Headquarters, U.S. Army Garrison
Regulation 385-1

Safety

Post Range Regulation

Department of the Army
Headquarters, USAFCoEFS
455 McNair Avenue, Suite 100
Fort Sill, OK 73503
15 December 2022

UNCLASSIFIED

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455 McNair Avenue, Suite 100
FORT SILL, OK 73503
1 December 2022

Fort Sill Regulation 385-1

Effective 15 December 2022

Safety

Post Range Regulation

History. This regulation supersedes Fort Sill Regulation 385-1, Post Range Regulation, dated 24 June 2016.

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. This regulation is distributed and published solely through the Fires Knowledge Network and the Department of Human Resources, Administrative Services Division Homepage at:

Supplementation. Supplementation of this regulation is prohibited without prior approval from the proponent of this publication, which is the Commanding General, USAFCOEFS. The proponent retains the authority to approve exceptions or waivers to this publication.

Suggested 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.

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 range complex.

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Colonel, GS
Chief of Staff

Official:

OFFICIAL

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Summary of Changes

o Change of format as referenced in AR 25-50 (paragraph 1-39).

o Space adjusted to have ¼ indentation to the right of the parenthesis when numbering subparagraphs as referenced in AR 25-50 (paragraph 1-39).

o Additional paragraphs adjusted to have 1 space indentation between paragraphs.

o Change of content on pages 85, 86, 94, and 97, which changes the minimum altitude over the Wildlife Refuge to 5,500’ MSL.

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 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
Planning, Scheduling, Operating, and Clearing Ranges and Training Areas

Section I Planning and Scheduling

3-1. Coordination with Range Operations

a. In person coordination with Range Operations is encouraged for unique, complex, high risk, or short notice training events.

b. Training support materials including maps, aerial imagery, SOPs, and regulations can be found in the Range Facility Management Support System (RFMSS) library.

c. 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.

3-2. 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.

3-3. 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 – v3.3.10.1.6”]. 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 250mile 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 schedule15 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 and Reserve Component units not conducting annual training 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 2 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.

(6) The Range Officer may approve exceptions to this timeline on a case-by-case basis for unique training events or those requiring specific range resources.

c. Co-usage of land or facilities.

(1) Units may 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 bump from the schedule without the approval of the Director, DPTMS.

e. Range Operations will provide targets, target frames, range flags, and safety paddles. 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.

3-4. 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.

3-5. Demolition Training. Requests for training facilities to support demolition training must include firing and detonation location coordinates, type, and number of explosives, and expected times for detonation.

3-6. Training Involving Digging or other Earth Moving. Training requiring antitank ditching, road grading, bridging operations, fox holes (other than hasty fighting positions), or Engineer Operations should be performed within the pre-approved dig sites located in TA's 19, 26. 29, 35, 40, 44, and 45.

3-7. 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.

a. Limitations for the conditions under which deviations may be authorized are listed in AR 385-63 (Range Safety).

b. Deviations will be requested through Range operations to the FCoE Senior Commander IAW procedures in paragraph 1-6 of the regulation.

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.

3-8. 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 prior to 1600 on the duty day prior. 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.

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.

c. Units training on multi-day schedules who complete training early may inform the Fire Desk that they are mission complete and request that the remaining dates be cancelled during the check-out process.

Section II Occupation and Use of Ranges and Training Areas

3-9. 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 within the range complex, including use of roadways for road marches, using RFMSS IAW procedures listed in paragraph 10-7 of this regulation.

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 Classroom, building 1490, (both rosters are valid for 1 year).

d. 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 on site (e.g., SOPs, TC, TMs, etc.).

g. Ensure the highest controlling element has adequate radios to establish and maintain continuous communications with Range Operations.

3-10. 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. Units failing to monitor radios will be cited and the OIC/RSO may be decertified.

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. Contact Range Operations at 442-2008/2994 if you cannot communicate on the Radio frequencies listed.

3-11. 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.

3-12. 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-J 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 Cell Phone Number of OIC
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

3-13. 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 pyrotechnics use. 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 Cell Phone Number of OIC
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

Section III Clearing Ranges and Training Areas

3-14. Clearing Procedures

a. Clearance procedures. Upon completion of training, the OIC 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 on the range.

(2) Fill and level weapon spade holes, fighting positions, sumps, etc.

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

(4) Request a range inspection through Range Operations. Range Operations will provide the unit with a check-out code after the inspection is completed.

b. Range inspections will normally not be conducted during hours of darkness. Units completing training at night may request an interim check out and schedule the range inspection during the following morning.

3-15. Check-Out Code. Units must request a check-out code prior to departing the range, Firing Point, facility, or Training Area. Range Operations will issue a six-digit Check-Out Code upon receipt of the following information (Lines A-E below):

CHECK-OUT PROCEDURE
LINEINFORMATION 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 Weapon or ammunition malfunctions including dud/UXO munitions including ammunition lot numbers for rounds and fuzes, and locations for dud/UXO munitions
E Inoperative target systems

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 risk acceptance level:

- Extremely High-risk Commanding General, USAFCOEFS
- High risk General Officers, Brigade Commanders, O-6 level Directors
- Moderate risk Battalion Commanders, NCOA Commandant
- Low risk Battery/Company Commanders, NCOA 1SG School Chiefs

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 be updated as training conditions or mission dictate (e.g., change in weather, live fire, day vs. night operations, etc.). DD Form 2977 must be reviewed by the OIC or Senior person in charge daily and signed in block 13. This signature identifies that the Risk Management is current and that the hazards and controls identified on the form are still

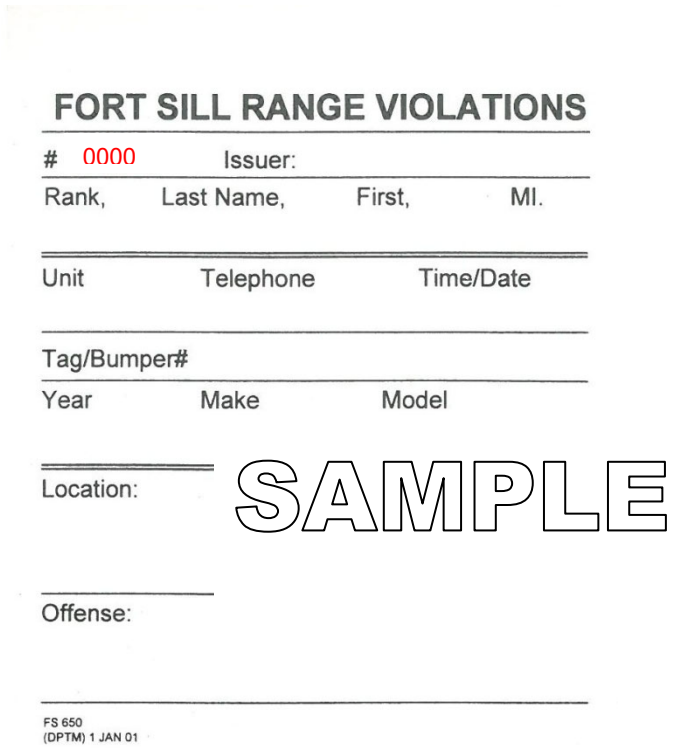
accurate. If multiple OIC's or Senior personnel assume responsibility for range operation each day, then they will sign in block 14. A DD Form 2977 can only be used for 3 consecutive days of operation or changes of OIC. A new form must be created to cover additional days of operation never exceeding 3 days at a time or additional OIC changes.

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. Check Fire Freeze Procedures.

(1) Upon receipt of “CHECK-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 or facilities.

(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)
14	TA 82
15	TA 84

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. Hearing conservation assistance is available through the Audiology clinic at Reynolds Army Health Clinic.

Section II
Movement

4-7. Military Vehicle Movement Restrictions.

a. All tactical 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.

b. 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 (ND507 352 to ND507 385). The Chief, Range Operations, will make exceptions on a case-by-case basis.

(2) MOW-WAY Road.

(3) Apache Gate Road.

c. 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.

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

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

f. If low water crossings have water flowing over them that has reached the yellow lines painted on the road either side of the Low Water crossing, or the MP's have closed (Cones or barricades) the low water crossing, **DO NOT ATTEMPT TO CROSS**. Low water crossings covered with water may cause vehicles to start floating downstream

without warning. Commanders, after careful assessment, may direct tactical vehicles to cross low water crossings where the water has reached or is beyond the painted yellow lines.

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

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

i. 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.

j. All tactical vehicles will utilize drip pans and chock blocks when parked on the Range Training Complex.

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: Units are expected to use Government tactical and non-tactical vehicles (NTV) when conducting training or other official business in the installation range complex. Privately Owned Vehicles (POV) should only be used when Government vehicles are not available.

a. All POVs in the range complex being used for official business must have a POV pass. The POV range pass will be displayed on the dashboard of the vehicle.

b. Unit Commanders/Directors have the primary responsibility for managing use of POVs in the Range Complex. Each tenant battalion is issued a limited number of permanent passes to use at the commander’s discretion. Unit commanders may request additional temporary passes from the Installation Range Officer. Requests for temporary passes will be submitted in writing with a justification of why use of POVs is required. The request will include vehicle description, license plate number, and days required. The Range Officer is the approval authority for temporary POV passes.

c. Personnel with POV passes may only park along the shoulder of designated improved roads. A map depicting authorized parking areas is available in the RFMSS Library. POV passes do not permit access into training areas or firing points.

d. POV passes are required when parking in improved parking areas on fixed facilities within the range complex.

e. POV passes will be displayed on the dashboard of the vehicle when parked within the range complex.

f. POV passes obtained from Directorate of Public Works, Environmental Quality Division, Natural Resources and Enforcement Branch (DPW/EQD/NREB) under the provisions of Fort Sill Reg 200-1 (Recreational Use, Management, Harvest, and Protection of Natural Resources) are to be used for recreational activities only. These passes will not be used in lieu of a pass issued by Range Operations.

g. Personnel operating POVs in blackout areas during the hours of darkness will use parking lights only and not exceed designated speed limits for blackout drive. Black out areas are listed in paragraph 4-12 of this regulation.

4-10. Road guards and Barriers.

a. Requirements for road guards 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 road guards/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. Road guards 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. Road guards will not close improved surface roads (gravel or pavement) for more than 15 minutes at a time.

g. Road guards 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 Range Equipment and Target request form located in the RFMSS library and emailing it to the address located on the form 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 SGT or above).

4-12. Blackout Drive/NVG Operations.

a. The following range areas are Blackout Drive Areas on 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).

h. Any unit desiring to use service lights in blackout drive areas identified in paragraph 4-13a 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 0630-0730, 1100-1200, and 1600-1715, unless units receive prior clearance from the DES, Traffic Section (558-6006/2103). 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 road guards 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. A FS650 range violation will be issued to the unit OIC for violations.

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 with mitigation in place and an approved exception of policy IAW paragraph 12-6.

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, and 100 meters from heavily traveled roads.

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.

(3) Conduct a reconnaissance within 30 minutes prior to releasing RCAs within 200 meters of Blue Beaver Valley Road so that nonmilitary or non-tactical 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. This list is not all inclusive.

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 ATP 3-09.50, 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 TMs 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 "Check 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 Firing Point and notify Range Operations.

(2) Evacuate all personnel.

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

(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. Units will use ammunition DODICs as prescribed in the appropriate Training Circulars for the weapon and training event being conducted; example – M249AR zero (Table IV) will be conducted with DODICs AB57 or AB58, qualification (Table VI) will be conducted with DODIC AB56 IAW TC 3-20.40.

d. 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 (McKenzie Hill)

(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 is restricted during elevated ranges status:

	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

e. 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 minimum grade required to be an OIC/RSO for each type of range is listed in DA Pam 385-63 (Range Safety). The minimum grade required to be an OIC/RSO for above-the-horizon laser firing will be the same as for Air Defense Artillery rockets and missiles until separate requirements are published in appropriate Army policy.

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), Combat Pistol Qualification Course (CPQC), and on Modified Record Fire ranges (MRF) at the unit's request by calling 442-2904/3339. Operators trained on the Modified Record Fire ranges may operate MRF, MRF2, MRF3, and NRETS. 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, except for Drill Sergeants and cadre assigned to 434th BDE, where operator certification will be valid for two years.

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). Units have the option of using internal assets to transport sick/injured personnel to medical treatment, however, Range Operations will be notified of any person being evacuated for medical reasons.

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 (west of Highway 44)

MEDEVAC Frequency – East Range – FM 38.50 (east of Highway 44)

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.

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, rank, gender, and last four of the service number to 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 MEDEVAC. Commanders and OICs may elect to transport the casualty to the Emergency Room using their own assets, the closet being Comanche County Memorial Hospital located at 3401 West Gore Blvd., Lawton. Units transporting a patient directly to the emergency room will report the self-MEDEVAC to Range Operations.

b. Reynolds Army Health Clinic (RAHC) operates an Urgent Care clinic with limited hours to treat minor illnesses, sprains, minor fractures, and simple lacerations. The urgent care clinic can be reached at 580-558-2770.

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 or injuries requiring level 1 Trauma Center support). Movement of suspected Head, Neck, and Spinal injuries will be avoided unless directed by Medic or Emergency personnel. In these instances, the OIC/RSO should communicate circumstances to Range Operations.

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 Health Clinic ambulances, 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 5690 3883	34° 41' 23.620" N	98° 22' 43.520" W
Bravo	Hoyle Bridge	ND 5743 3671	34° 40' 16.609" N	98° 22' 23.352" W
Charlie	SGT David B. Bleak Troop Medical Clinic (Bldg. 6039	ND 5692 3565	34° 39' 40.353" N	98° 22' 43.741" W

Delta	Pig Farm Crossing	ND 5818 3392	34° 38' 43.936" N	98° 21' 54.353" W
Echo	4 Mile Crossing	ND 5068 3847	34° 41' 11.684" N	98° 26' 48.378" W
Foxtrot	Mow-Way & McKenzie Hill RD	ND 4977 3465	34° 39' 9.328" N	98° 27' 24.666" W
Golf	Twin Gates (HWY 115)	ND 3370 3458	34° 41' 23.062" N	98° 22' 43.052" W
Hotel	White Wolf Crossing	ND 5452 3813	34° 41' 5.382" N	98° 24' 15.934" W
India	McKenzie and Blue Beaver Rd.	ND 4164 3459	34° 39' 8.685" N	98° 32' 43.589" W
Juliet	Falcon Gate (Quanah Range)	ND 2870 3299	34° 38' 18.214" N	98° 41' 12.606" W
Kilo	Intersection trail/Deer Creek Canyon Rd.	ND 4307 4150	34° 42' 52.7" N	98° 32' 46.6" W
Lima	Intersection Tower 2 Rd./North Boundary Rd.	ND 5000 4134	34° 42' 46.4" N	98° 27' 14.4" W
Mike	Intersection Beef Creek Rd./Elgin Gate Rd.	ND 5997 4343	34° 43' 42.4" N	98° 20' 41.8" W
November	Intersection Bald Ridge Rd./East Boundary Rd.	ND 6565 3998	34° 41' 59.0" N	98° 16' 59.3" 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.

EVENT	TRADOC		FORSCOM/OTHERS	
	Dedicated Wheeled Vehicle	Ground Medical Vehicle	Dedicated Wheeled Vehicle	Ground Medical Vehicle
Air Assault		1		1
Anti-Armor Weapons		1		1
Confidence Obstacle Course		1		1
Demolitions		1		1
Fire & Movement		1		1
Grenade Launchers		1		1
Hand Grenades		1		1
Live Fire Artillery	1		1	
Live Fire (Small Arms)	1		1	
Night Land Navigation		1		1
Non-Live Fire Events	1		1	
Rappelling		1		1

Note. Tactical Combat Casualty Care (TC3) bag must be complete. If a Soldier is medically evacuated, the minimum amount of remaining or replacement medical support personnel with ground transportation must still be available on the range or training location to continue training. For dedicated wheeled vehicles, a dedicated licensed driver, dual frequency radio capability (administration and logistics [ADMINLOG] and firing frequencies, minimum), and markings as a medical support vehicle must be included. Ref: FS Reg 385-1 and TRADOC Reg 350-6, Table H-1, TC 3-20.40

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.

EVENT	TRADOC		FORSCOM/ OTHERS	
	TC3 Certified Soldier	68W Medic	TC3 Certified Soldier	68W Medic
Air Assault		1	1	
Anti-Armor Weapons		2		2
Confidence Obstacle Course		1	1	
Demolitions		2		2
Fire & Movement		1	1	
Grenade Launchers		2		2
Hand Grenades		2		2

Live Fire Artillery	1		1	
Live Fire (Small Arms)	1[1]		1[1]	
Night Land Navigation		1	1	
Non-Live Fire Events	1		1[2]	
Rappelling		1	1	

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

Item	Quantity
TC3 bag	1
Tourniquets	2
Litters	2
Litter straps	6
C-collar	1
Blankets	2
Backboard	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/Directors will establish procedures for qualifying and certifying personnel required to perform safety duties IAW paragraph 2-4. 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 for recertification:

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

(b) Complete 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 will be present at each firing position and responsible for the duties outlined in this regulation.

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) Current Range Safety Card issued by Range Operations when firing from a firing point for the approved period.

(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 fire support coordination measures and observer information are plotted on the firing chart and current in AFATDS.

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

(i) Verify minimum quadrant elevation (min QE) determined by the OIC/RSO for howitzer units.

(j) For Howitzer units, 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 safe and report the location of any DUDs to Range Operations.

d. 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/out by the unit they are supporting.

(2) Maintaining communications with the element they are supporting.

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

(4) Plotting all Fire Support Coordination Measures and the safety limits of the unit they are supporting on a map.

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

(6) Call “check fire freeze” and report any rounds unobserved or out of safe 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 observing or calling for fire.

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

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

(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 when emplacing near public traffic routes.

(2) Unit personnel will select a suitable location for the firing point and verify position using the Defense Advanced Global Receiver (DAGR) with a Figure of Merit (FOM) 1.

(3) Unit personnel may 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 using one of the following methods:

(a) Resection.

(b) Graphic Resection.

(c) 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 Defense Advanced GPS Receiver to obtain or verify direction.

(5) Observation of rounds. Units may use RADAR in lieu of, or in conjunction with, an 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.

d. Surface Danger Zones (SDZ).

(1) Surface Danger Zones (SDZs) are defined in DA Pam 385-63 (Range Safety).

(2) The SDZ is comprised of multiple areas which vary based upon munition. Each area of the SDZ has different restrictions. The Range Safety Card depicts the approved SDZ for the training event and the areas of the SDZ with specified restrictions. The SDZ area D 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).

(3) The firing unit is responsible for implementing the safety measures associated with each area of the SDZ as identified on the Range Safety Card such as emplacing road guards.

e. Permanent Fire Support Coordination Measures 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 6405/4500
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	Fire Support Maneuver Lane	West Range Impact Area east of grid 465 and South of the 364

f. 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				

g. Surface Danger Zone Considerations. No portion of the SDZ 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) Cantonment Area or Lake Elmer Thomas Recreation Area (LETRA).

(5) Railroad right-of-way, (50 feet either side of tracks).

h. 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) Units may lay howitzers using automated means, orienting angle, grid azimuth, or other authorized methods.

i. Restrictions.

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

(2) DA Pam 385-63 discusses ammunition clearance for overhead fire. When personnel occupy any part of SDZ 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 SDZ Area D.

(3) Do not use rocket assisted projectiles (RAP) for overhead fire.

(4) If ammunition is not cleared for overhead fire, block roads IAW 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.

(9) Paladin units may travel with fuzed ammunition on the howitzer (only HE/PD-M557 and M739 fuzes) when the onboard fire extinguisher is operational. Do not mate Mechanical Time, Mechanical Time Super Quick, and Variable Time fuzes to projectiles.
j. Units with automated Fire Control Systems.

(10) Prior to live fire a Safety Certified person must verify, at a minimum, the following:

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

(b) Initialization grid (taken from an SCP).

(c) Internal communication in the gun.

(d) Direction.

(e) Fire Control alignment test data (confidence check).

(f) Dry fire verification mission.

(2) Follow the procedures for occupation as outlined in unit SOP and ATP 3-9.50.

(3) Duties of the Fire Direction Officer (FDO) in units with Automated Fire Control Systems include:

(a) Ensuring that the FDC Chief and himself/herself are Safety Certified.

(b) 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.

(c) 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:

(d) Verification Mission Tolerances
Deflection 2 mil
Quadrant 2 mil
Fuze TI 0.1 sec
Fuze VT 1.0 increment
Direction.

(e) Constructing firing charts IAW appropriate references.

(f) Computing safety and issue Safety Ts for shell illumination IAW appropriate references.

(g) Computing safety with box safety IAW ATP 3-09.50.

Section II
Cannon Units

6-3. 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. 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.

d. 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).

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

(1) 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.

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

f. Obtain the following information from the Fort Sill 1:50,000 Military Installation Map (MIM):

(1) Elevation of the firing position.

(2) Maximum altitude at minimum range.

(3) Minimum altitude at maximum range.

g. 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.

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

i. Survey personnel may 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.

j. 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.

6-4. Requirements/Procedures.

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

b. 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.

c. Duties of the launcher chief are as follows:

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

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

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

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

d. 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.

e. OIC/FDO will –

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

(2) Verify current range conditions with 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) Verify observation post locations with Range Operations.

(6) Maintain communications with the Observation Point and/or Radar.

Section III
Cannon Units with Automated Fire Control Systems

6-5. Requirements/Procedures for Live Fire.

a. General. Any organization conducting live fire from 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 ATP 3-09.60 or TC 3-09.8. 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:

(b) AZ & QE +/-5 MILS

(c) OPAREA.

(d) Firing Point.

**Note: LM 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 conduct non-standard, unique, or high-risk training events must contact the Range Operations section 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 operating a small arms range will familiarize themselves with this regulation, AR/DA Pam 385-63, and appropriate TCs 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 into all ranges upon arrival 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. Personal Protective Equipment will be in accordance with unit SOP, DA PAM 385-63, and current CG policy memorandums.

g. Using units will police range after use (includes latrines and all buildings).

h. OIC will account for all ammunition and dunnage.

7-2. Mortars.

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

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

c. Safety data will be computed IAW TC 3-22.90 and TM 9-1015-250-10.

d. Mortar operations will be IAW TC 3-22.90 and TM 9-1015-250-10.

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

(1) Verify connections are inspected before firing.

(2) Ensure no detonations will take place within 300 meters of the railways or any main or secondary road unless road guards are posted, and traffic is halted.

(3) 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.

(4) The site of explosive operations will be secured prior to beginning explosive operations and a head count of all personnel on site will be conducted by the RSO prior to all shots.

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

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

(7) Detonate charges from a position that allows for visual verification of the pit and immediate vicinity prior to shot.

(8) Ensure total NEW (Net Explosive Weight) of shot does not exceed range limit for any one shot. Maintain adequate distance between shot to prevent sympathetic detonation of explosives.

(9) Hearing protection is required for any exposure to noise greater than 140 dBP. Follow the hearing protection recommendations listing in the technical manual for the explosive device used. If the hearing protection recommendations are not listed in the manuals, compute the 140 dBP contour from the formula: Distance to 140 dBP contour in meters = 200 times the cube root of the weight of explosives in kg (D=300xw1/3).

(10) 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.

(11) 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.

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 one meter above surrounding level ground between location of charge and personnel.

(4) Transmit the following

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, 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. For a maneuver LFX, units must conduct a range walk with Range Operations, a leaders' certification, and a day and night blank fire with all personnel prior to execution of a day and night live fire. Unit Commanders will ensure Soldiers have zeroed and qualified on their assigned weapon systems to include Laser Aiming 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 and training events involving multiple weapon types with converging SDZs. 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 Aircraft Systems (UAS). 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.

c. Range Approval Process. LFXs are requested on appropriate facilities through RFMSS and will specify Maneuver range LFX or CALFEX as the event. A packet is not needed for static ranges.

(1) For Maneuver LFX, combined arms LFX, and non-standard events, units 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 7-4.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. 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

e. Live Fire Execution.

(1) Commanders preparing their units for Maneuver and combined arms LFXs will 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.

(2) Range OIC and Safety Personnel.

(a) 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).

(b) 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.

f. Additional Instructions.

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

(2) 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 10-11 of this regulation.

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

(4) 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).

(b) The Close Combat Mission Capability Kit (CCMCK) will be employed in the same manner as live fire, but with the addition of required safety gear and reduced SDZ. 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 warned 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.

(5) Soldiers will 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.

(6) 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. Laser users will be issued a Range Safety Card for the specific Laser Point scheduled which will identify left/right lateral limits and any special instructions.

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 pre-mission 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 unless specifically authorized by Range Operations and the Joint Space Operations Laser Clearinghouse.

(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 back brief 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. Administrative

a. This chapter largely applies to R-5601A/B/H/J. The 301st FW/Falcon Range has responsibility for the operation of R-5601C/D/E/F/G; instructions for operating in those airspace sub-compartments is provided in the 301ST FIGHTER WING INSTRUCTION 13-212 (Range Planning and Operations). Additionally, Washita MOA and Sheppard 1 MOA Area 8 & 9 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 6th CTS, DET. 1, 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.

9-4. 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.

9-5. 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

9-6. 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. R5601 is the restricted area, which encompasses the entire Fort Sill Reservation. R5601 is divided into nine different sections (A-J)

(1) 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

(2) 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 (FAC) operations and urban assault. Surface – 40,000 MSL

(3) 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

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

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

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

(7) R5601G is used exclusively for aviation. This area provides spill out maneuvering airspace for R5601B and C. 500’AGL- 7000MSL unless scheduled concurrently with the Washita MOA, then 500’ AGL to 7999MSL.

(8) R5601H is used exclusively for aviation. This area overlies the Fort Sill cantonment area. Surface- 40,000MSL.

(9) R5601J is used exclusively for aviation. This area provides spill out maneuvering airspace for R5601B. 500’AGL-40,000MSL.

b. R-5602A and B, that operate when scheduled from 40,000 to 60,000 MSL and are used primarily to support above the horizon Laser use.

c. The airspace within R5601 is closed to all unauthorized air traffic.

d. 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.

e. 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.

f. 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.

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

h. 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.

i. 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.

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

k. 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.

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

m. 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

9-7. 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 ensure the flares will not contact the ground while still ignited. Do not dispense countermeasures over or toward ground personnel.

e. 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.

9-8. 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.

9-9. 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

9-10. 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
Wichita Mountains Wildlife Refuge	Borders the north boundary of the R5601F complex beginning at approximately Medicine Park and extending westward approximately 15 miles. Minimum altitude is 5,500 MSL, however, remain higher if possible.	

9-11. 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.

9-12. 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.

9-13. 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.

9-14. 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.

9-15. 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.

9-16. 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. The following are the duties of the JTAC personnel operating on Fort Sill:

(9a) Control all fixed wing CAS missions on the Fort Sill range.

(10b) Conduct safe operations in the field.

(11c) 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.

(12d) Perform a telephonic brief, (if possible), with the air crew**.**

(13e) 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.

(14f) Check-in with range control to receive a dry or wet check in code as appropriate.

(15g) Establish ACAs, when required.

(16h) Request and annotate any restrictions passed on from Range Operations at this time.

(17i) 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.

(8j) The JTAC will plot IPs, CPs, ACMs (formal and informal), FSCMs, artillery locations and gun-target lines (GTLs).

(9k) Complete and sign the daily risk assessment on-site to allow the JTAC to assess firsthand the conditions prior to the mission.

(20l) 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.

(21m) Debrief the participating units prior to departing the range, if possible, and (at a minimum) perform a telephonic debrief with the aircrew.

b. 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.

9-17. 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 ordinance.

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.

gg. 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) Weapons delivery parameters will vary based on aircraft, weapons, and delivery parameters. Provide Fort Sill Range Operations with the weapons delivery parameters, and the most current version of the Weapons Danger Zone (WDZ) Tool will be used to provide the authorized attack parameters, including altitude and run-in heading.

(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.

9-18. 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.			

9-19. 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)

9-20. 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 5500'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.

9-21. 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 5,500’ AGL in the Wichita Mountains Wildlife Refuge area while en route. Follow the RANGE ENTRY and ATTACK SEQUENCE procedures detailed above.

9-22. 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

9-23. 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.

9-24. 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.

9-25. 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
External Organizations

10-1. External Organizations. External organizations will submit requests for use of ranges and training land using the procedures in paragraph 10-7 of this regulation after coordinating with External Unit Training Branch at 580-442-1844.

10-2. 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 Model 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.

10-3. Other U.S. Government Organizations. Other U.S. Government organizations are permitted to schedule use of range complex facilities managed using RFMSS after coordinating with the External Unit Training Branch. These organizations will be charged for all distinguishable costs incurred to include labor costs.

10-4. Other External Organizations.

a. Other organizations are not permitted to schedule use of range complex facilities 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 ATP 3-09.50.

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 monumental 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 centimeters 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 40451.693
Northing	38 34474.636
Elevation (m)	407.34

(2) Azimuth Markers

Azimuth Marker	Azimuth (mil)	Distance (m)
SCP Arbuckle (ND 419 357) Quad Marker	0885.952	1500

Good Year Water Tower (ND 454 314)	0885.952	5700
Communications antenna (ND 609 326)	4016.520	4000
SCP KOEHLER (ND 387 358) Quad Marker	5450.981	2500

b. Declination Station BEEF CREEK (TA 70)

(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

c. 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

d. 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. 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.

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. Gray Water. Mobile kitchens and ROWPUs may discharge gray water on site provided it is in a location where the water can be completely absorbed 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.

j. 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. All tactical vehicles will utilize drip pans when parked on the Range Training Complex.

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. Pyrotechnics/simulators must be expended into barrels or on a 5-foot x 5-foot area free of vegetation. Blank ammunition may be used by firers in the standing/kneeling positions only. The use of aerial flares is prohibited.

(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. MLRS and HIMARS will coordinate for and have on site a FSFD Brush Truck before 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. Battalion commanders (for Amber status) and brigade commanders (for Red and Black status) may request an ETP for specific training events, locations, or ammunition types when it can be demonstrated that the fire danger can be effectively mitigated.

(2) The requesting battalion/brigade commander will forward the ETP request with supporting documents to Range Operations for approval.

(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, applicable dates, locations, and DODICS of ammunition/pyrotechnics to be used.

(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 CONOPS or map of the applicable training areas or ranges 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. The Range Officer, in consultation with the Fire Chief, may exempt specific ranges and facilities from the requirement of having an ETP based up his/her knowledge of the fire risk associated with that facility/event or effective mitigation already in place.

c. Any time sustained winds are in excess of 15 KNOTS, Range Operations may suspend the use of all illumination, white phosphorus, flares, PYRO and tracers, regardless of the range status.

d. 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 firefighting detail of no less than five Soldiers immediately available to put out fires caused by blank ammunition.

e. Careless discarding of matches, cigarettes, and combustible materials is prohibited.

f. 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

g. 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 Operations Fire 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 and have received an annual UXO awareness class from EOD.

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 firefighting 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.

(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 5^{th} 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 ATP 3-09.02. Survey accuracy requirements are summarized in table 13-1.

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 benchmarks and take the appropriate action needed.

(9) Install and maintain permanent metal survey quad markers over designated SCPs.

(10) Maintain the Fort Sill calibration baseline, 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. 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.

(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 auto-reflection 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 auto-reflection will be accomplished during update procedures at points with quad markers, as prescribed in ATP 3-09.02.

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
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 3-01.60
Counter-Rocket, Artillery, and Mortar Operations

ATP 3-01.64
Avenger Battalion and Battery Techniques

ATP 4-35.1
Ammunition and Explosives Handler Safety Techniques

ATP 5-19
Risk Management

DA Pam 25-403
Guide to Record keeping in the Army

DA Pam 385-63
Range Safety

301st Fighter Wing Instruction 13-212
Range Planning and Operations

Section II
Related Publications

ATP 3-10.70
Paladin Operations

FM 3-34-214
Explosives and Demolitions

TC 3-09.81
Field Artillery Manual Cannon Gunnery

ATP 3-09.60
Techniques for Multiple Launch Rocket System (MLRS) and High Mobility Artillery Rocket System (HIMARS) operations

ATP 3-09.02
Field Artillery Survey

TC 3-20.40
Training and Qualification – Individual Weapons

ST 3.09.50.1
The XO's Handbook, Cannon Battery Leader's Guide

ST 3.09.60.1
MLRS Battery Leader's Handbook

DA Pam 385-64
Ammunition and Explosives Safety Standards

TM 9-1425-646-13&P
Interactive Electronic Technical manual for Multiple Launch Rocket System (MLRS)

TM 9-2350-314-10-1
Paladin Operator's Manual (vol. 1)

TM 9-2350-314-10-2
Paladin Operator's Manual (vol. 2)

TM 43-0001-28
Army Ammunition Data Sheets for Artillery Ammunition: Guns, Howitzers, Mortars, Recoilless Rifles, Grenade Launchers and Artillery Fuzes

EM 0185
Interactive Technical Manual (IETM) for Multiple Launch Rocket System (MLRS)

MIL-HNDBK-828C
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 95-1
Army Aviation General Provisions and flight regulations

Fort Sill Reg 95-23
Unmanned Aerial System flight regulations

Fort Sill Supplement 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
Prescribed Forms

FS Form 650
Fort Sill Range Violations

Section IV 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

LFX
Company/Battery/Troop and below Collective Live Fire Range using organic weapon systems

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
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
The Officer, WO, or NCO responsible for personnel conducting training or operation within the range complex.

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. This includes the scheduling and maintenance of the training complex.

Range Safety Officer
The Officer, WO, or NCO who is the direct representative of the OIC of training or operations on the range complex. The RSO is responsible to the OIC for ensuring the adequacy of safety of firing, training operations, and ensuring compliance with laser range safety requirements and local Standing Operating Procedures.

Risk Assessment
An expression of potential loss in terms of hazard severity, accident probability, and exposure to hazard

Risk Management
The process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk cost with mission benefits.

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 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.