiming for strafe is on final attack heading in accordance with 11-MDS series manual requirements or NATOPS guidance. Attack restrictions for both 20mm and 30mm strafe are a final attack heading of 210º ± 30º for low-angle and long range strafe (dive angle ≤20º) and 210º ± 45º for high-angle strafe (>20º dive angle).

(2) Live Ordnance (Bombs and HEI Strafe). Final attack heading for live ordnance will be 210º ± 30º with a minimum dive angle of 25º (no dive angle restriction for A-10). The use of high drag assemblies is not authorized with live ordnance except for A-10 aircraft. High drag devices are authorized in the high-drag mode only.

(3) Inert Ordnance. Restrict deliveries to 210º ± 30º for the final attack heading. The JTAC may provide further restrictions depending on the ground situation. High drag devises are authorized in the high-drag mode only.

(4) Practice Ordnance. (BDU-33/MK-76/BDU-48). Restrict deliveries to 210º ± 45º for all aircraft and delivery modes/dive angles, including dive, level, and toss/loft.

(5) Rockets. 2.75” rockets are restricted to 210º ± 30º for level and diving deliveries. Loft deliveries are prohibited.

(6) INERT Laser-Guided Weapons (GBU-10/GBU-12/GBU-16/LGTR). LGTR munitions may be employed on a final attack heading of 210º ± 30º. Laser-guided inert or live munitions are prohibited.

f. Bomber Weapons Delivery Restrictions for Live, Inert, and Training Ordnance Release.

(1) When working with bomber aircraft, the JTAC will perform the role of safety observer and ensure that all artillery fires affecting R5601B have ceased prior to the arrival of the aircraft or altitude separate as appropriate.

(2) B-1/B-2/B-52 live ordnance is restricted to CAS Box 1 and Maximum altitude of 5,000’AGL. Do not use high-drag assemblies.

(3) Event must be level or terrain following radar (TFR) delivery.

(4) Attack heading is 090º± 30º.

(5) Maximum speed in R-5601 is 600 Knots True Air Speed (KTAS).

(6) Maximum bomb train (distance between first and last bomb) is 1500'.

(7) Minimum separation between aircraft is 1 minute.

9-19. Geographic Reference Points.

NAME	GRID LOCATION	LAT/LONG	DESCRIPTION
CP Lima (L)	ND 446/476	34º46.174'N 098º30.757'W	North end of Lake Lawtonka, IRW (CH 88) 226056
CP Romeo-(R)	ND 356/260	034º34.510' N 098º36.712' W	SPS (CH 74) 350035
IP Bravo (B)	ND 271/352	34º39.503'N 098º42.255'W	Bomb circle on Falcon Range
IP Kilo (K)	ND 372/405	34º42.352'N 098º35.627'W	Ketch Lake
Point Sierra (S)	ND 467/370	34º40.435'N 098º29.415'W	Signal Mountain
Point Alpha (A)	ND 392/340	34º38.830'N 098º34.335'W	Two adjacent ponds
IP November (N)	ND 361/376	34º40.785'N 098º36.355'W	Small lake
Grid Zone Origin ("14S ND", NAD 83) = 34º20.584'N / 099º00.000'W.			

9-20. Local Frequencies.

ORGANIZATION	FREQUENCIES
Joint Terminal Air Controller	356.5(P) / 344.5(S)
Fort Sill Approach/IFR Clearance/Service/ VFR/Flight Following	322.4 / 120.55(P) 290.375 / 118.6(S)
Range Operations	34.50(FM) 38.50(FM)
Fort Sill ATIS	354.025 / 135.425
Fort Sill METRO	375.2
Falcon Range	363.7 (P) / 342.3(S) 141.85 VHF
Altus Approach	257.72/ 125.1 (P) 348.3 / 120.0 (S)

9-21. Contingencies Within Range Airspace. (Falcon Range users will comply with the procedures in 301FWI 13-212 when operating solely within the Falcon Range airspace.)

a. Contingencies. The JTAC will direct an abort if problems arise that could jeopardize the aircraft or ground personnel. The aircraft will discontinue the attack and make a turn back to the last assigned IP, assigned holding point or as directed by the controlling JTAC.

b. Departure. JTAC will confirm the aircraft are "switches safe" prior to exiting R5601. Ensure that aircraft continue to comply with any control measures still in effect.

PROBLEM	FIGHTER	BOMBER
Abort	If on ingress to target area, discontinue, by turning back to the last assigned IP, remain in Range Airspace. Climb to an altitude above 3500'MSL while avoiding the Gun-TGT line of the artillery; if on final attack heading, immediately break off and turn north until clear of the impact area. Climb to an altitude above 3500'MSL or as directed by JTAC; in each case, safe weapons as soon as possible.	If on ingress, (after IP Bravo), discontinue the attack by making a climbing left turn to the north until clear of the impact area. Safe the release system and climb to a minimum altitude of 4500'MSL to transit the airspace over the Wichita Mountains Wildlife Refuge.
Hung Ordnance/ Jettison	For jettison, make a level pass heading 110º ± 10º (CAS 1) or 210º ± 10º (CAS 2 and CAS 3) at a safe airspeed and altitude over the fixed wing target area IAW flight manual procedures. When on a steady heading and approaching the target area, the JTAC will transmit clearance to jettison to ensure the ordnance falls within the impact area.	For hung ordnance, return to home station/ suitable field with any ordnance that failed to release IAW flight manual procedures; for jettison, fly the normal ground track and inform the JTAC of the problem and intentions. The JTAC will transmit clearance to jettison when on assigned heading as appropriate.

Runaway Gun	Continue to track on final attack heading to keep gun pointed into the impact area. If a turn must be made, make a gradual turn to avoid populated areas. If practical, turn north or climb above 3700' to avoid the Class D surface area.	N/A

PROBLEM	FIGHTER	BOMBER
Weather Route Abort	If inadvertent instrument meteorological conditions (IMC) are encountered while operating VFR on the range, climb to a minimum altitude of 3500'MSL then make a turn to the north. If IMC, set IFF code to 7700, contact Fort Sill Approach, and remain below 7000'MSL until issued an IFR clearance.	Climb to a minimum altitude of 3500'MSL on the **090º** attack heading, then make a climbing left turn to the north. If IMC, set IFF code to 7700, contact Fort Sill Approach, remain below 7000'MSL, until issued an IFR clearance, and safe the release system.
Lost Comms	Climb to minimum altitude of 3500'MSL. If single ship, attempt to fly over JTAC position while rocking wings. The JTAC will notify Fort Sill Approach. Set IFF code IAW FLIP and exit R5601B to the north or south as filed in flight plan.	Climb to 4500'MSL and fly the attack ground track. Fly the last 2 miles of the ground track while rocking wings. Over the target, execute a left turn to the north while setting IFF codes IAW FLIP. The JTAC will notify Fort Sill Approach.
Depart.	Confirm switches safe with JTAC, and be at or above 2000'AGL prior to departing R5601. If departing IFR, contact Fort Sill Approach for departure instructions. Maintain VMC below 7000'MSL until cleared to climb by Fort Sill Approach. Suggested IFR pickup point is the HBR 090021 for a north departure and the SPS 348035 for a south departure.	Contact Fort Sill Approach on 356.5/322.4 on downwind of the last pass to convey intentions and coordinated for flight following or IFR clearance. If departing IFR, and do not have an IFR clearance, continue the left turn off target to a 360º heading maintaining VMC, and remain below 7000'MSL until Fort Sill Approach issues an IFR clearance. Each aircraft must file and receive a separate IFR clearance to depart Fort Sill Approach Control's airspace. Aircrew should file HBR 090021 as the first point outbound for an IFR clearance.

9-22. Range Entry. This paragraph describes operations in R-5601A/B/F. Falcon Range users will comply with the procedures in 301FWI 13-212 when operating solely within the Falcon Range airspace.

a. Fighter, Range Entry Arrivals shall contact Fort Sill Approach and advise that you will be operating in R-5601. Aircrew will confirm airspace to be used, and Fort Sill ARAC will issue airspace clearance and any restrictions. Do not enter/transit any portion of R-5601 unless cleared by ARAC. Fort Sill ARAC will then pass aircraft to the JTAC

controlling the mission. Fort Sill ARAC will monitor the control frequency throughout the mission. Maintain visual meteorological conditions (VMC) prior to contacting the JTAC. Concurrent operations in Falcon Range require approval from the Falcon Range ROO. Likewise, avoid the Henry Post AAF Class D surface area. If unable to contact the JTAC, contact Fort Sill ARAC. Follow arrival procedures below and proceed to assigned IP when cleared by the JTAC. If assigned to IP Sierra or IP Alpha, hold VFR at 3500'MSL and above. Remain in the R-5601 airspace and west of the ND 50 North-South grid line at all times. If assigned to IP Bravo, hold VFR at 5500' 5000'MSL and above to ensure line of sight radio communications capability between JTAC and fighters.

(1) North Arrival. Proceed towards CP Lima and contact approach control prior to contacting the JTAC. If arriving VFR remain clear of the Washita Military Operating Area (MOA) (8000'MSL to FL 230) located north of R- R-5601A/BF and Falcon Range. If needed, hold VFR north of R-5601A/BF at CP Lima, altitudes between 3500' and 8000'MSL. Remain clear of the Fort Sill/Henry Post AAF Class D surface area at all times.

(2) South Arrival. Proceed towards CP Romeo and contact approach control prior to contacting the JTAC. If arriving VFR remain clear of the Sheppard 1 MOA (8000'MSL to FL 220) located south of R- R-**5601A/BF** and Falcon Range. Use caution for substantial VFR traffic underneath the Sheppard 1 MOA. If needed, hold VFR south of R- R-**5601A/BF** and Falcon Range at CP Romeo, altitudes between 3500' and 8000'MSL. Remain clear of the Lawton Municipal Class D surface area at all times.

(3) Attack Sequence. All Fighter Attack Sequencing will be in accordance with JTAC instruction.

b. Bomber, Range Entry. Prior to entry contact Fort Sill Approach and inform them you will be operating in R-5601 and working with November 18. The JTAC/ALO will obtain and issue range clearance prior to entering their airspace. Do not enter/transit any portion of R-5601B unless cleared by the JTAC/ALO or Range Operations. Concurrent operations in Falcon Range require approval from the Falcon Range ROO. Fort Sill Approach will normally monitor the JTAC/ALO frequency and provide traffic advisories when necessary.

(1) Attack sequence. IP Bravo is the Falcon Range conventional bomb circle. Cross IP Bravo heading 070º magnetic and make an IP inbound transmission to the JTAC (add "System SAFE" on a dry pass). Terrain will limit radio transmissions in the area of IP Bravo. To eliminate this problem maintain 5000' MSL until departing IP Bravo. The target is approximately 9.6 NM from IP Bravo. On a hot pass, aircrew will not ARM the system for release until east of HWY 115 (paved road running north out of the town of Cache). HWY 115 is approximately 5.5 NM from the target. Note: The radio antenna at N 34º39.283' W 098º36.880' can be used as a radar offset. The JTAC will state "Continue" (meaning it is safe to continue the pass, the system will remain SAFE - do not drop any ordnance) or "Cleared HOT" (meaning it is safe to continue

pass with system ARMED and cleared to drop ordnance) approximately 20 seconds prior to TOT for each aircraft. If necessary, the JTAC will transmit "ABORT" (an unacceptable condition exists, do not release any ordnance and SAFE the release system) to direct an individual aircrew to withhold release. If an aircrew does not receive a "Cleared HOT" call in time for weapons release, the aircrew will not release any ordnance and will SAFE the system.

(2) Post-attack. Begin an immediate climbing left turn as soon as possible after target flyover/ordnance release to avoid the Henry Post AAF Class D surface area that begins at W 098º27' and extends eastward. If unable to avoid entry in the Class D surface area, comply with the following procedures to avoid a possible traffic conflict:

(a) Maintain 4000' MSL minimum before crossing W 098º27' (western boundary of the Fort Sill Class D surface area).

(b) Maintain 4500' MSL minimum before crossing W 098º25' (extended runway centerline for Henry Post AAF).

(c) If returning to the range for another attack, continue the left turn and remain above 2000’ AGL in the Wichita Mountains Wildlife Refuge area while en route. Follow the RANGE ENTRY and ATTACK SEQUENCE procedures detailed above.

9-23. Aircraft Control. The JTAC will provide terminal attack control for all fixed wing CAS missions on the R-5601B ranges. The JTAC will use Type 1 or Type 2 control for all live or inert CAS missions on the Fort Sill range. Type 3 controls are not authorized with ordnance. Type 3 controls may be used in a dry status**.** “Cleared Hot" or "Continue Dry" will be issued on each pass when employing ordnance. Clearance will be given on final with the aircraft aligned with the target, and the aircraft is in a safe position and will not jeopardize known friendly positions. Control measures within R-5601C/D/E (Falcon Range) will be in accordance with the 301st FW supplement to AFI 13-212.

a. Radio procedures. Conduct air missions on the primary UHF frequency, CAS Control net. The RSO/OIC will monitor the Range Operations FM net at all times.

b. Restricted/curtailed operations. The JTAC must make a risk assessment of the situation in the event of restricted/curtailed operations. Give consideration to type of ordnance on the aircraft, gun positions, established ACAs, aircrew proficiency, weather, and risk versus importance of the mission.

Section IV
Unmanned Aircraft Systems (UAS) Operations

9-24. Operations of Unmanned Aircraft Systems.

a. Because of their small size, increasing density, and limited ability to avoid other aircraft, UASs provide an operational hazard to manned aircraft operating in the general area of UASs.

b. All UAS flights at Fort Sill will be conducted IAW with this regulation, AR 95-23, Unmanned Aircraft System Flight Regulations; Fort Sill Regulation 95-23**,** Unmanned Aerial System Flight Regulations, appropriate system Training Circulars, and the UAS Mission Briefing.

c. All UAS missions will be scheduled IAW Chapter 10 of this regulation.

d. Use of commercial and privately owned UAS and remote control aircraft on the Fort Sill ranges and training areas is prohibited unless approved under the provisions of FS Reg 95-23.

e. An event specific briefing between the UAS Mission Coordinator or Master Trainer and Range Operations will be conducted a minimum of two weeks prior to any UAS operation. Briefing requirements are outlined in paragraph 9-27.

f. Employing units will observe procedural controls and will establish positive control of the UAS by the UAS forward control station. UAS operations require preplanned missions and detailed coordination, prior to air operations, to ensure safe separation between the UAS and manned aircraft to prevent hazards during flight operations. UAS unit/event OIC/RSO are required to attend the air operations safety briefing from Airfield Operations, comply with this regulation, and read/comply with the Fort SILL Aviation Policies and Procedures Guide manual. During the Air Tasking Order (ATO) briefing at Range-Operations, the UAS unit/event OIC/RSO will address, as a minimum, the following information:

(1) Location of the Launch Site/Recovery Site (LS/RS).

(2) Verify all elements of the approved Restricted Operations Zone (ROZ) (i.e., altitudes, ACP's, corridors, up-link/down-link frequencies, etc.).

(3) Procedures between Forward Control Stations (FCS) during UAS hand-off point operations.

9-25. Certification. Certification of Operators and Master Trainers (MT). The UAS Mission Coordinator (MC) has overall responsibility for the operation and safety of a UAS mission and must be safety certified. Aircraft Operator (AO) must be certified on

the UAS and be included on the units Certification Roster and attend the OIC/RSO safety briefing.

9-26. UAS Mission Profile Checklist/Briefing. The UAS Mission Coordinator or Master Trainer must provide as much of the following information as possible to enable the AT&A, Range Operations to determine the feasibility of the proposed UAS operation.

a. General description of system to include dimensions, weights, and picture(s).

b. Description of planned mission and flight profiles at Fort Sill, to include launch and recovery site, route and altitude to and from mission area, mission area, mission altitude, and if applicable, return home (Lost-Link) route and altitude.

c. Performance data to include climb rate, turn capability, cruise speed, normal and maximum mission altitudes, glide ratio, takeoff and landing distances, and maximum speed, fuel endurance and range.

d. System flight history data including number of flights, flight hours, system reliability, number of accidents, and types of accidents.

e. Description of command/control system to include subsystem block diagram, effective range (RF link analysis), frequencies, and personnel required to operate the system.

f. Description of pre-takeoff checks and procedures to verify the UAS control system functions correctly.

g. What type of information is available to the pilot such as map displays, telemetry data, etc., for the UAS mission?

h. What happens if the control signal is lost (loss of carrier) (link loss) or if control system does not respond to commands? Does the control system possess automatic reversion or “return home” modes?

i. Description of the Flight Termination/Recovery System, including an Auto Recovery System if applicable.

j. Meteorological restrictions on operations.

k. A Flight Controllers Manual or operating procedures as applicable.

l. Response to typical in-flight emergencies such as loss of engine.

m. Identify any classified equipment, hazardous systems, chemicals, pyrotechnics, etc., on the system.

n. A copy of a risk analysis/assessment on the UAS system.

o. A risk assessment IAW ATP 5-19 for the mission to be flown. NOTE: the risk assessment must specifically address if the intent is to fly over personnel

p. Pilots certification (who certifies/licenses), hours of time with the system, number of flights.

q. Environmental assessment documents pertinent to the system and/or operation.

r. What type of fuel is used, what is the systems fuel capacity, how much fuel will be stored on site and how will it be stored.

s. Safety area and/or ROZ around the system during launch and/or recovery.

Chapter 10
Planning, Operating, and Scheduling

Section I
Planning and Operational Considerations

10-1. Coordination with Range Operations. Coordination with Range Operations should be made IAW this regulation prior to training. Contact information is--

a. Building 1490 Randolph Road.

b. Designate an OIC and RSO for each firing exercise and an OIC for each Training Area/Facility. The OIC and RSO must remain on site at all times until a check-out code is obtained from Range Operations.

10-2. Preparatory Checklist. The following is a general checklist of items for coordinating, scheduling, and planning training activities on the Fort Sill Military Reservation. Detailed range request procedures are located in chapter 10 of this regulation.

a. Schedule use of ranges, training land, and training facilities identified in Annex A, including use of roadways for road marches, using the Range Facility Management Support System (RFMSS) IAW procedures listed in paragraph 10-7 of this regulation. Units that sponsor ranges must also schedule use of the range in RFMSS.

b. Ensure range safety certification rosters are on hand at Range Operations, signed by the brigade commander, battalion commander (LTC or equivalent), director, or equivalent. Update rosters at least annually, but preferably when changes occur. DPTMS or the Chief, Range Operations may decertify an OIC if he/she violates the

provisions of this regulation. If an OIC is decertified for multiple violations, the next higher commander in the chain above the original certifying officer must verify the recertification.

c. Ensure individuals on the Safety Certification Roster have attended the Range Safety Briefing given on each Wednesday and Friday at 1300 in the Range Operations Conference Room, Building 1490**,** (both rosters are valid for 1 year).

Ensure all range positions have been filled with competent personnel.

e. Perform risk assessment with a Risk Assessment Code (RAC) and proper signature from approving authority prior to conducting training.

f. Ensure unit has the required references (e.g., SOPs, FMs, TMs, etc.).

g. Ensure the highest controlling element has adequate radios to establish and maintain continuous communications with Range Operations.

Section II
Occupation of Ranges and Training Areas

10-3. Training Area Entry Points. All tracked vehicles must enter and exit training areas and facilities at authorized points. Authorized points are identified on Fort Sill 1:50,000 maps as roads entering or leaving training areas or facilities.

10-4. Unit Police Responsibilities. Upon occupation of a training area or facility, the using unit has 1 hour to inspect for garbage or discrepancies and report these to Range Operations. If occupation is in the hours of darkness, report the garbage or discrepancies no later than 1 hour after sunrise. Failure to notify Range Operations within the given time will result in the using unit assuming responsibility for all garbage and/or discrepancies found in the area or facility by Range Inspectors.

10-5. Regulatory Consideration. Personnel responsible for preparing requests for range training facilities and for programming exercises and problems must consider the criteria established in AR/DA Pam 385-63.

a. No portion of the surface danger area for weapons or explosives will intersect or cross the following areas:

(1) Federal highways.

(2) Reservation boundaries. For the purpose of this regulation, State Highway 115 is considered to be within the Fort Sill reservation boundaries.

(3) Post ammunition storage and post ammunition vehicle holding area.

(4) Built-up areas.

(5) Railroad right-of-way, (50 feet either side of tracks).

Section III
Range Request Procedures

10-6. Scheduling Authority. Range Operations is approving authority for range requests. All range and training facilities on Fort Sill are installation assets managed by Range Operations. Units must schedule the use of these facilities with Range Operations, even if they are the sponsoring unit. Special requirements of units, which are not covered by this regulation, will refer to Range Operations for a decision.

10-7. Range Request Procedures.

a. Submit all requests for scheduling through the Range Facility Management Support System (RFMSS) via the appropriate RFMSS link. For users located off the Ft. Sill network go to this website: https://rfmssbackup.belvoir.army.mil/Sill/Pages/Default.aspx [Note: the version of RFMSS software will be indicated “Fort Sill”. For example: “Fort Sill – v3.3.0.95”]. Range Operations does not grant scheduling authority to any element lower than a battalion except for separate tenant units with no higher headquarters located at Fort Sill or Reserve Component units with higher headquarters outside of a 250 mile radius from Fort Sill.

b. Range Operations will process requests in RFMSS on the following timeline:

(1) Reserve Component units conducting training only during weekends may schedule - 15 weeks prior to the scheduled week of training for the using ranges and training areas in the West Range and Quanah Range areas, and using the Infantry Squad Battle Course or Live Fire Convoy Range in the East Range area.

(2) TRADOC Institutional Training Brigades units - 11 weeks prior to the scheduled week of training.

(3) Reserve Component units conducting annual training - 8 ½ weeks prior to the scheduled week of training.

(4) All other Active Army units stationed at Fort Sill - 8 weeks prior to the scheduled week of training.

(5) All activities authorized to use Fort Sill facilities may continue to request range facilities less than 8 weeks from the week of scheduled training on a "first-come-first-served" basis. Request firing activities no later than 3 weeks prior to date required. Generally, units can request non-firing activities at any time unless other restrictions apply such as for digging operations, CS usage, etc.

c. Co-usage of land or facilities.

(1) Units submit requests for co-usage of land/facilities through RFMSS IAW the timeline above.

(2) The unit that originally scheduled the land/facility is approval authority for the co-usage request.

(3) Co-usage of live ranges is not authorized; however units operating ranges may permit other units to participate in the firing event under the control of the Range OIC.

d. Once a range, training land, or training facility managed in RFMSS is approved, the unit will not bumped from the schedule without the approval of the Director, DPTMS.

e. Range Operations will provide targets, target frames, range flags, and safety paddle/lights. Units must request them by submitting a Range Support Request form to Range Operations. This form can be found in RFMSS under the Library tab in the Range Operations Documents folder.

f. For information or questions about the scheduling process or to obtain authorization to access the scheduling portion of the RFMSS system contact Range Operations at DSN 639-6191/5613, commercial 580-442-6191/5613, or email: usarmy.sill.imcom.mbx.ft-sill-dptms-range-scheduling@mail.mil.

Section IV
Special Range Request

10-8. CBRN Decontamination Training. Training requiring the use of a water source (pond) requires coordination with the Directorate of Public Works (DPW) Environmental Quality Division (EQD). The unit will submit a Request for Environmental Review to EQD at the same time as the area is reserved in RFMSS. A copy of this document is available in the RFMSS Library. NOTE: Actions scheduled less than 3 weeks prior to the event may not be supported by EQD.

10-9. Demolition Training. Requests for training facilities to support demolition training must include firing and detonation location coordinates, type and amount of explosives, and expected times for detonation.

10-10. Training Involving Digging or other Earth Moving. Training requiring antitank ditching, road grading, bridging operations, or digging of any type are processed through Range Operations for coordination with DPW, Environmental Quality Division, Natural Resource & Enforcement Branch, for site approval. Only approved sites are used for these activities. Submit a complete description of the training event to include the grids to cover the entire operation and the duration of the event to the DPW, Environmental Quality Division (EQD) at the same time as the area is reserved in

RFMSS. A copy of the Request for Environmental Review may be found in the RFMSS Library. NOTE: Actions scheduled less than 3 weeks prior to the event may not be supported by EQD.

10-11. Deviations. Critical mission requirements may exist that conflict with regulatory standards in AR 385-63, Range Safety, or this regulation. In these cases, the battalion or brigade commander may request a deviation which is the temporary departure from established range standards and procedures. The paragraphs below describe the procedures for requesting a deviation.

a. Deviations will be requested through Range Operations to the FCoE Senior Commander IAW procedures in paragraph 1-6 of the regulation.

b. Deviations may be requested to –

(1) Reducing SDZ dimensions when terrain, artificial barriers, or other compensating factors make smaller SDZs safe.

(2) Modifying prescribed firing procedures to increase training realism (such as accepting increased risk when the risks have been incorporated into an approved SDZ) as appropriate for the proficiency of participants.

(3) Allowing personnel not authorized within the SDZ (per DA Pam 385–63), unless prohibited.

c. Guidelines for preparing the deviation are contained in DA Pam 385-63, Range Safety.

d. All deviations will be effective for one year or less.

Section V
Cancellations

10-12. Cancellation Policy. If a scheduled range training facility is no longer required, units must cancel the facility at the earliest known point. This can be done by calling Range Scheduling at DSN 639-6191/5613 or commercial 580-442-6191/5613. This will make the facility available to other users.

a. No Shows waste valuable resources and will be reported to the chain of command and will be listed on the monthly No Show report at the installation training meeting.

b. Late arrivals will result in possible loss of the training facility. Scheduled time for live fire range facilities is considered first bullet down range time. Late arrival at ranges with operators in excess of one hour will cause the range to be cancelled to allow the operator to perform other scheduled duties.

Section VI
External Organizations

10-13. General

a. All external organizations will coordinate with the DPTMS Mobilization Branch at 580-442-1844 to schedule any event using Fort Sill ranges, training land, and associated airspace.

b. External organizations will submit requests for use of ranges and training land using the procedures in paragraph 10-7 of this regulation only after coordinating with Mobilization Branch. External organizations may request an exception to the scheduling timelines for events that extensive planning and preparation through Mobilization Branch.

10-14. U.S. Department of Defense Organizations.

a. Reserve Component units that are associated with Fort Sill as their primary training site in the Army Range Requirements Module will receive common level of range support at no additional expense.

b. All other U.S. Department of Defense organizations will be charged for distinguishable costs incurred while training. Costs include, but are not limited to, expended supplies such as targets and fuel, and overtime/differential pay costs for personnel if required tasks cannot be scheduled within the two-week pay period.

10-15. Other U.S. Government Organizations. Other U.S. Government organizations are permitted to schedule use of ranges, training land, and training facilities identified in Annex A after coordinating with Mobilization Branch. These organizations will be charged for all distinguishable costs incurred to include labor costs.

10-16. Other External Organizations.

a. Other organizations are not permitted to schedule use of ranges, training land, and training facilities identified in Annex A without the approval of the DPTMS.

b. A written agreement between the external organization and U.S. Army Garrison Fort Sill will be established before any support will be provided and any resources scheduled.

c. These organizations will be charged for all distinguishable costs incurred to include all labor costs. They will also be required to purchase liability insurance in the amount deemed acceptable by the U.S. Army Garrison Fort Sill in order to indemnify parties in the event of a catastrophic accident involving any equipment owned or

operated by the external organization. Both the Fires Center of Excellence and Fort Sill and the Garrison, Fort Sill will be named as additionally insured.

Chapter 11
Declination Locations

11-1. Declination of Aiming Circle. To declinate an aiming circle follow the procedures and guidelines as prescribed in FM 6-2.

11-2. Survey Control Information.

a. This trig list contains a compilation of descriptions, sketches, photographs, geographic and UTM grid positions, azimuths, and elevations of monumented declination stations located on and around the Fort Sill, Oklahoma Military Reservation.

b. Horizontal control is of the accuracy indicated on the individual Survey Control Point data sheet. All horizontal control is published in World Geodetic System (WGS) 84. For the purpose of this listing, WGS-84 is the same as the Geodetic Reference System (GRS) 80. The original data for the horizontal networks were pulled from the NGS database and are listed as NAD 83 (2007), consistent with the National Readjustment NAD 83 (NSRS 2007). Horizontal accuracy considerations included both survey specifications and stability of the monument.

c. Vertical control is of the accuracy indicated on the individual Survey Control Point data sheet and in many cases will differ from the horizontal accuracy. Vertical control is relative to the North American Vertical Datum of 1988 (NAVD88). To convert from NAVD88 to National Geodetic Vertical Datum of 1929 (NGVD29) subtract 12 cm’s from the NAVD88 data. This conversion actually ranges from 10-14 cms across the Ft Sill Reservation. Elevations are the orthometric height at the top of the mark. All conversions from meters to feet were computed using the international foot (0.3048).

d. Directional control for all declination stations published in this text is of 4th order accuracy. All azimuths were determined either by astronomic observations or by applying one-position angles to an astronomic observation.

(1) The distances listed to the azimuth marks is rounded to the nearest 100 meters and is provided for identification purposes only.

(2) The Fort Sill Trig list and Declination Station list is available in the RFMSS library or from Range Operations.

11-3. Declination Locations.

a. Declination Station AVENETTI (TA 77)

(1) Location

Easting	5 61469.662
Northing	38 33490.141
Elevation (m)	378.72

(2) Azimuth Markers

Azimuth Marker	Azimuth (mil)	Distance (m)
SCP Arbuckle (ND619 336) Quad Marker	1324.100	500
Green Lawton Water Tower (ND 629 324)	2346.767	1900
Radio Tower (ND 609 326)	3491.384	1800
White water tower (ND 571 351)	5149.772	5000

b. Declination Station BEEF CREEK (TA 70)

(1) Location

Easting	5 58515.810
Northing	38 39467.886
Elevation (m)	362.12

(2) Azimuth Markers

Azimuth Marker	Azimuth (mil)	Distance (m)
SCP DODGE (ND 602 395) Quad Marker	1601.084	1700
SCP KIOWA (ND 586 379) Quad Marker	3136.560	1500
SCP MB 2 (ND 539 380) Quad Marker	4494.818	4800
SCP 37 (ND 576 409) Quad Marker	5832.195	1600

c. Declination Station CONKLIN (BBDR)

(1) Location

Easting	5 40451.693
Northing	38 34474.636
Elevation (m)	407.34

(2) Azimuth Markers

Azimuth Marker	Azimuth (mil)	Distance (m)
SCP GRUBER NORTH (ND 419 357) Quad Marker	0885.952	1500
Red and white checkered Good Year Water Tower (ND 454 314)	2167.307	5700
Communications antenna	4016.520	4000
SCP KOEHLER (ND 387 358) Quad Marker	5450.981	2500

d. Declination Station PUNCH BOWL (TA 44)

(1) Location

Easting	5 50041.530
Northing	38 41144.565
Elevation (m)	384.24

(2) Azimuth Markers

Azimuth Marker	Azimuth (mil)	Distance (m)
SCP RABBIT (ND 502 421) Quad Marker	0135.386	1000
SCP ANDREW (ND 503 397) Quad Marker	3000.931	1500
SCP HINDS (ND 489 399) Quad Marker	3976.670	1700
Radio antennae (ND 473 437)	5556.527	3700

e. Declination Station TED (TA 53)

(1) Location

Easting	5 50691.594
Northing	38 35151.686
Elevation (m)	369.40

(2) Azimuth Markers

Azimuth Marker	Azimuth (mil)	Distance (m)
White water tower (ND 562 362)	1091.618	2000
Lawton Water Tower (ND 517 328)	2758.631	2500
Radio tower (ND 498 347)	4404.882	1000
SCP Hinds (ND 488 399) Quad Marker	6027.710	5000

f. Declination Station ZOOM (TA 16)

(1) Location

Easting	5 39852.931
Northing	38 41590.234
Elevation (m)	476.97

(2) Azimuth Markers

Azimuth Marker	Azimuth (mil)	Distance (m)
SCP ROCKY (ND 407 417) Quad Marker	1487.453	900
SCP GRASS 2 (ND 407 409) Quad Marker	2301.490	1100
SCP METRO (ND 391 405) Quad Marker	3796.101	1300
SCP KETCH (ND 380 424) Quad Marker	5225.292	2000

Chapter 12
Environmental Protection

12-1. General. DPW, Environmental Quality Division (EQD), is located at Building 2515 on Ringgold Road, 442-2715/3266.

12-2. Purpose. Proper use of the Fort Sill Military Reservation in accordance with published environmental regulations will ensure long term success of the training mission through quality lands on which to train.

12-3. Policy.

a. Active Army, Reserve Component, DA Civilians, Civilian contractors, and all other users of Fort Sill Military Reservation are responsible for proper use, protection, and conservation of the Fort Sill Military Reservation and compliance with regulations pertaining to natural resources and the environment. The regulation governing this is AR 200-1.

b. DPW EQD uses a Request for Environmental Review to assess planned training events for compliance with environmental policy. Event types that require review are identified in paragraph 12-4. This form may be found in the RFMSS library. The approved **form** must be on site at the training event.

12-4. Restrictions.

a. Restricted Targets. Do not intentionally shell ponds, trees, or wooded areas.

b. Trees. Cutting, pushing, damage to, or removal of trees is prohibited. Directorate of Public Works, Environmental Quality Division, approves trimming or removal of trees, for safety or training reasons.

c. Planted Fields.

(1) Ft Sill leases land to area farmers. Agriculture fields are off-limits to vehicular traffic. However, there are grass lanes and open acres around many of the crop fields that are available for training use. These grass areas may be managed as hay fields but are available for unit training.

(2) Class B sludge is applied to agricultural fields on Fort Sill. Fields will be placed off-limits for a period of time after application for health reasons. Fields that are off-limits due to application of sludge will be listed in the weekly range bulletin and listed in RFMSS as unavailable due to maintenance.

(3) This agricultural lease program is a Win-Win program for the installation and the farmers. The installation does not have to allocate operating funds to mitigate wildland fire risks. The farmers win due to the availability of land for crops.

d. Ponds. Do not set up equipment within 200 meters of any pond unless scheduled to conduct training that requires use of a water site such as reverse osmosis purification unit (ROWPU) training. These training events require a Request for Environmental Review.

e. Training Area Renovations. Training areas or portions thereof posted as closed for renovation are off limits to all vehicles.

f. Historical and Archeological Sites. Do not disturb historical and archeological sites. This includes ruins. Report all archeological and historical findings to Range Operations or DPW, Environmental Quality Division. Intentional disturbance or destruction of archeological or historical sites and artifacts is punishable, under provisions of the Archeological Resources and Protection Act, as a felony. Because of the large number of important historic and prehistoric cultural resource sites, metal detecting as a recreational activity at Fort Sill is prohibited, except by permit specified under AR 405-80, Granting Use of Real Estate.

g. Cemeteries. Cemeteries are off limits to tactical vehicles. This includes a 200m radius around the cemetery.

h. Digging. Any soil excavation in support of training such as construction of foxholes, field latrines, soakage pits, parapets, etc. require a Request for Environmental Review to be submitted with the training land request. Units will specify training area and type of digging activity expected.

i. Large Training Exercises. Training exercises involving more than 500 personnel require a Request for Environmental Review regardless of the type of training employed.

j. Gray Water. Mobile kitchens and ROWPUs may discharge gray water on site provided it is in a location where the water can be completely absorb into the ground. Water may NOT be allowed to drain into any ponds, streams, creeks, or storm water ditches. All ROWPU back flushings must be drained into the sanitary sewer system.

k. Creeks and Streams (Riparian Areas). No crossing or driving thru (upstream or downstream) is allowed unless an existing crossing is present. No parking or equipment set up is allowed within 60ft of stream channels.

12-5. Release of Hazardous Materials. Report the release of any hazardous substances into the environment, immediately, to DPW, Environmental Quality Division, or Range Operations. Hazardous substances may include, but are not limited to, POL products, solvents, antifreeze, etc. Failure to report or cleanup spills could result in the OIC's decertification and possible fines levied by the Environmental Protection Agency. All spills will be cleaned IAW Environmental Quality Division policy and disposed of as prescribed by the Compliance Assurance Branch of EQD.

12-6. Fire Prevention. Dry weather conditions create a high fire risk on the Fort Sill Military Reservation. Fires on the reservation not only destroy the ecology, but also disrupt training and cause the loss of valuable time. To minimize the potential fire hazard, unit commanders will ensure all Soldiers comply with the following policies:

a. The FSFD Chief, in coordination with Range Operations, establishes the firing restriction status daily, or more often if conditions change. There will be separate firing restriction statuses for East, West, and Quanah ranges. The following are standard Fort Sill firing restriction statuses:

(1) Green - all authorized ammunition, projectiles, pyrotechnics/simulators, and explosives may be used in training activities approved by Range Operations.

(2) Amber - partial restrictions apply. All white phosphorus, illumination, smoke, and tracer ammunition/projectiles; pyrotechnics/simulators, and explosives expended must stay in the impact area.

(3) Red - partial restrictions apply. Only ball, inert, and point-detonating high-explosive projectiles may be used. All projectiles expended must stay in the impact area. No MLRS or HIMARS firing. Artillery rounds will be visually observed. Use of stoves must be approved by the FSFD Fire Prevention (442-5911).

(4) Black – no live or blank fire to include the use of pyrotechnics as well as privately-owned weapons.

b. Exceptions to Policy.

(1) Exceptions to policy (ETP) for use of ammunition and pyrotechnics requires close coordination between the unit commander, the Range Officer, and the Fire Department Chief. The approving authority for the ETP and for the risk management worksheet vary varies depending on the current level of firing restriction. The approving authorities are identified in the table below. These authorities will not be delegated. In the event of a disagreement between the commander and the Range Officer, the approval authority becomes the next higher level within the installation chain of commander.

Status	**Risk Management Authority**	**Exception Authority**
Amber	Battalion Commander	Range Officer
Red	Brigade Commander	FCoE G-3/5/7 or Chief of Staff
Black	Brigade Commander	Fort Sill CG

(2) The requesting commander will forward the ETP request with supporting documents to the approving authority.

(3) The ETP will be submitted using a FS Form 51, Fort Sill Staff Action Memorandum (SAM) containing the following:

(a) A summary of the training to be conducted. Specifically identify those activities that require the exception to policy.

(b) Explanation why the training must be conducted at that time.

(c) DD Form 2977, Deliberate Risk Assessment, for the training event. Specific actions to mitigate wildland fires will be highlighted.

(d) A map of the applicable training areas to include impact areas for live fire events depicting current fuel loads and prevailing wind direction for the planned training dates.

(4) Units may submit ETPs up to six weeks prior to scheduled training events even though no firing restrictions are currently in place.

(5) An ETP may be established for all users at specific training sites within a range complex based on mitigation measures accomplished. For example, an ETP may be established at the Night Infiltration Course when the fire breaks in the area are properly maintained and the vegetation in beaten zone for the machine guns does not present a fire hazard.

(6) The Range Officer or the FSFD Chief on Duty may suspend an ETP at any time.

c. Any time sustained wind are in excess of 15 KNOTS, Range Operations will suspend the use of all illumination, white phosphorus, flares, PYRO and tracers regardless of the range status, and all exceptions to policy are suspended.

d. Hand flares will be suspended if winds exceed 15 KNOTS.

e. Commanders must emplace the necessary risk mitigations before using blank ammunition in or around any vegetation while under Amber and Red Range Status. This includes, but is not limited to, a establishing a fire fighting detail of no less than five Soldiers immediately available to put out fires caused by blank ammunition.

f. Careless discarding of matches, cigarettes, and combustible materials is prohibited.

g. No open fires allowed on the range training complex to include grills of any kind. A Hot Work Permit issued by the Fort Sill Fire Department (FSFD) is mandatory for any flame, heat or spark producing activities

h. Smoking is not permitted in Army vehicles or within 100 feet of ammunition or petroleum products.

12-7. Firebreak Construction and Maintenance.

a. DPW is responsible for constructing and maintaining firebreaks throughout the range and training land complex, including in impact area buffer zones, based on the Wildland Fire Prevention and Response Plan produced by the FSFD and approved by the GC.

b. Approved new fire breaks will be constructed only after a surface clearance of the firebreak area and 50 meters to each side is completed by EOD. An FLA with medic and EOD will be on site but at least 1000 meters away from the firebreak construction personnel during construction of the new firebreak within the impact area buffer zones. EOD will conduct a surface clearance of the new firebreak upon completion.

c. Personnel performing firebreak construction or maintenance will check in and out to the range and training land complex through the range firing desk.

d. If suspected UXOs are encountered while conducting firebreak construction and maintenance, follow procedures in para 4-4 of this regulation.

e. Personnel performing firebreak construction and maintenance within the impact area buffer zones will wear protective equipment equivalent to Personal Protective Equipment Level 1 or higher as defined in DA Pam 385-63.

12-8. Firefighting/Fire Reporting.

a. Report **any and all fires, inside or outside the impact areas,** to Range Operations. Primary FM voice on (34.50 West Range, 38.50 East Range) Range Operations Frequencies, alternate via landline.

(1) Actions if fire is observed outside the impact area: ceasefire immediately, report location, size, and wind direction to Range Operations and begin fighting the fire.

(2) Actions if fire is observed inside the impact area: report location, size, and wind direction to Range Operations immediately. Continually monitor the fire and be prepared to fight the fire if it exits the impact area.

b. Responsibilities.

(1) The Fort Sill Fire Department, in coordination with Range Operations, will take action necessary to extinguish the fires. DPW, Natural Resources Branch, also has range firefighting responsibilities in coordination with the Fort Sill Fire Department.

(2) The senior fire department officer, present at the fire, has the responsibility for alerting (ordering into action) any or all standby or supplemental forces outlined in this regulation. When considered necessary to promptly control and extinguish fires or rescue personnel, the senior fire officer has the authority to commandeer military vehicles, equipment, materials, and personnel per AR 420-90. Units in training with Pyro, live ammunition, or stoves will always have immediately available firefighting equipment. The minimum essential firefighting equipment for training is fire flappers, shovels, and standby fire fighting troops.

c. Fire Department will contact the Range Operations each day, in order to determine the fire status for that day. Units are informed of fire status during check-in and whenever conditions change via the range safety net.

12-9. Stray Livestock or Wildlife.

a. Unit and individual responsibilities.

(1) Personnel discovering stray livestock on the military reservation will report the location and number of animals to Range Operations.

(2) Report any wildlife that has been shot or accidentally injured to Range Operations.

(3) Units will check fire if continued firing could cause injury of livestock or wildlife. This includes wildlife (deer, elk) observed in impact area.

(4) Observers will not call for fire in areas where wildlife would be injured or killed.

b. Range Operations responsibilities are as follows:

(1) Order check-fire in appropriate areas when animals are reported in impact areas, and expeditiously drive animals from the areas, utilizing a helicopter when practical.

(2) Provide the Provost Marshal's Office the number, location, and description of livestock.

(3) Notify Sportsman Services Branch of the incident for further investigation or assistance.

c. Provost Marshal responsibilities are as follows:

(1) The Provost Marshal will take immediate steps to locate the owner of the trespassing livestock.

(2) Upon discovery of the owner, Provost Marshall will require immediate removal of the animals from the military reservation.

Chapter 13
Survey Control

13-1. Purpose. This chapter outlines procedures for the establishment, collection, maintenance, and dissemination of survey information for the Fort Sill Military Reservation and surrounding areas.

13-2. Policies.

a. Horizontal position and Elevation. Positions of all Survey Control Points (SCPs) within the Fort Sill Military Reservation will be listed in both Geographic position (latitude and longitude) and Universal Transverse Mercator (UTM) grids. GEOTRANS is the preferred software for converting between UTM and Geographic positions.

(1) Horizontal control will be computed and published relative to the North American Datum 1983 (NAD83). All permanent surveys will be adjusted to the NSRS 2007 National Readjustment. Data computed using NAD83 may be listed as World Geodetic System 1985 (WGS84), however, the body of the trigonometric listing must discuss this information for clarification.

(2) Elevations of all SCPs within the Fort Sill Military Reservation will be listed in both Meters and Feet. The international Meter is considered the default and conversions will use the international foot conversion (0.3048) unless otherwise described. Vertical control will be computed and published relative to the North American Vertical Datum 1988 (NAVD88). VERTCON is the preferred software for

converting between NAVD88 and NGVD29. Elevations determined from VERTCON will not be listed as more accurate than 5th order.

b. Permanent Control Markers. Permanent markers are those stations established for the purpose of being published in a trigonometric listing and constructed using concrete or an otherwise permanent structure.

(1) For the purposes of this regulation, Survey Control Points (SCP) are those permanent stations that are intended for use by Surveyors for extending control, mapping, charting, GIS, etc. These stations are not intended for use to orient or be occupied by tactical platforms other than Survey assets. The preferred marker to be used for a permanent SCP is a survey disk, although many older points are marked using an ammo casing, bolt, or rebar.

(2) For the purposes of this regulation, Supplemental Points are those permanent stations that are intended for use in support of training (i.e. Firing Points, Laser Points, and Declination Stations). The preferred marker to be used for a Supplemental Point is a survey disk, although many older points are marked using an ammo casing, bolt, or rebar and should be considered valid if stable.

(3) Permanent Control Markers will be constructed using concrete or set in an already existing permanent structure. New stations will not be smaller than eight inches in diameter and should include rebar in the construction. When possible, the monument will extend below the frost line for stability. All efforts should be made to place the monument in a location protected from hazards (traffic, mowing, etc.). SCPs will be set flush with or just below the surface of the ground to protect the point. Supplemental Points should be set slightly raised above ground level to aid in drainage and to make location of the point easier.

c. Witness Markers. All SCPs will have a permanent witness marker placed 1 to 1.5 Meters north of the point when practical, except for when the monument is located on an airfield or landing zone. Some critical SCPs are marked with highly visible black and white Quad Markers plumbed over the point for use as azimuth control or as an End of Orienting Line (EOL). All Supplemental Points will have a white fiberglass marker placed 1 to 1.5 Meters north of the point when practical.

d. Approval. Units are not permitted to install concrete monuments without prior written approval from the Chief, Survey Information Center (SIC), Range Branch, Directorate of Plans, Training, Mobilization, and Security (DPTMS). If the request is approved, SIC personnel will supervise the monument emplacement. Upon completion of the survey, units must submit copies of all fieldwork and computations to the SIC for a final check and filing.

e. Accuracy. Accuracy of a Survey Control Point or Supplemental Point is dependent upon both the type of monument and the methods used to determine the horizontal and vertical data.

(1) Survey Control Points must be constructed in accordance with US Army Corps of Engineers publication EM 1110-1-1001, Survey Markers and Monumentation, in order to be published at a specific accuracy.

(2) Survey specifications as detailed in the Federal Geodetic Control Committee (FGCC) Standards and Specifications for Geodetic Control Networks will be used to determine the accuracy of high order networks (3rd order and higher) for conventional surveys (i.e. traverse, intersection, etc.). For GPS networks, the FGCC Geometric Geodetic Accuracy Standards and Specifications for using GPS Relative Positioning Techniques will be used to determine the accuracy of high order networks (3rd order and higher) for GPS surveys. Artillery survey (4th and 5th order) accuracies are detailed in FM 6-2. Survey accuracy requirements are summarized in table 14-1.

Table 13-1. Survey Accuracy Requirements

HORIZONTAL CONTROL POINTS	**CLOSING ACCURACY**
First Order	1 part in 100,000 (minimum)
Second Order, Class I Class II	1 part in 50,000 1 Part in 20,000
Third Order, Class I Class II	1 Part in 10,000 1 part in 5,000
Artillery Fourth Order	1 part in 3,000 or √K for Traverse over 9,000 meters
Artillery Fifth Order	1 part in 1,000 (firing position)
VERTICIAL CONTROL POINTS	**CLOSING ACCURACY**
First Order, Class I Class II	3mm 4mm
Second Order, Class I Class II	6mm 8mm
Third Order	12mm
Artillery Fourth Order	√K
Artillery Fifth Order	+2 meters for distance less than 4 km 1.2 x √K for distance greater than 4 km

LEGEND: K = distance in kilometers

13-3. Responsibilities

a. Range Operations. The Survey Information Center (SIC), Range Operations, DPTMS, has overall responsibility for monumented survey control points including SCPs, benchmarks, firing positions, orienting stations, radar positions, laser positions, declination stations, and observation posts on Fort Sill. In the fulfillment of this mission, SIC will:

(1) Perform necessary field work and computations to establish permanent firing positions, orienting stations, end of orienting lines, artillery and geodetic control points,
and vertical control points.

(2) Conduct astronomic observations when required for precise azimuth determination.

(3) Maintain a current file, including supporting field notes and computations, on established SCPs.

(4) Plan future extensions of geodetic and artillery control, both horizontal and vertical.

(5) Plan extensions and supplements to firing positions, radar positions, laser positions, and observation posts.

(6) Evaluate and take action on requests for additional SCPs and coordinate the efforts of agencies involved.

(7) Annually, make a complete inspection of firing positions and replace missing or destroyed monuments and witness posts and if possible or needed, request support from other post survey assets to assist in the inspections.

(8) Annually, recover artillery, geodetic control points and bench marks and take the appropriate action needed.

(9) Install and maintain permanent metal survey quad markers over designated SCPs.

(10) Maintain the Fort Sill calibration base line which is used to calibrate precise distance measuring equipment, both military and Civilian.

(11) Biennially, update, publish, and disseminate both artillery/geodetic trig lists and firing position trig lists.

(12) Update and revise firing positions, radar positions, and laser positions overprint for the Fort Sill special range map, as required.

(13) Disseminate to military users, an update to the trig list for changed or new survey data not yet published.

(14) Support activities and serve as liaison for the National Geospatial Intelligence Agency (NGA), National Oceanographic and Atmospheric Administration (NOAA), Army Corps of Engineer (CE), U.S. Army Topographic units, and other U.S. Government surveying agencies when these organizations are performing survey functions on Fort Sill.

(15) Maintain liaison with and advise all survey units on post, on matters pertaining to survey.

b. 14-3. With the written approval from the Chief, Range Branch, the OTC Fire Support Test Directorate is authorized to establish permanent SCPs and firing positions to support its testing requirements. However, existing Fort Sill SCPs and firing positions will be used whenever possible. Upon completion of the survey and prior to the use of these new SCPs and firing positions, the OTC Fire Support Test Directorate must furnish copies of all fieldwork and computations to the SIC for a final check and filing. The OTC Fire Support Test Directorate will be responsible for the maintenance, marking, and update of its points. SCPs and firing positions are required to be removed after the testing is completed, unless written approval is granted to maintain the point on Fort Sill.

c. Directorate of Public Works. The Directorate of Public Works (DPW) upon request will—

(1) Upon approval of work order (DA form 4283) and quad chart, manufacture, repair, and repaint permanent quad markers (see para 2-3).

(2) Upon service order request, furnish an operator and a truck-mounted auger to make excavations for survey monuments.

(3) Upon request, DPW, Master Planning will provide SIC with construction updates and GIS information for buildings, roads, or facilities planned for any area within Fort Sill boundaries.

d. Users. Users of Survey Control on Post. Users will immediately notify the SIC if any SCPs, firing positions, or witness posts are missing or damaged.

13-4. Survey Procedures for Training Area Artillery Fire

a. Live Fire. Survey personnel will use the tactics, techniques, and procedures (TTP) prescribed in FM 6-2 when surveying artillery and target acquisition system positions. Due to the proximity of the civilian population to the Military Reservation, an additional safety precaution is required for all surveys. All surveys for positions involving

live fire must be closed on the starting point or second known point. This is to include conventional surveys, Position and Azimuth Determining System (PADS) surveys, and Improved Position and Azimuth Determining System (IPADS) surveys.

b. Circular Error Probable (CEP). Due to the circular error probable (CEP) of PADS/IPADS surveys, computation of the azimuth of orienting lines which utilize a PADS/IPADS point is prohibited. Specifically this prohibition includes computing the azimuth between two PADS/IPADS points or between a conventional point/SCP and PADS point. Azimuth lines established using PADS/IPADS will be accomplished by autoreflection or the two-position mark method.

c. PADS/IPADS Update. Unit survey personnel will not drive PADS/IPADS vehicles over Fort Sill survey control points marked with quad markers. An autoreflection will be accomplished during update procedures at points with quad markers, as prescribed in FM 6-2.

d. Survey Data. All survey data, to include PADS/IPADS data, will be recorded in a Level, Transit, and General Survey Record Book or similar field notebook as prescribed in FM 6-2. Field notebooks and/or conventional computations will be subject to inspection by Range Branch SIC personnel.

e. All survey data will be verified by a second independent means. The primary means of checking position and elevation is a handheld GPS receiver (i.e. DAGR). Graphic Resection, Resection, or map spot may be used when necessary. The primary means to check an azimuth is astronomic observation. A magnetic check or a dual DAGR sub-mil capability check may be used when necessary. All survey computations will be verified by a second Soldier/Marine to ensure integrity of the Survey.

Appendix A

Facilities and Courses. This section provides information on specific ranges, facilities, and courses for individual, small arms, direct fire, and crew served weapon training.

Confidence Obstacle Course (COC)	
Description:	Located at ND 565/388; 24 obstacles in 4 groups of 6 each; Obstacles vary in degree of difficulty; best suited for groups of 200 persons or less.
Responsibility And Conduct:	Each of the 6 groups of obstacles is designated by a color; separate personnel into equal groups at each obstacle; personnel proceed through the obstacles by ascending order (i.e., 5 to 6, 6 to 7, etc.). Prior coordination is required with Range Operations for the SOP and keys.
Safety Precautions:	Personnel, afraid of any obstacle, are not compelled to attempt the obstacle under any circumstance; do not negotiate obstacles at high speed; do not hold competitions, for speed, on this course. Do not use high/ hazardous obstacles when wet or slippery. Exercise close supervision to prevent injuries. Consider weather conditions and its effects on personnel prior to conducting the course. Safety Officer/NCO will report to Range Operations to receive the safety book and a safety briefing
Weapons Authorized For Live Fire:	NONE
References:	TC 3-22.20, Fort Sill Reg 385-10
Practice Hand Grenade Range (HGD)	
Description:	Located at ND 585/348
Responsibility And Conduct:	Units will follow procedures outlined in FM 3-23.30, chapter 3. Using unit is responsible for police of grenades from range.
Safety Precautions:	Personnel will assume a prone position when cover is unavailable. Do not attempt to recover practice grenades that fail to function until 10 minutes or more have elapsed.
Weapons Authorized for Live Fire:	NONE
References:	FM 3-23.30

	Night infiltration Course (NIC)
Description:	Located at ND 653/374. This range is used to train individual soldiers on combat movement techniques in a realistic live-fire environment.
Responsibility And Conduct:	Soldiers move below live overhead fire at night while demonstrating the individual tactics and techniques of the low and high crawl.
Safety Precautions:	Safeties will ensure all personnel on the lane are below the highest obstacle through to the end of the course. If pyrotechnics are used they will be used in the concrete pits provided. Hand flares will not be used when winds exceed 15 MPH.
Weapons Authorized For Live Fire:	M240
References:	FM 3-23.68
Fire and Movement Range	
Description:	Located at ND 6535/3745. This range is used to train soldiers and buddy/teams on basic fire and movement techniques against stationary infantry targets. Soldiers must select cover and concealment positions, move while under fire, apply principles of teamwork and use suppressive fire on the enemy.
Responsibility And Conduct:	Negotiate Fire and Maneuver Lane in groups of two, engaging pop-up targets with live ammunition. Soldiers must demonstrate proper techniques of cover, concealment, suppression, and teamwork. Movement to Friendly Lines Lane is negotiated in groups of two, reacting to snipers, chemical attacks, and obstacles. Soldiers re-enter friendly lines by properly executing Challenge and Password Procedures.
Safety Precautions	Lane NCOs will positively control direction, rate of movement, and weapons. OIC / NCOIC will coordinate all movement into adjacent lanes, by use of phase lines and radio communications with Lane NCOs. Lane NCOs control all loading of ammunition and are responsible for clearing all weapons, prior to personnel departing his lane. Maintain continuous communications between Lane NCOs and the OIC of firing. Personnel will depart the area, solely under the supervision of an officer or NCO. One squad radio per Lane NCO and sufficient radios to continually monitor all personnel movements is required. All personnel will wear Kevlar's at all times on live fire lanes.
Weapons Authorized For Live Fire:	M16/M4 Carbine
References:	FM 3-22.9

	Squad Defense Range
Description:	Located at ND 6537/3735. This range is used to train individuals and squads on employing mutually supporting fires from defensive positions against automated stationary infantry targets from 50 meters to 300 meters.
Responsibility And Conduct:	Soldiers will move in a tactical wedge to the defensive firing positions and then monitor their sectors of fire for enemy targets. Soldiers will use interlocking fields of fire.
Safety Precautions:	Lane NCOs will positively control direction, rate of movement, and weapons. OIC / NCOIC will coordinate all movement into adjacent lanes, by use of phase lines and radio communications with Lane NCOs. Lane NCOs control all loading of ammunition and are responsible for clearing all weapons, prior to personnel departing his lane. Maintain continuous communications between Lane NCOs and the OIC of firing. Personnel will depart the area, solely under the supervision of an officer or NCO. One squad radio per Lane NCO and sufficient radios to continually monitor all personnel movements is required. All personnel will wear Kevlar's at all times on live fire lanes.
Weapons Authorized For Live Fire:	M16/ M4 Carbine
References:	FM 3-22.9

SFC Tony K. Burris Complex Hand Grenade Range (HGW)	
Description:	Located at ND 589/348. This is a live hand grenade range with 6 positions.
Responsibility And Conduct:	Familiarize personnel with safety precautions for handling, throwing, and disposing of live grenades, before live grenade training begins. Soldiers will throw at least one fuzed practice grenade, prior to throwing casualty producing grenades, from the live bays. An officer/NCO will supervise throwing of casualty producing grenades, while an OIC/NCOIC controls all activities from an observation bay, located at the rear of the throwing bay. Each bay will have an officer/ NCO as an Assistant Instructor (AI). If a live grenade is dropped, after removing the pin, both the AI and the student in the bay will shout “GRENADE” as the AI immediately evacuates the student and then himself/herself from the bay.
Safety Precautions:	**Only EOD will police duds from this range and defuse live or fuzed practice hand grenades.** If the pin is removed from any live grenade, it must be thrown. NO EXCEPTIONS. Do not remove fragmentation grenades from the bottom half of the individual fiber containers until just prior to throwing. If, after opening the fiber container, it is discovered that the grenades were packed bottom up, with the safety pins either not in place or visible, contact EOD for disposal. Do not disturb or remove the grenade from its container. All personnel, within 150 meters of the throwing position or impact area, will wear - **approved protective helmets, protective body armor (flak jackets), single hearing protection, and proper eye protection**. If a live grenade fails to function, all personnel must remain under cover for 10 minutes. The OIC/NCOIC will immediately contact Range Operations. Range Operations will notify EOD. Personnel are not allowed downrange nor will they throw any additional grenades until EOD arrives to dispose of the dud grenade.
Weapons Authorized for Live Fire:	Hand Grenades
References:	FM 3-23.30, TM 9-1300-100, TM 9-1300-214

SGT Archibald Molbone Range (MHC)	
Description:	Located at ND 451/348. Range consists of three ranges, M203 Zero/Qualification, AT4, and M18
Responsibility And Conduct:	High explosive and training ammo may be fired on this range. Use provisions from tables I, II, & IV of FM 3-22.31. Units may prescribe and fire a familiarization course, if adhering to all governing safety regulations. Using unit will clear all personnel, vehicles, and equipment from the range upon completion. Do not park vehicles on this range while not in use. Personnel can request keys online and can obtain them from Range Operations Branch, Building 1490.
Safety Precautions:	Personnel within 100 ft of firing positions will wear Kevlar's, flak vest and single hearing protection. Firers will confine their firing to targets located in the area to the front of the firing point. Do not fire grenades at points closer than the nearest target. EOD and Range Operations are the only personnel authorized forward of the firing line at any time. Each firer will report the number of duds he/she fired to the OIC/NCOIC. Report the total number of duds to Range Operations at the end of firing. If a round fails to fire, treat it as a hang fire and perform the following procedures: (1) Firer shouts "MISFIRE" while keeping the weapon aimed at the target; (2) Wait 30 seconds, open the breach, and examine the primer; (3) if the primer is not dented, the firing mechanism is at fault and the round is safe to fire from a functional weapon; (4) if the primer is dented, attempt to re-fire the round; if it fails a second time, shout "MISFIRE," keep the weapon pointed downrange, wait 30 seconds, remove the round, separate the round and return it to post ammunition. Additional safety precautions, as outlined in FM 3-23.31, apply to this range. For the AT4, fire weapons only between the right and left limits, which are marked by red and white striped poles. OIC/NCOIC will direct passage to the rear line of the firing line (back blast area). If, after following misfire procedures, the weapon fails to fire, move it to a safe place, inform Range Operations, and request EOD assistance. EOD will ascertain its suitability for transportation. If deemed unsafe to transport, EOD will dispose of it in place. If deemed safe to transport, the using unit will return it to post ammunition. Only EOD and Range Personnel are allowed forward of the firing line. EOD must receive permission from Range Operations to move forward of the firing line. Personnel on this range will wear Kevlar's at all times.
Weapons Authorized for Live Fire:	M203, AT4, M18
References:	FM 23-33/FM 3-22.31

U.S. Weapons Complex (AT4 Range) Sub-Caliber Antitank Range AT4/SAW	
Description:	Located at ND 604/387.
Responsibility And Conduct:	Use only 9mm sub caliber ammo when firing the AT4. Using unit will follow the procedures as outlined in FM 23-33, appendix D.
Safety Precautions:	See Live Rocket Launcher Range (MHC)
Weapons Authorized for Live Fire:	AT4 (Sub caliber), M249 (SAW), M24O, M203
References:	FM 3-22.68
PFC George H. Wanton Range Complex (TF1)	
Description:	25 meter range IA (TF1) located at ND 615/450. TF1A consists of 80 firing points.
Responsibility And Conduct:	Range is a live fire range.
Safety Precautions:	Clear all weapons prior to any personnel moving downrange. OIC/NCOIC will ensure that all weapons are kept pointing up and downrange when not firing.
Weapons Authorized for Live Fire:	M16, M4 Carbine, 9MM,12 Ga
References:	FM 3-22.9, FM 3-23.35
1LT Fredrick F. Henry Facility (ITTT)	
Description:	Located at ND 566/380. Consists of 4 training stations and 10 lanes, for grading individual tactical training techniques. Each lane is designed for two soldiers moving as a team.
Responsibility And Conduct:	At the orientation/demonstration area, Soldiers are oriented on techniques of movement through unimproved terrain. They are then separated into equal groups and negotiate both sets of practice lanes, by employing the aforementioned movement techniques.
Safety Precautions:	Refer to ITTT SOP.
Weapons Authorized For Live Fire:	NONE
References:	

Combat Conditioning Course (CCC)	
Description:	Located at ND 568/342. Consists of 18 obstacles designed to promote physical fitness and combat skills. Designed for 220 soldiers or less.
Responsibility And Conduct:	Divide using unit into four groups or less. Each group will start six individuals in each lane at 30 second intervals. Remaining Soldiers will start as a member of his/her group finishes. The course is large enough to accommodate four individuals at all stations, except at the 3 rope bridge.
Safety Precautions:	Do not compel personnel, under any circumstance, to attempt any obstacle that he/she is afraid to attempt. Do not use high or hazardous obstacles when wet or slippery. Exercise close supervision to prevent injuries. Consider weather conditions and its effects on personnel prior to conducting the course. Wear gloves to avoid rope burns on the course. Safety Officer/NCO will report to Range Operations to receive the safety book and a safety briefing. Refer to the Range SOP for further guidance.
Weapons Authorized For Live Fire:	NONE
References:	FM 7-22

East Gas Chamber (EGAS)	
Description:	Located at ND 589/341. Consists of three 50 man concurrent training areas, and a 50-man overhead bleacher cover. The course is designed to accommodate 250 soldiers or less.
Responsibility And Conduct:	Soldiers are separated into 3 groups and rotated between the concurrent training stations, culminating in a mask confidence exercise with CS gas in the NBC Chamber. To set up an improvised generator follow these steps: (1) Place a burning candle in the center of the table, in the chamber, and cover it with an empty can, with holes punched in it. (2) Place some CS capsules on top of the can, causing a buildup in concentration of CS. (3) Add CS capsules to the top of the can, as needed, to build or maintain the desired concentration of CS gas.
Safety Precautions:	Only MOS 74D Soldiers are authorized to use the CS. Do not use CS outside of the chamber. CS capsules are the only form of CS authorized, due to oxygen restrictions of CS Grenades. Keep personnel, not participating in the chamber, upwind at a safe distance. Remove all contact lenses prior to entering the chamber. Personnel who have the following conditions are exempted from participation in the chamber exercises: (1) pregnancy; (2) open wounds; (3) heart problems; (4) severe acne.

Weapons Authorized for Live Fire:	NONE
References:	FM 3-11.4
Dugout 11 (DO 11)	
Description:	Located at ND 500/361.
Responsibility And Conduct:	
Safety Precautions:	Only 105mm ammunition may be fired in support of the Dugout Shoots (DO 11 & DO 13). Rounds may not impact closer than 100 meters in front of the dugouts.
Weapons Authorized for Live Fire:	NONE
References:	
Dugout 13 (DO 13)	
Description:	Located at ND 496/376.
Responsibility And Conduct:	
Safety Precautions:	Only 105mm ammunition may be fired in support of the Dugout Shoots (DO 11 & DO 13). Rounds may not impact closer than 100 meters in front of the dugouts.
Weapons Authorized for Live Fire:	NONE
References:	
Mow-Way House (MOH)	
Description:	Located at ND 497/350.
Responsibility And Conduct:	See Range Operations
Safety Precautions:	See Range Operations
Weapons Authorized for Live Fire:	M60, M240, M16/M4, M249 and M2
References:	AR 385-63
Automated Field Fire Range (AFF)	
Description:	Located at ND 586/361.
Responsibility And Conduct:	Consists of 32 firing positions with remote targets located at distances of 75, 175, and 300 meters from the firing line. Each lane is equipped with a Location of Miss and Hit (LOMAH) target system.
Safety Precautions:	Prior to firing, all personnel will receive a safety briefing. OIC will control all movement downrange. Firers will keep weapons pointed up and downrange when not firing. “Semiautomatic” will be the only weapon setting allowed for firing.

Weapons Authorized for Live Fire:	M16/M4
References:	FM 3-22.9
25 Meter Range III (TF3)	
Description:	Located at ND588/366.
Responsibility And Conduct:	Consists of 60 firing points used for zeroing, Advanced Rifle Marksmanship and Alternate Course C Qualification.
Safety Precautions:	Prior to firing, all personnel will receive a safety briefing. OIC will control all movement downrange. Firers will keep weapons pointed up and downrange when not firing. "Semiautomatic" will be the only weapon setting allowed for firing.
Weapons Authorized for Live Fire:	M16/M4, 9MM,12 Ga
References:	FM 3-22.9
Modified Record Fire Range (MRF)	
Description:	Located at ND 633/392. Consists of 16 firing positions with target positions at 50, 75, 100, 150,175, 200, 250, and 300 meters from the firing line.
Responsibility And Conduct:	Serves as a Field Fire Range as well as a Record Fire Range for M16/M4
Safety Precautions:	Prior to firing, all personnel will receive a safety briefing. OIC/RSO will control all movement on the range and ensures weapons are pointed up and downrange at all times. Semiautomatic will be the only weapon setting allowed for firing.
Weapons Authorized for Live Fire:	M16/M4
References:	FM 3-22.9
Modified Record Fire Range (MRF2)	
Description:	Located at ND 5058/3799. Consists of 16 firing positions with target positions at 50, 75, 100, 150,175, 200, 250, and 300 meters from the firing line.
Responsibility And Conduct:	Serves as a Field Fire Range as well as a Record Fire Range for M16/M4
Safety Precautions:	Prior to firing, all personnel will receive a safety briefing. OIC/RSO will control all movement on the range and ensures weapons are pointed up and downrange at all times. Semiautomatic will be the only weapon setting allowed for firing.
Weapons Authorized for Live Fire:	M16/M4

References:	FM 3-22.9
Modified Record Fire Range (MRF3)	
Description:	Located at ND 591/372. Consists of 16 firing positions with target positions at 50, 75, 100, 150,175, 200, 250, and 300 meters from the firing line.
Responsibility And Conduct:	Serves as a Field Fire Range as well as a Record Fire Range for M16/M4
Safety Precautions:	Prior to firing, all personnel will receive a safety briefing. OIC/RSO will control all movement on the range and ensures weapons are pointed up and downrange at all times. Semiautomatic will be the only weapon setting allowed for firing.
Weapons Authorized for Live Fire:	M16/M4
References:	FM 3-22.9
Urban Assault Course (UAC)	
Description:	Located at ND 418/349
Responsibility And Conduct:	Trains individual Soldiers, squads and platoons on tasks necessary to operate in a built-up urban area. Consists of 5 stations including: Individual & Team Trainer, Grenadier Squad and Platoon Trainer, Grenadier Gunnery Trainer, Urban Offense/Defense Trainer, and Underground Trainer
Safety Precautions:	OIC will establish and maintain communications with Range Operations. Firers will keep weapons pointed up and downrange at all times.
Weapons Authorized for Live Fire:	M203, Training Practice rounds only. M16/M4C, 5.56 ball ammunition is authorized with Station 3 only.
References:	FM 3-06
SGT Sylvester Antolak Driving Range (BBDR)	
Description:	Located at ND 407/337. Designed for training new and inexperienced vehicle drivers. Consists of simulated city streets with traffic signs.
Responsibility And Conduct:	Using unit will establish and maintain communications with DPTMS, Range Operations. Licensed drivers will supervise student drivers at all times. Only wheeled vehicles are authorized on the “city streets.” Using units will repair any damage to signs prior to clearing the range. Units must schedule with Range Operations for use of this range.
Safety Precautions:	Observe posted traffic signs and speed limits while on this range. Drivers will only drive on existing roads and trails. Use ground guides when moving vehicles through the parking area.
Weapons Authorized for Live Fire:	NONE

References:	R 600-55, TC 21-305 Series
1000 Inch Range (KIR)	
Description:	Located at ND 501/353. Consists of 16 firing points with stationary targets located at 10 meters used to conduct the Ten Meter Firing Table for the M60, M249 and the M2.
Responsibility And Conduct:	Keys must be requested online and can be obtained at Range Operations Branch, building 1490.
Safety Precautions:	OIC/NCOIC will control all movement forward of the firing line. No personnel is allowed forward of the firing line until all weapons are cleared and safe, with dust covers facing up, bolts locked to the rear, and selector levers set to “safe.” Set weapons on safety blocks to be considered “safe.”
Weapons Authorized for Live Fire:	M60, M240, M16/M4, M249 and M2
References:	FM 3-22.68
Kerr Hill Machine Gun Range (KHM)	
Description:	Located at ND 429/346. Consists of 4 firing points with targets located from 100 to 1000 meters from the firing line for .50 cal, SAW, 7.62mm and MK-19 machine guns. Consists of 5 firing points for Combat Pistol Qualification Course.
Responsibility and Conduct:	Designed for Qualification 4 firing positions for machine guns and 5 firing positions for the Combat Pistol Qualification Course.
Safety Precautions:	Direct all firing within the white and black poles, which mark the left and right safety limits of each firing position. Movement in front of the firing lines is strictly PROHIBITED except for the CPQC. In the case of a misfire or stoppage of the .50 cal, SAW, or M240, follow these procedures: (1) Keep round locked in chamber for 5 seconds in the event of a hang fire; (2) After 5 seconds has elapsed, open the bolt and extract the round; (3) If the barrel of the weapon is hot, and the round is not or cannot be extracted within 5 seconds, close the bolt and allow the round to remain locked in the chamber for 5 minutes, due to the possibility of a cook-off (150 rounds fired in 2 minutes will heat a barrel sufficiently for a cook-off). All personnel will wear Kevlar’s at all times on the range. When firing 50C, do not occupy MHC. When firing M240, use only lanes 1, 2, 3 and do not occupy MHC.
Weapons Authorized for Live Fire:	.50 cal, M240, SAW, M24 Sniper Rifle, 9MM, MK-19 (TP ammunition only)
References:	FM 3-23.35, FM 3-22.68, FM 3-23.65
Tower 2 South (T2S)	
Description:	Located at ND 506/374. Consist of 30 lanes for zeroing..

Responsibility And Conduct:	Personnel can request keys online and can obtain them from Range Operations, Building 1490.
Safety Precautions:	Dugout 13 (DO 13) must be vacant. No personnel are allowed west of the firing line, there are known UXO in the area. All weapons must be cleared prior to any personnel moving forward of the firing line. OIC/RSO will ensure that all weapons are kept pointing up and downrange.
Weapons Authorized for Live Fire:	M16, M4 Carbine, M60, M240,M9 AND M2
References:	FM 3-22.9, FM 3-22.68, FM 3-23.35
Automated Record Fire Range (NRET)	
Description:	Located at ND 610/442. Consists of 16 firing points with remote targets located at distances of 50, 100, 150, 200, 250, and 300 meters from the firing line. Soldiers are allowed to fire from foxhole positions and from prone unsupported positions. Qualification Range.
Responsibility And Conduct:	
Safety Precautions:	OIC will report to Range Operations prior to the range to receive a briefing. Issue a safety briefing to all personnel prior to allowing them to enter firing line. No firers are allowed downrange. OIC/NCOIC will control all other movement to and from the firing line and downrange. Keep rifles pointed up and downrange when not firing. Set rifles to "semiautomatic" only for firing on this range.
Weapons Authorized for Live Fire:	M16, M4 Carbine
References:	FM 3-22.9
Crater Creek Demolition Area	
Description:	Located vicinity ND 373/353. Designed for emergency destruction of unserviceable or hazardous explosives.
Responsibility And Conduct:	
Safety Precautions:	Demolition shots at Crater Creek Demolition Range are limited to 5 lbs net explosive weight per shot, except for emergency destruction of MLRS pods, which will increase the net explosive weight to 1800lbs. Report size, time, location, and number of detonations to and approved by Range Operations prior to detonation.
Weapons Authorized for Live Fire:	Demolitions
References:	

Quanah Special Effects Fields	
Description:	Bounded by the following coordinates: ND 261/359 to 261/369 to 271/369 to 271/359 to 261/359.
Responsibility And Conduct:	Coordination with Falcon Range before firing is mandatory.
Safety Precautions:	
Weapons Authorized for Live Fire:	155mm
References:	
Liberty City One (Urban Training Complex) (LIB1)	
Description:	Located vicinity ND 5694/3949.
Responsibility And Conduct:	Consists of numerous CONNEX structures replicating an urban area.
Safety Precautions:	Liberty City 1 will be scheduled through Range Operations and further coordinated Company C, 434th FA Detachment for the keys.
Weapons Authorized for Live Fire:	Blanks only are authorized for use
References:	3-22.9/3-22.68
Liberty City 2 (Urban Training Complex) (LIB2)	
Description:	Located vicinity ND 5702/3937
Responsibility And Conduct:	
Safety Precautions:	Liberty City 2 will be scheduled through Range Operations and further coordinated 428th FA Bde for the keys.
Weapons Authorized for Live Fire:	Blanks only are authorized for use
References:	3-22.9/3-22.68
Live Fire Convoy Range (LFC)	
Description:	Located vicinity ND 621/393. Consists of numerous automated stationary and moving infantry and armor targets ranging from 10 meters to 600 meters, a building façade for MK19 and M203 TP only and two villages with static targets.
Responsibility And Conduct:	
Safety Precautions:	LFXs using this ranges are conducted under the provisions of paragraph 7-5 of this regulation.
Weapons Authorized for Live Fire:	M16, M4 Carbine, M249, M9, M60, M240, MK-19, and 50 Cal using Short Range Training Ammunition only

References:	FM 3-23.35, FM 3-22.27, FM 3-22.68, FM 3-23.65, TC 4-11.46
25 Meter Range II (TF2)	
Description:	Located at ND6355/3886.
Responsibility And Conduct:	Consists of 32 firing points used for zeroing, Advanced Rifle Marksmanship, and Alternate Course C Qualification.
Safety Precautions:	Prior to firing, all personnel will receive a safety briefing. OIC will control all movement downrange. Firers will keep weapons pointed up and downrange when not firing. "Semiautomatic" will be the only weapon setting allowed for firing.
Weapons Authorized for Live Fire:	M16
References:	FM 3-22.9
Improvised Explosive Device Lanes (IED1-3)	
Description:	Consists of numerous obstacles and IED simulation devices. Located at: IED1 **located in TA14, ND360/350**. IED2 **located at BBDR, ND405/338.**~~,~~ IED3, located in TA62, ND595/455
Responsibility And Conduct:	Used to train IED detection and defeat tactics, techniques and procedures. All IED simulations will be policed upon completion of the training event.
Safety Precautions:	Prior to conducting IED lanes, all personnel will receive a safety briefing. OIC will control all movement throughout the IED lane. Be aware of the PYRO status and ensure fire fighting instructions have been covered in the safety briefing.
Weapons Authorized for Live Fire:	Blank fire only.
References:	Center For Army Lessons Learned: 052-IED-A01
Live Fire Shoot House (LFSH)	
Description:	**Located vicinity ND 4187 3478. Building Clearance facility**
Responsibility And Conduct:	Maintained by DPTMS, Range Operations. This facility has multiple entry and exit points, hallways, rooms as well as breaching doors. This is considered a high risk range. Units should train on the Urban Assault Course and become proficient with entry techniques prior to using this facility.
Safety Precautions:	Firers must wear flak vest, Kevlar, hearing, and eye protection. Dry and Blank iterations must be done prior to utilizing live ammunition in this facility.
Weapons Authorized for Live Fire:	M16, M4 Carbine, 9MM, 12 GA
References:	FM 3-22.9

Blue Beaver Moving Target (BBMT)	
Description:	Located at ND 4192 3711. Consists of one moving armor target located 500 m from the base firing line. Additional stationary infantry targets (either non-automated or "Target in a Box" may be added. There are 20 firing lanes when used as crew-served weapons familiarization range.
Responsibility And Conduct:	Designed use of the range is aviation door gunnery/rocketry firing. The range may also be used to conduct crew-served weapons familiarization and maneuver LFXs
Safety Precautions:	LFXs using this ranges are conducted under the provisions of paragraph 7-5 of this regulation.
Weapons Authorized for Live Fire:	M9, M4, M16, M249, M240B, M2, MK19, 12GA
References:	FM 3-20.21, FM 3-23.35, FM 3-22.27, FM 3-22.68, FM 3-23.65, TC 4-11.46

Appendix B
References

Section I
Required Publications

AR 15-6
Procedures for Investigating Officers and Boards of Officers

AR 25-400-2
The Army Records Information Management System (ARIMS)

AR 200-1
Environmental Protection and Enhancement

AR 360-1
The Army Public Affairs Program

AR 385-63
Range Safety

AR 405-80
Management of Title and Granting Use of Real Property

AR 420-7
Natural Resources Land, Forest, and Wildlife Management

AR 420-90
Fire and Emergency Services

AR 600-55
The Army Driver and Operator Standardization Program (Selection, Training, Testing and Licensing)

ATP 3-09.50
The Field Artillery Cannon Battery

ATP 5-19
Risk Management

DA Pam 25-403
Guide to Recordkeeping in the Army

DA Pam 385-63
Range Safety

Section II
Related Publications

FM 3-09.70
Tactics, Techniques, and Procedures for M109A6 Howitzer (Paladin) Operations

FM 3-34-214
Explosives and Demolitions

FM 3-09.40
Tactics, Techniques, and Procedures for Field Artillery Manual Cannon Gunnery

FM 3-09.60
MLRS Operations

FM 6-2
Field Artillery Survey

ST 6-60-40
MLRS Platoon Leader's Handbook

DA Pam 385-64
Ammunition and Explosives Safety Standards

TM 9-1425-646-10-1
MLRS Operator's Manual (vol. 1)

TM 9-1425-646-10-2
MLRS Operator's Manual (vol. 2)

TM 9-2350-314-10
Paladin Operator's Manual

TM 43-0001-28
Army Ammunition Data Sheets for Artillery Ammunition: Guns, Howitzers, Mortars, Recoilless Rifles, Grenade Launchers and Artillery Fuzes

TB 11-1025-306-10-1
MLRS Fire Direction Software Operator's Manual (vol. 1)

TB 11-1025-306-10-2
MLRS Fire Direction Software Operator's Manual (vol. 2)

MIL-HNDBK-828A
Laser Range Safety

Fort Sill Reg 200-1
Recreational Use, Management, Harvest, and Protection of Natural Resources

Fort Sill Reg 385-10
Safety Regulation

Fort Sill Reg 420-90
Post Fire Regulation

Fort Sill Reg 725-1
Supply Procedures

Fort Sill Memo 95-1
Aviation, Army Aviation General Provisions and
Flight/Regulations

Fort Sill Suppl 1 to AR 190-5
Motor Vehicle Traffic Supervision

DMA Technical Manual 8358.1
Datums, Ellipsoids, Grids, and Grid Reference Systems

DMA Technical Report 8350.2
World Geodetic System 1984

STANAG 2373/QSTAG 269
Survey Accuracy Requirements for Surface-to-Surface Artillery

Section III
Other Directives

Supervision SIC, Range Operations, DPTMS Edition 5, Fort Sill, Trig List of Horizontal Control

Section IV
Prescribed Forms

FS Form 650
Fort Sill Range Violations

Section V
Referenced Forms

DA Form 4283
Facilities Engineering Work request

DA Form 4446
Level, Transit, and General Survey Record Book

DD Form 2977
Deliberate Risk Assessment

Glossary

Section I
Abbreviations

ARAC
Army Radar Approach Control

ARIMS
Army Records Information Management System

ASP
Ammunition Supply Point

BOC
Battery Operations Center

CALFEX
Combined Arms Live Fire Exercise

CE
Corps of Engineers

CEP
Circular Error Probable

COB
Center of Battery

COS
Chief of Section

CS
Chemical Smoke

DAGR
Defense Advanced GPS Receiver

DPTMS
Directorate of Plans, Training, Mobilization and Security

DPW
Directorate of Public Works

EOD
Explosive Ordnance Disposal

EOL
End of Orienting Line

FAC
Forward Air Controller

FGCC
Federal Geodetic Control Committee

FDC
Fire Direction Center

FM
Field Manual

FP
Firing Point

FSCM
Fire Support Coordination Measure

FSMR
Fort Sill Military Reservation

HPAAF
Henry Post Army Airfield

IAW
In Accordance With

IFR
Instrument Flight Rules

IPADS
Improved Position and Azimuth Determining System

ISM
Installation Safety Manager

LSO
Laser Safety Officer

LTA
Local Training Area

LP
Laser Point

LRSO
Laser Range Safety Officer

NGA
National Geospatial Intelligence Agency

NGS
National Geodetic Survey

NOAA
National Oceanographic and Atmospheric Administration

OIC
Officer-In-Charge

OP
Observation Point

OS
Orienting Station

OTC
Operational Test Command

PADS
Position and Azimuth Determining System

PC
Pilot-In-Charge

POC
Platoon Operations Center

POV
Privately-Owned Vehicle

RCA
Riot Control Agent

RDP
Range Deflection Protractor

ROO
Range Operations Officer

RP
Radar Position

RSO
Range Safety Officer

RTO
Radio Telephone Operator

SCP
Survey Control Point

SDA
Surface Danger Area

SDZ
Surface danger zone

SIC
Survey information Center

TA
Training Area

TC
Track Commander
Training Circular

TGPC
Terrain Gun Positioning Constant

TTP
Tactics, Techniques and Procedures

USAOTC
United States Army Operational Test Command

USAFCOEFS
United States Army Fires Center of Excellence and Fort Sill

USAFAS
United States Army Field Artillery School

UAS
Unmanned Aircraft System

USCGS
United States Coast and Geodetic Survey

UTM
Universal Transverse Mercator

UXO
Unexploded Ordnance

VFR
Visual Flight Rules

Section II
Terms

This section contains no entries.

Section III
Special Abbreviations and Terms

Convoy
Six or more vehicles temporarily organized to operate as a column.

Dud
An explosive item or component of a weapon system that fails to function as intended when fired.

Impact Areas
The area within and above an operational range used to contain fired or launched military munitions. Impact areas may be delineated by operational range use. For example, the delineation of an indirect-fire weapon system impact area accounts for probable error in military munitions range and deflection. The delineation of a direct-fire weapon system impact area accounts for the total surface danger zone from the firing point or position downrange to impact. Impact areas may be further delineated by other operational range uses. These include:

a. Dedicated impact area, dudded. An impact area with permanently delineated boundaries normally used to contain non-sensitive, high-explosive, military munitions.

b. High-hazard impact area. A permanently designated impact area used to contain sensitive, high-explosive military munitions. A high-hazard impact area is normally delineated within a dedicated impact area where access is restricted due to UXO explosive safety hazards.

c. Impact area, non-dudded. An impact area with designated boundaries used to contain non-explosive military munitions. These areas are primarily composed of small

arms range safety fans and are available for maneuver when not used for military munitions training.

d. Impact area, temporarily-dudded. An impact area primarily used to contain non-explosive military munitions that may be temporarily used to contain non-sensitive, high-explosive, military munitions. A temporarily-dudded impact area should be capable of being cleared for maneuver.

Officer-In-Charge
Each commander/department director conducting or supporting an exercise on the Fort Sill Military Reservation will designate a commissioned, warrant, or noncommissioned (SFC or above) officer as the OIC. SSGs can perform the duties of OIC for weapons according to the table in chapter 10-1. The OIC has overall responsibility and depending on the size and scope of the exercise, may assume duties as range safety officer.

Public Highways
A highway that the public has unlimited access (e.g., State Highway 115 or U.S. 277).

Public Traffic Route
A highway, street, or road that is controlled by the Federal Government and the public has limited access.

Range Officer
An individual who serves as the central point of control and coordination for all activities conducted within the installation training complex and implements and enforces the installation range safety program.

Range Safety Officer
The designated commissioned, warrant, or noncommissioned officer in charge of activities, at a particular firing position and responsible for all firing safety.

Risk Assessment
An expression of potential loss in terms of hazard severity, accident probability, and exposure to hazard

Risk Management
The process of weighing training realism and the expected benefits of an exercise or operation against the known risks.

Round Out Of Impact
A round, which impacts outside the impact area, outside the unit's prescribed safety limits, or within a No Fire Area.

Surface Danger Areas
Areas that extend from the firing point out to and including the impact area. Access to Fort Sill range surface danger areas are carefully controlled and scheduled to provide for maximum training use and to minimize unsafe conditions.

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

IMSI-PL

GLENN A. WATERS
COL, FA
Garrison Commander

JAMES A. MILLER
Director of Human
Resources

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