

Fort Knox Regulation 385-22

Safety

Fort Knox Range Regulation

Department of the Army
United States Army Installation
Fort Knox, Kentucky 40121
1 July 2025

UNCLASSIFIED

SUMMARY of CHANGE

FKR 385-22
Range Regulation

This revision, dated 18 July 2024

Updates procedures to be follow IAW with the FK Wildland Integrated Fire Fighting Plan (para 1-17a.).

Added Natural Resources (para 1-15f.).

Changed TM title to Army Water Transport Operations (para 16-2c).

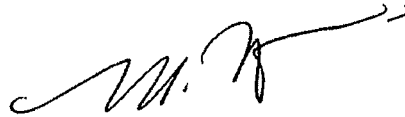
Added-Does the fire pose a threat to civilian property or range infrastructure (para 1-17 1 (6).

During events where the OIC and RSO control the live fire training from an aircraft the JTAC/FO if present at the facility or observation point must be a certified aviation RSO, E-6 and above. They must possess the same certifications as the OIC/RSO but do not have to be weapons system qualified. (para 14-8 i)

Department of the Army
United States Army Installation
Fort Knox, Kentucky 40121-5123
Effective 1 July 2025

*Fort Knox Regulation (FKR) 385-22

Safety



MAURICE O. BARNETT
Brigadier General, USA
Commanding

History. This publication is a minor revision clarifying terms and updating procedures as described above.

Summary. This regulation provides procedures for the safe use of all facilities within the Fort Knox range and training area (RTA) complex. It is to be used in conjunction with AR 385-63 Range Safety, AR 350-19 Army Sustainable Range Program, DA PAM 385-63 Range Safety, and DA PAM 385-64 Ammunition and Explosives Safety Standards.

Applicability. This regulation applies to all authorized users of the Fort Knox range and training area complex, military or civilian.

Proponent and Exception Authority. The proponent for this regulation is the USAG FKKY Directorate of Plans, Training, Mobilization and Security (DPTMS): Range Branch.

Suggested Improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to DPTMS: Range Branch (AMIM-KNO-TR), 4638 Wilson Rd., Building 9308, Fort Knox, KY 40121.

Distribution. Distribution of this regulation is intended for USAG; Fort Knox major activities, directorates, staff offices/departments, Partners in Excellence, and other authorized users of the Fort Knox Range and Training Area Complex. Distribution is in electronic format only.

*This regulation supersedes FKR 385-22 (Fort Knox Range Regulation) dated 01 December 2022.

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Chapter 1

Introduction

1-1. Purpose

This regulation prescribes the policies, procedures and general safety precautions necessary to support the safe and efficient use of the Fort Knox Range and Training Area (RTA) complex. All training activities will be conducted IAW AR 385-63, DA PAM 385-63, applicable doctrinal manuals, appropriate operators and technical manuals, and this regulation. When standards in this regulation conflict with standards of other military Services or Federal agencies, the standards providing the higher degree of protection apply.

1-2. References

Related publications are cited where applicable. A complete list of references can be found at Appendix A.

1-3. Explanation of Abbreviations, Terms and Definitions

See Glossary.

1-4. Visitors

a. Military organizations desiring to invite military affiliated visitors (i.e. family members, DA Civilians, etc.) to observe their training (i.e. capabilities, exercises, firepower demonstrations, training courses, competitions, or other types of training or activities anywhere within the RTA complex) will submit a request to the Installation Range Management Authority (RMA) NLT 10 duty days prior to the event. The request will specify, group size, mode of transportation, timeline and activities, if the media will be present, and all safety control measures to be implemented (i.e., safety briefings, hearing protection, transportation, risk assessment data, etc.).

b. Military organizations desiring to host events where military affiliated visitors will fire weapons must submit the request to the Director of Plans, Training, Mobilization, and Security (DPTMS) through the Installation RMA and the Installation Safety Office (ISO). If military affiliated visitors will further participate in a training event utilizing any facility on the installation (i.e. obstacle or confidence course, etc.), the request must also be routed through the Staff Judge Advocate General's (JAG) office and may require a signed hold harmless agreement.

c. Organizations desiring to host events where non-military personnel or organizations will observe training must submit their request to the Director, DPTMS, through the following agencies: the Installation RMA; the Public Affairs Office (PAO); the ISO; and the Judge Advocate General's (JAG) Office. If non-military personnel are to participate in a training event (riding in a military vehicle is the same as participating), the request must also be routed through the Garrison Commander and approved by the Senior Commander.

1-5. Other Use of the Fort Knox RTA Complex

a. Non-military organizations identified in 1-4c above.

b. Non-military organizations (e.g. civilian gun clubs or other civic organizations) desiring to utilize any portion of the training complex must submit a request to the Fort Knox PAO detailing the activities to be conducted and the facilities requested for use. PAO will forward the request through DPTMS to the installation RMA, ISO and the JAG office. Upon concurrence, DPTMS will forward the request to the Support Agreements Manager who will draft a formal agreement between the organization and US Army Garrison (USAG) Fort Knox for approval by the Garrison Commander.

c. Non-military organizations authorized to utilize the training complex as stated in 1- 4c above, must designate one qualified individual to act as the Officer-In-Charge (OIC) and one to

act as the Range Safety Officer (RSO). Completion of a National Rifle Association approved pistol and rifle course or equivalent (e.g. United States Precision Shooting Association or National Range Officer Institute or equivalent as judged by the Garrison Commander), is mandatory for non-military personnel designated to perform the duties of OIC or RSO.

(1) If non-military minors are involved in the activity, these requests must state and they must have also completed an approved course of marksmanship training unless otherwise approved by the Senior Commander.

(2) Those organizations and agencies specified in paragraph 1-4c will comply with this regulation, local range regulations, Standard Operating Procedures (SOPs), and all other Department of Defense (DOD) or Department of the Army (DA) applicable regulations. Specific requirements will be identified in a written agreement established between the installation and non-military organization(s). Only standard calibers and commercial grade ball ammunition is authorized for use. No explosive, armor piercing, or incendiary type ammunition may be fired within the Fort Knox RTA by these organizations.

d. Contact Range Operations for sample visitor memorandum formats.

1-6. Prohibited Activities

The following activities are strictly prohibited anywhere within the confines of the training complex:

a. Trespassing: Trespassing is punishable by criminal law and Uniform Code of Military Justice (UCMJ) action. See paragraph 1-9 for a more detailed explanation of authorized access.

b. Unauthorized removal of brass, scrap metal, ammunition residue, or any other item not brought in with the visitor without authorization from the RMA.

c. Use of alcohol.

d. Recreational running, biking, hiking, etc., without approval of the RMA or as provided for in Annex I.

e. Off road recreational use with 4-wheel drive vehicles, All Terrain Vehicles (ATVs), dirt bikes, etc. (see paragraph 1-21 a (6) for exceptions).

f. Recreational horseback riding. The exception is during the Memorial Day cemetery visitation where access to some cemeteries is restricted to horseback only.

g. Digging or otherwise disturbing the soil without authorization from the RMA.

h. Amateur/unauthorized paleontology or archeology digs (i.e. fossil or artifact hunting).

i. Training in and around or entry into any natural cave system (spelunking).

j. Training (without coordination) or any recreational activity near a railroad track or trestle.

k. The recreational use of privately owned, remotely operated or initiated aircraft (i.e. drones, RC aircraft, model rockets, etc.) within the confines of the Fort Knox installation boundary.

l. Entry into the range and training area complex for the specific purpose of foraging for deer sheds, berries, roots, etc.

m. Units desiring to conduct physical fitness activities on range and training complex roads (other than those addressed in Annex I) must coordinate these events with Range Operations prior to execution.

1-7. Safety

Any person observing an unsafe act or condition will take the appropriate actions to immediately correct it and notify the OIC/RSO and/or Range Operations. If the act or condition represents a violation of established safety guidelines or violates the provisions outlined in this regulation, the observer will also inform Range Operations.

1-8. General Vehicle Safety

a. Left turns are not permitted from the training complex onto US Highway 60; nor are left hand turns permitted from US Highway 60 into the training complex. The only approved US Highway 60 crossing points are located at Checkpoint (CP) 37 and CP 38 (underpass and overpass respectively). These may be used to transition from Training Area (TA) 10 to TAs 8 and 9 (and vice versa).

b. Many different roads provide access to the Fort Knox RTA. These roads vary in surface composition from dirt/gravel to asphalt. Additionally, the terrain is such that it challenges operator's abilities as they negotiate blind curves, steep hills, single lane bridges, narrow shoulders, etc. Other vehicular movements, including oversized, ammunition, and fuel carrying vehicles, as well as foot marches may be encountered anywhere within the complex and combine to add risk to any road movement.

c. Commanders/Supervisors will adhere to the guidelines in AR 600-55, The Army Driver and Operator Standardization Program (Selection, Training, Testing and Licensing), TC 21-305-series (entire series listed in Appendix A), and TC 21-306, Tracked Combat Vehicle Driver Training, for the selection and training of personnel to operate Army Motor Vehicles (AMVs) and tracked Army Combat Vehicles (ACVs) respectively.

d. Vehicle Commanders/Senior Occupants of AMVs shall ensure all applicable personnel restraint equipment/systems (i.e. seat belts, cargo straps, etc.) of their vehicle are serviceable and properly utilized at all times by all occupants while the vehicle is in motion - both on and off Federal Installations.

e. Personnel shall NOT ride in or on vehicles not specifically designed for the transport of personnel or where the restraints have been removed, altered, or damaged

f. Vehicle commanders shall NOT transport personnel AND cargo in the cargo compartment of any AMV at the same time.

g. All AMV crewmembers will ride at or below "nametag defilade" (no more than head, shoulders and arms extending outside the vehicle hatch). All crewmembers will wear either the Combat Vehicle Crewman (CVC) helmet (for those vehicles so equipped), the Advanced Combat Helmet (ACH) or Kevlar helmet with single hearing protection while operating an AMV or ACV.

h. Units will conduct vehicle emergency evacuation and rollover training before all tactical missions to ensure crew proficiency. This requirement applies to operators and passengers of ACVs/AMVs.

i. During periods of inclement weather or limited visibility, road conditions can change rapidly. Vehicle Commanders/Senior Occupants and Operators are responsible for assessing road conditions prior to any vehicular movement and adjust accordingly.

j. In the event a vehicle becomes disabled, the driver must switch-on hazard warning lights and place a reflective warning triangle beside the road at least 100 meters behind the vehicle to warn approaching traffic of its presence. If the disabled vehicle is within 200 meters of a curve, crest of a hill, or other object which obstructs an oncoming driver's view of the disabled vehicle, the occupant(s) will emplace a reflective warning triangle to afford ample warning to others of the vehicle's presence until recovery is complete. All attempts will be made to clear the road of the disabled vehicle as soon as practical. If appropriate, crew members may direct traffic around the disabled vehicle when parking off the road is not possible and if no control personnel are present.

k. ALL vehicle accidents, incidents, maneuver damage, facility damage, environmental damage (i.e. fuel spills), etc., are reportable to Range Operations immediately.

l. With the exception of rescuing injured personnel, units are responsible to immediately secure the scene of any Class A or B accident (total cost of property damage of \$500,000 or more; an Army aircraft or missile is destroyed, missing or abandoned; injury or occupational illness resulting in a fatality or any permanent total or partial disability, or three or more

personnel hospitalized as inpatients, or vehicle fire). The scene should be preserved and no recovery efforts initiated until released by the ISO or US Army Combat Readiness/Safety Center (USACR).

m. Headlights are required to be on when operating vehicles on any roadway in the training complex during periods of limited visibility. Blackout drive training on training complex roads is prohibited without prior coordination with Range Operations.

n. Buses are not permitted on the portion of Main Range Road between Canby Hill Range and Porter River Road. Nor are they permitted on Main Range Road between Steeles Range Road and 7th Armored Division Road. Both areas have very steep hills and present a specific hazard to buses.

1-9. Training Complex Access

a. DPTMS Range Branch is the primary approving authority for access to the RTA complex. Access to the RTA complex (including all bodies of water) is strictly limited to authorized personnel performing approved activities. Units desiring to host visitors to their training events must obtain approval prior to doing so (see paragraph 1-4c).

b. All personnel are required to check in with the Range Operations Firing Desk (ROFD) prior to movement into the RTA complex unless in possession of an approved Range Facility Management Support System (RFMSS) Request Summary and route to sign for a facility. Personnel are also required to check out upon departure from the RTA complex.

c. Roads within the training areas and those roads servicing the live fire ranges are off limits to unauthorized military and civilian vehicles. Authorized vehicles (with permission from the ROFD) include those used by: civilian contract personnel employed by the Department of the Army for projects within RTA complex; facilities engineers performing assigned functions; military vehicles engaged in authorized training, training support or preparation; military law enforcement activities; Government or civilian law enforcement agencies during authorized training activities; and sportsmen (when approved for access by Hunt Control).

d. Privately Owned Vehicles (POV).

(1) POVs are not authorized within the maneuver training areas, live fire areas or on tank trails without an authorized POV pass.

(2) DPTMS Range Operations is the approving authority for POV passes.

(3) The use of POV passes is normally restricted to unit leadership (CDR, S3, CSM, 1SG, etc.). Other unit members who require the use of their POV to accomplish their unit's military mission must submit a memorandum to Range Operations detailing the reasons why a military vehicle is not available or practical for the mission, dates for which the pass is required, and contact information for a local, responsible party. The memorandum must be signed by the requestor's battalion commander or other responsible O-5.

(4) Individuals with a POV pass may operate their POVs in the training complex with the following restrictions:

(a) Must park in designated non-tactical vehicle parking area (if so equipped).

(b) May not operate forward of the baseline of any live fire range or enter any impact area.

(c) Only utilize improved roads (gravel or asphalt) into the pass-approved areas or facilities. No off-road movement is authorized. Parked vehicles must not obstruct normal traffic flow.

e. Fort Knox Command Team has designated 0630 to 0730 Monday through Friday (excluding Federal and training holidays) the standard time for the conduct of military physical fitness training. During this time, individual or formation running, walking or a combination of both is authorized on Misery Hill (authorized run routes are available on the Fort Knox website). This road is not open for other uses during these hours. This route extends from the intersection of Porter River and Main Range Roads to the entrance of the Obstacle/Confidence

Courses. Use of this road for individual or formation running/walking outside of the established physical fitness hours is not authorized. No vehicles will be allowed on this route other than emergency response vehicles from the Directorate of Emergency Services (DES) – i.e. Military Police, Fire Department, and Emergency Medical Services and/or Range Branch who are responding to an emergency call using emergency lights and sirens. Units conducting physical fitness training on Misery Hill must provide for straggler control and maintain their formation on one side of the road.

1-10. Impact Area Access

a. The control and management of all impact areas is the responsibility of the RMA. The impact area is defined as an area originating at the baseline of any live fire range and extending down range in the intended direction of fire to the maximum range of the largest caliber weapon to be fired.

b. Areas designated to fire High Explosive (HE) munitions are considered dedicated high hazard impact areas. Personnel access to high hazard impact areas is limited to qualified Explosive Ordnance Disposal (EOD) personnel, Range Operations personnel, and Installation Safety personnel designated by the RMA.

c. No one may enter any impact area without prior approval from Range Operations. Entry into the impact area is considered hazardous; appropriate control and supervision is mandatory.

d. Authorized persons who enter and depart the impact area must report their actions at the time of occurrence to Range Operations. Party leaders are responsible for making this contact and must report unit ID, number of personnel involved, area they are entering, purpose, approximate time required to complete mission, and mode of transport. Departure reports must include clearance of all personnel and equipment. The OIC or RSO only will make unit entry and departure reports to Range Operations. Refer to paragraph 4-4 for impact area access procedures.

e. Units will place no target material of any nature within the impact area without specific approval of the RMA. Glass, reflective metals, or other material capable of reflecting laser-light may not be used as target material within the impact area.

1-11. Scheduling

The scheduling of all activities within the Fort Knox training complex will be accomplished IAW FK Regulation 350-1 Training Management and chapter 4 this regulation.

1-12. Deviations, Waivers, and Exceptions to Policy

a. Deviations from established range standards and procedures will be developed IAW AR 385-63. Guidelines for preparing a range safety deviation packet are contained in DA PAM 385-63.

(1) The Installation Commanding General is the approving authority for all deviation requests.

(2) Units will submit requests for deviation of range safety criteria to the Installation RMA a minimum of 120 days prior to the training event.

(3) When firing under an approved deviation, a complete copy of the deviation document must be on the range. The OIC must brief the restrictions contained in the deviation to all personnel involved in the firing activity.

(4) The Range OIC and RSO are responsible to ensure training is conducted IAW the provisions of the approved deviation.

b. Requests for exceptions to policy should be submitted in memorandum format to Range Operations a minimum of 45 days prior to the training event.

1-13. Risk Management

a. All training events must have a completed, approved, Deliberate Risk Assessment Worksheet (DRAW) – DD Form 2977 IAW ATP 5-19 (Risk Management).

(1) The DRAW, signed by the appropriate residual risk acceptance level of authority, must be on site prior to being granted any kind of training status.

(2) The DRAW must be reviewed DAILY. OICs will adjust control measures based on changing conditions (i.e. extreme hot or cold temperatures, severe weather, etc.). If changes result in a higher residual risk rating, the DRAW must be referred to the appropriate risk acceptance authority for approval.

(a) Events rated LOW RISK require Company Commander or responsible O-3 approval.

(b) Events rated MEDIUM RISK require Battalion Commander or responsible O-5 approval.

(c) Events rated HIGH RISK require Brigade Commander or responsible O-6 approval.

(d) Events rated EXTREMELY HIGH RISK require General Officer approval.

b. Event DRAWs with residual risk ratings of High or Extremely High must be turned into Range Operations a minimum of 30 days prior to execution for review by Fort Knox Chain of Command. Unit commanders may be required to brief these high/extremely high-risk events to the Fort Knox Chain of Command and obtain approval prior to execution.

1-14. Overhead Fire

a. Overhead fire above unprotected troops with ammunition, pyrotechnics, missiles, and/or rockets, except where specifically authorized, is prohibited. When authorized, all ammunition components (e.g., fuze, projectile, propellant) must be certified for overhead fire and verified as such by the Quality Assurance Specialist-Ammunition Surveillance (QASAS) from the Muldraugh Ammunition Storage Area (MASA).

b. Even with authorized ammunition, units may not conduct training involving the employment of overhead small arms fire without approval from the RMA.

1-15. Serious Incidents

a. Serious incidents include but are not limited to those events causing or could cause injury to military or civilian personnel; any mishap involving a weapon or damage to a weapon; any event that damages training facilities; any event involving an unauthorized incursion into the impact area or restricted airspace; any act resulting in the destruction of government property or generates negative publicity for the Army or the Installation. The RMA will immediately take those actions required to halt or lessen the effects of a serious incident.

b. The RMA will review all serious incidents to determine the root cause and contributing factors. Additionally, the RMA will define the actions needed to prevent a recurrence and approve the return to a training status.

c. The RMA may suspend the range certification of an OIC and/or RSO involved in a serious incident (or who creates an unsafe condition contributing to the incident) pending the outcome of an investigation. The RMA may also suspend an OIC's or RSO's range certification who is found to be in violation of AR 385-63, DA PAM 385-63 and/or this regulation. The duration of this suspension is subjective and directly related to the severity of the incident or violation. Repeat offenses or lack of candor by an OIC or RSO during an investigation could result in the permanent revocation of their range certification.

d. If a unit repeatedly commits unsafe acts, disregards instructions from Range Branch Personnel, or continues activities that are in violation of AR 385-63, DA PAM 385-63 or this regulation, the RMA may suspend the unit's authorized RTA facilities.

1-16. Severe Weather

a. Range Branch will provide notification of all-weather watches, warnings and advisories to

all users of the RTA complex as they become available via the Range Operations radio nets (Land Mobile Radio - LMR - channel RGCTRL1 or FM 38.900). All OICs of training (or Sergeants of the Guard if in a manned guard status) are required to acknowledge receipt of all weather warnings and lightning advisories as directed by the ROFD. All other severe weather watches, warnings and/or advisories may be issued "in the blind" and do not require acknowledgement. However, because OICs are required to maintain communications with the Range Branch ROFD at all times while in the RTA complex (see paragraph 4-3), they are held responsible for receiving this information.

b. These weather watches, warnings and advisories are provided to the OIC for their use during their assessment of risk. The OIC of training is responsible to implement their severe weather plan whenever conditions warrant at their training site – including the curtailment and/or cessation of training activities. During severe weather events, ROFD MAY direct suspensions of training and/or other activities until the threat passes, but OICs must not rely upon this. The OIC of training will include weather as an element of the daily risk assessment for the training event and be ready to implement the unit's severe weather SOP in the event of approaching severe weather conditions. This SOP must include reaction to the threat from lightning and high winds.

c. The OIC of training is responsible for providing notification of severe weather conditions to their personnel deployed in the training complex.

1-17. Range Fires

a. Initial response to all fires in the RTA will be IAW the FK Integrated Wildland Fire Management Plan. The RMA is responsible for analyzing and establishing the fire threat in coordination with the Fort Knox Fire Department (FKFD). Fire threat conditions and restrictions are listed in Annex D. The ROFD will broadcast any change to the fire threat condition via FM 38.900 or LMR channel RGCTRL1.

b. The OIC will confirm the fire threat condition with the ROFD and consult the fire threat restriction matrix in Annex D to determine if any modifications to training are required prior to any live fire activities or the deployment of pyrotechnics.

c. OICs of training will report all fires, no matter how small, to ROFD immediately by the most expeditious means available. Report the following:

- (1) Location Universal Transverse Mercator (UTM) or Military Grid Reference System (MGRS) grid coordinates to the center mass of the fire and approximate size of fire.
- (2) Name and contact information of person reporting.
- (3) How the fire started (lightning, tracer fire, etc.).
- (4) Unit or person starting fire.
- (5) Direction fire is spreading.
- (6) Does the fire pose a threat to civilian property or range infrastructure

d. If the fire poses a threat to civilian property or range infrastructure, after reporting the OIC will cease fire/cease training and conduct firefighting operations until relieved by range personnel or FKFD. If the fire is in the impact area the unit must contact the ROFD prior to entry. Personnel are NOT authorized to fight fires in a high hazard impact area (UXO).

e. If the fire is in a training area, the OIC will move the unit out of danger and take necessary actions to extinguish or control the fire until relieved by range personnel or FKFD. The OIC will notify ROFD immediately of their unit's actions.

f. Upon notification of a fire in the RTA complex, Range Operations will report the fire to the FKFD, the Installation Operations Center (IOC), and Natural Resources. FKFD will decide whether to extinguish or manage the fire. If they decide to extinguish the fire in an impact area, FKFD will notify Range Operations, who will order a cease-fire on all the affected ranges. Firefighting equipment and personnel may enter the impact area only with permission from ROFD.

g. Using units on all ranges must identify an on-call, 10-person detail to assist in fire-fighting efforts if necessary. The detail will take direction from the senior range person on site until FKFD arrives onsite. FKFD assumes command of the incident upon arrival. Unit personnel will take additional guidance from them as appropriate.

h. Warming barrels (available upon request from Range Operations).

(1) Open fires (not contained in a warming barrel) anywhere in the training complex are prohibited.

(2) OICs may authorize fires in warming barrels provided the fires will:

(a) Not interfere with training.

(b) Not be located within 50 feet of buildings, ammunition, fuel or bleachers.

(c) Not be located where loss of control might lead to a forest or brush fire.

(d) Not be built in impact areas where duds are known to be present.

(e) Have a posted fireguard.

(3) Fuel.

(a) Units are responsible for providing firewood (no other type fuel is authorized in warming barrels). Units are not authorized to cut any standing trees for firewood. Trees already on the ground outside of the impact area may be used for fuel for warming barrels.

(b) Units are NOT authorized to burn ammunition boxes or pallets for any reason.

These materials are treated with various chemicals to preserve the wood; the toxicity of which presents a significant hazard to humans.

(4) The OIC will ensure all fires are extinguished and residue is policed prior to departing the area.

(5) The only authorized disposal site for ashes created from the use of warming barrels is in areas designated by Range Operations.

1-18. Airspace

a. Range Operations is the using agency for the SUA R3704 over the training complex. Flight operations within the SUA are prohibited unless prior coordination is made through Range Operations and Godman Army Airfield (GAAF). For additional information, see FK Regulation 95-1, Fort Knox Flight Rules; for UAS information, see FK Regulation 95-23, Unmanned Aircraft System (UAS) Flight Rules.

b. Notices to Airmen (NOTAMs) are published on the Defense Internet NOTAM Service website (DINS - <https://www.notams.faa.gov/dinsQueryWeb/>) Units desiring to conduct flight operations within the Fort Knox local flying area are responsible to review all NOTAMS pertaining to Fort Knox airspace 24 hours prior to their training mission.

c. Any person sighting an aircraft over the impact area (incursion) will report its presence (to include type of aircraft, tail number - if possible - direction of flight, estimated altitude and any other available information) to Range Operations immediately. If the range is in firing status, the OIC must immediately place the range into a cease-fire status until the aircraft has cleared the area and Range Operations approves the return to a firing status.

d. Aircraft conducting authorized over-flights of the impact area will maintain FM radio communication with Range Operations (38.900, alternate 41.800 or VHF 136.075).

1-19. Ammunition Handling and Security (see Annex A)

1-20. Unexploded Ordnance (UXO)

a. Numerous duds, UXO, or abandoned munitions may be found throughout the installation. Any person discovering suspected UXO will follow the 3 R's (Recognize, Retreat, and Report) of UXO safety and take the following actions immediately:

(1) Recognize the object could possibly be a UXO. Mark the area with engineer tape or other non-metallic material. Do not use stakes or other methods that may require disturbing the

earth around the UXO.

(2) Retreat to a safe location (minimum 300m). Ensure all personnel maintain this distance from the UXO until help arrives.

(3) Report the grid location and type of UXO (if known) to Range Operations.

b. All UXO (duds) are considered unstable and highly dangerous. Handling of UXO is restricted to EOD personnel only.

c. Access to contaminated areas or areas suspected of containing UXO/duds are strictly controlled by Range Operations to reduce risk. Removal of UXO from any impact area is not authorized unless under EOD control and with RMA approval.

d. Specific areas within the impact area are considered high threat UXO areas due to the extended use of dud producing munitions. DA PAM 385-63 prohibits the creation of additional high-hazard impact areas. Munitions with the potential of generating dud contamination are restricted to those impact areas already known to present a dud threat.

1-21. Hunting and Fishing in the RTA Complex

a. FK Regulation 200-3, Fort Knox Hunting and Fishing Regulations and Procedures, contains additional information regarding this topic. An iSportsman account is required to hunt or fish on Fort Knox; link to website - <https://ftknox.isportsman.net>.

(1) Range Operations releases those training lands (containing established hunting areas) not required to support military exercises for Hunt Control use on a weekly basis to support authorized hunting and fishing activities.

(2) Areas released for hunting may be located adjacent to areas assigned or reserved for unit training. Hunters should be aware unit training may be occurring and take additional precautions. Additionally, OICs of training should be aware of hunting activities and include mitigating procedures in the unit risk assessment.

(3) If recreational activities interfere with training, the training unit should contact Range Operations immediately.

(4) Impact areas are off limits without RMA approval.

(5) All entries into range and training area complex for the purposes of hunting or fishing will be coordinated through the Hunt Control Office and in accordance with the current hunting/fishing guidelines and FK Reg 200-3. No entries will be permitted without proper check in thru Ft Knox [iSportsman](https://ftknox.isportsman.net).

(6) The use of off-road vehicles, motorcycles, and animals such as horses and mules is strictly prohibited. ATV/UTV exceptions will be IAW FK Regulation 200-3.

(7) Hunting is prohibited within the confines of an established range area or bivouac site. This restriction includes the entire area including the baseline support area and the down range target area.

(8) Glass containers of any kind (i.e. jars, bottles, etc.) are not permitted in the range and training area complex. Personnel authorized entry into a hunting area will not have these items in their possession. Personnel observing glass in these areas are requested to report the location to Hunt Control or Range Branch.

(9) While hunting or fishing on Fort Knox, personnel may not dig or remove anything from the complex that appears to be man-made. Any artifacts discovered while hunting or fishing should be left undisturbed and reported to the cultural resource office.

b. POV requirements.

(1) All restrictions listed in paragraph 1-9d are applicable.

(2) All POVs entering the Fort Knox training complex for hunting must display a copy of a valid iSportsman permit in the windshield for all occupants.

(3) No vehicles are permitted on lake dams or grass areas (food plots).

(4) Hunters/fishermen must take the most direct route to and from their assigned area (the area assignment sheet is not a joy riding pass).

(5) Parking restrictions. POV parking is not authorized in any range area, bivouac site, or food service (mess) area. POVs must be parked in a manner that does not obstruct gates, roads, or trails, or impede the flow of traffic. Roads and trails must be kept clear to facilitate the movement of emergency response vehicles in the event they are required.

1-22. Environmental Protection and Conservation

a. General environmental protection and conservation effectiveness are the responsibilities of all personnel using the training complex. Commanders must ensure wanton or deliberate destruction of natural resources during training exercises is not permitted or tolerated.

b. All training activities will incorporate the best management practices as outlined in the current edition of the [Fort Knox Environmental Handbook \(Issue 2025\)](#).

c. Maximum use will be made of established tank trails and roads for administrative moves and road marches of tactical vehicles.

d. Freshly seeded areas will not be used for training. These areas are usually marked with "Off Limits" signs or Seibert Stakes, or as identified on the RFMSS request summary.

e. Units will not wash vehicles or maneuver within 75 feet of any established streambed. Vehicles will enter streams only during approved fording operations and only at approved fording sites.

f. No training will be conducted inside cemetery fencing or within a 50 meter buffer around any cemetery.

g. Vehicles will not refuel on a range firing line while firing is in progress, unless the operation is separated by a distance of 300m or more.

h. Units will report ALL petroleum spills to ROFD immediately. Range Operations will notify the Fort Knox Fire Department and the Environmental Management Division (EMD) who may send a representative to inspect the site and advise the unit how best to clean the spill or provide assistance as required in the event of a large spill.

(1) Units must deploy with sufficient spill kit material to contain Petroleum, Oil and Lubricants (POL) products from the most likely worst-case scenario they might encounter based upon unit equipment and capacity.

(2) Units are expected to clean up any POL contamination immediately and will not be allowed to clear a facility before doing so.

i. Sanitary landfills (dumps) or grey water sumps will not be dug except as coordinated with EMD, Directorate of Public Works (DPW), Integrated Training Area Management (ITAM), and approval from Range Operations.

j. Tree cutting: Fort Knox has two federally listed endangered species (gray bat and Indiana bat) and one federally threatened species (northern long-eared bat). The Endangered Species Management Plan (ESMP) requires that trees 3 inches or greater diameter at chest height (may be amended as required) may only be removed during specified periods as outlined in the Fort Knox Environmental Handbook. Cutting of any trees at any time must be coordinated through the DPW Natural Resources Branch.

(1) Cutting of firewood will be accomplished IAW FK Pam 420-2, Procedures for Firewood Cutting on Fort Knox Reservation.

(2) The cutting of trees and bushes for use as camouflage within the cantonment area is prohibited.

(3) Trees and bushes may be used for camouflage purposes in training areas with Eastern Red Cedar as an unrestricted species. All other species may be used up to two inches in trunk diameter.

k. Digging: Units must coordinate with Range Operations prior to digging (i.e. foxholes, vehicle fighting positions, sumps, etc.) anywhere in the range and training area complex. Units must submit a Memorandum through Range Operations to Environmental Management Division, Cultural Resources Office, at least 30 days in advance of the event.

- (1) Memorandums should include the following:
 - (a) Date(s) of training
 - (b) Location of training (8 digit grid coordinates and/or attached overlay depicting boundaries of area(s) to be disturbed).
 - (c) An approximate acreage or square footage of the area to be disturbed.
 - (d) Provide as many details as possible; type of digging (foxhole, tank ditch, etc.); and method of digging (by hand, type of equipment, etc.); approximate dimensions, number of emplacements, etc.
 - (e) Acknowledgement the unit is responsible for filling in the holes.
- (2) If artifacts are found, the unit must immediately stop digging and notify Range Operations. At no time will artifacts be removed from the training complex without permission from the Cultural Resources Office.

l. Field latrines: Do not dig field latrines (i.e. "cat holes", straddle trenches, etc.) in the training complex. Units will use facility latrines or portable toilets in the field. Units must make coordination with the current portable toilet contractor for these services. Units are responsible for all costs associated with this service.

m. Dumpsters/recycle containers: Units requiring dumpster or recycle container support must coordinate for this service as well. Units must submit a memorandum through Range Operations to the contractor for the placement of these containers. All containers must be removed at the end of the training event. All trash should be secured or recovered prior to sundown to avoid wild animal encroachment.

1-23. Construction and Modification of Ranges/Training Areas

- a. No modification to any range facility will be made without prior coordination with Range Operations and approval of the RMA.
- b. All requests for repair of existing training complex facilities will be identified and submitted to Range Operations and forwarded to DPW on a DA Form 4283, Facilities Engineering Work Request. The facility number, name, grid coordinates, and description of required repair must be clearly stated as well as a POC who will oversee/approve the work.
- c. Units desiring to make minor modifications to facilities, such as painting, fencing, posting of signs, installation of barriers, minor erosion control efforts, range road improvements, and/or small construction projects (whether they are to be completed by the requesting agency or not) will be submitted to Range Operations for RMA approval. All projects will include a detailed justification, plan, and funding source(s).
- d. Major modifications to existing facilities and all new facility construction projects must be coordinated with the RMA. A complete project narrative must be provided by the requesting unit addressing the following:
 - (1) Requirement - Why is the project needed now? Give detailed statements as to precisely why the project is needed. Include subject to be taught/table to be fired, and number of Soldiers to be supported.
 - (2) Current situation - How is the need currently being met? Describe how and under what conditions the requirement is presently being met, including facility number and use. Comments should support the requirement by describing the assets in use; give reasons why they are not suitable for continued use. Include all compelling reasons for approving the project. Data should be specific and detailed; include data for each project, if different.
 - (3) Impact if not provided - what will be the result if the project is not approved? Describe the manner and extent to which mission accomplishment would be affected if the project were not approved.
 - (4) Consideration of alternatives - Present evidence that all alternatives have been examined, evaluated, and rejected in favor of the project.
 - (5) Analysis of deficiency - Evaluate the quality of the facilities now being used.

Determine physical deficiencies and how they hinder accomplishment of the mission

Chapter 2 Organization

2-1. General

DPTMS Range Branch is responsible for the planning, development and execution of policies and procedures supporting the safe and efficient use, maintenance and modernization of ranges, impact areas and training lands comprising the 101,000-acre Fort Knox RTA complex and supporting airspace in accordance with all applicable publications.

2-2. Installation Range Management Authority (RMA)

a. The RMA serves as the central point for control and coordination for all activities conducted within the installation range and training area complex to ensure safety and unified operations. The RMA's responsibilities include:

(1) IAW AR 350-19 (The Army Sustainable Range Program), AR 385-63, and DA PAM 385-63 the RMA will:

(a) Manage the Sustainable Range Program for Fort Knox.

(b) Supervise and enforce DA and Fort Knox policies.

(c) Maintain the Range Control Master Plan (RCMP) to ensure the training complex remains relevant to training.

(2) Withdraw or suspend installation training complex privileges from any person, organization, agency, or club that willfully violates AR 385-63 and DA Pam 385- 63 or local regulations and procedures; or from any person whose ability or conduct is incompatible with the safe use of government ranges structures and facilities.

(3) Approve visits (military and non-military) to ranges.

(4) Serve as the Safety Officer and Fire Marshal for the range and training complex.

(5) Assist the OICs of training to ensure the efficient and safe operational use of ranges and training areas. Assistance will include, but is not limited to, the inspection of firing and training facility use to ensure compliance with this regulation.

(6) Prepare and disseminate, as needed, the range and impact area schedule and other appropriate notices. Prepare a daily training complex schedule, which serves as the document of record for scheduled training complex use.

(7) Designate danger areas within the training complex and ensure they are properly marked with appropriate warning signs and required barriers at appropriate points.

(8) Take appropriate measures to protect personnel located in the downrange impact areas.

(9) Supervise all sections that make up Range Branch.

(10) Ensure range equipment is properly accounted for and maintained in a serviceable condition.

(11) Ensure special targets, target materials, and range equipment is available for issue to using units, within imposed resourcing limits.

(12) Ensure personnel wear hearing protection devices IAW AR 40-5 and other personal protective equipment (PPE) as required.

(13) Justify the conduct of fire over the heads of unprotected troops.

(14) Develop local SOPs for the safe operation and usage of ranges and training facilities.

(15) Exercise primary control of all gates and barriers employed in the training complex.

(16) Ensure user awareness of all environmentally sensitive areas and their associated restrictions.

b. Range Operations. Range Operations responsibilities include:

(1) Conduct range safety briefings leading to command certification of OICs and RSOs. Maintain a database of certified personnel.

(2) Serve as office of record for all training complex data. Record and compile daily use data.

(3) Coordinate all vehicle and foot movements in the range and training area complex.

(4) Schedule facilities, manage and record data on the utilization of all facilities with the Fort Knox range and training area complex via RFMSS.

(5) Schedules, manages and records data on the utilization of SUA R3704.

(6) Oversees all ROFD Activities.

c. Range Operations Firing Desk (ROFD)

(1) Central point of authority to coordinate all activities occurring within the training complex and associated airspace to ensure its safe and efficient use by all personnel.

(2) Serves as a Net Control Station (NCS) on the Range Branch radio net frequencies; LMR talk group RGCTRL 1, FM 38.900 (Primary), FM 41.800 (Alternate) and VHF 136.075 (aviation). Serve as NCS during all Medical Evacuation (MEDEVAC) operations within the training complex.

(3) Approve or disapprove requests for impact area entrance (air and ground).

(4) Identify and terminate unsafe acts within the training complex and report such events to the RMA.

(5) Provide weather watches, warnings and advisories as well as road condition reports to units and personnel operating within the training complex.

d. Safety

(1) Conduct required safety inspections of high-risk training facilities.

(2) Perform investigations of safety related range incidents.

(3) Review Deliberate Risk Assessment Worksheet (DRAW) to ensure proper approval authority has signed it, and the DRAW is filled out IAW applicable publications.

(4) Review for accuracy and/or develop Danger Zone (DZ) diagrams.

(5) Conduct "live fire" walk-throughs with units (as required).

(6) Process requests for use of SUA R3704 (FK Form 8175) to ensure the safe, efficient use of restricted airspace.

2-3. Range Technician (RT)

a. Conduct facility sign-on and clearance to include before, during, and after inspections.

b. Brief the OIC of special requirements associated with facility use (i.e. road guards, range limit markers, etc.).

c. Provide on-site assistance to the OIC of training in support of their training mission on all training facilities.

d. Observe training activities for compliance with this regulation and other related regulatory publications.

e. Perform and supervise preventative maintenance of training facilities.

f. Unit coordination point for the following services:

(1) Target setup and maintenance support for non-instrumented ranges requiring target lifting devices.

(2) Target operator training for Targetry Range Automated Control and Recording (TRACR) or legacy range.

(3) The development of target scenarios and DZ's aligned to the Commander's intent to include supporting the end users tactics, techniques, and procedures. (If applicable) for all training events.

(4) Atmospheric (props, role players, facades, etc.) and special effects (pyrotechnics, flame, fog, targetry, etc.) as requested and within resourcing limits.

g. Check all training facilities periodically for serviceability, incidents of vandalism, and acts

of trespassing by performing required physical security and anti-terrorism checks in assigned areas.

h. Patrol all roads within the training complex; identify unsafe or prohibited activities by this regulation and report such activities to the RMA.

i. Establish and report road conditions during inclement weather to the ROFD. Supervise the removal of debris, snow and/or ice through appropriate channels.

j. Provide target systems operators to operate, control and maintain selected ranges instrumented with computerized target systems or where the complexity of the training requires such support.

k. Perform preventive maintenance and repairs on target devices. Store and issue targets, target devices, and associated equipment. Provide maintenance support and set up of devices for training units conducting special training scenarios

l. Provide escort and assistance to outside agencies within the training complex to facilitate emergency response.

2-4. Maintenance Section

a. Construct and provide targets and target support materials to include painted targets and specialty design targets. Plan, construct and install modular and facade training structures in the complex.

b. Perform maintenance on range facilities, including the construction and maintenance of range barriers and gates. Provide light earth moving equipment and heavy forklift support. Provide and operate specialty equipment and tractors to provide mowing support.

c. Maintain dispatch, work order repair, and scheduled service of all equipment to include tractors, bush hogs weed eaters and specialty vehicles assigned to Range Branch.

d. Provide work order submission support for facility maintenance and provide preventive maintenance and repairs to structures in the training complex.

2-5. Integrated Training Area Management (ITAM)

a. The ITAM program is part of the Sustainable Range Program (SRP). It provides the RMA the capability to manage and maintain training and testing land by integrating mission requirements with environmental requirements and sound land management practices.

b. Environmental protection and conservation effectiveness are the responsibilities of all personnel using Fort Knox training facilities. Commanders must ensure no unwanted or deliberate destruction of natural or harvestable resources occurs during training exercises or is tolerated.

c. ITAM responsibilities include:

(1) Provide maneuver land capability to support training mission requirements.

(2) Ensure sustained accessibility, capability and capacity of maneuver training land.

(3) Monitor training land conditions to identify land maintenance and repair requirements.

(4) Improve existing training land capabilities by conducting land reconfiguration projects to support validated mission requirements.

(5) Improve existing training land capacity by conducting land maintenance and repair projects to support existing and future mission needs.

(6) Promote awareness of mission land capabilities and management issues to avoid unnecessary maneuver damage and environmental impacts.

(7) A Geographic Information Systems (GIS) capability supporting both the ITAM and the Range Training Land Program (RTLTP) with digital photo maps of the training complex.

(a) Units may obtain military maps of their assigned training areas from Range Operations.

(b) Aerial photomaps are available by request from the ITAM GIS office. These photomaps clearly identify the trails, wetlands, streams, and areas of concern for each training area.

(8) Ensure mission needs are considered in environmental (e.g., Integrated Natural Resources Management Plan, Integrated Cultural Resources Management Plan, agricultural leases, annual burn plan, timber harvest plan) and facilities planning, and training land capabilities constraints are considered in mission planning.

(9) All National Environmental Policy Act (NEPA) support for the SRP activities.

Chapter 3

Unit OIC/RSO Certification and Responsibilities

3-1. General

Individuals selected to perform the duties of an OIC and/or an RSO of a range or training area must be certified to do so by their unit commander.

3-2. Officer in Charge (OIC)/Range Safety Officer (RSO) Certification

a. The Installation RMA will ensure all personnel selected to perform the duties of OIC and RSO are briefed on their duties and responsibilities as they pertain to their interaction with Fort Knox Range Operations.

b. DPTMS Range Branch schedules a weekly OIC/RSO safety/certification briefing most Thursdays at 1300 in building 9308. The briefing is first come/first served. Individuals who must travel to attend should call ahead prior (502-624-2125) to verify the class has not been canceled). Briefings are NOT scheduled on Federal holidays.

c. The in-person OIC/RSO safety/certification briefing concludes with a written test for all attendees. DPTMS Range Branch issues an OIC/RSO certification card (FK Form 1769) to all who successfully pass this test. Unit commanders must sign this card certifying individuals on specific weapon systems to perform the duties of OIC and/or RSO. These cards must be re-signed whenever the commander changes out. This card is valid for one year. Upon expiration, individuals must re-attend the briefing and retest in order to maintain currency with any changes or updates since the previous briefing.

d. For those units whose schedules do not allow in person attendance to the weekly class, please contact the Range Operations Supervisor (502-624-2858) to coordinate a remote class conducted via MS Teams offered on Thursdays at 1300 held in conjunction with the in-person briefing.

e. To schedule the remote OIC/RSO safety/certification briefing:

(1) Units must have a field grade officer request the class (email is sufficient) from the Fort Knox Range Operations Officer (contact Range Branch Administrative Assistant for contact information). This request will confirm the unit's schedule does not allow for in-person attendance and will designate a POC to coordinate on the unit's behalf.

(2) Once approved, the POC will submit a memorandum to the Range Operations Supervisor – signed by their O5 battalion level commander – specifying what specific weapon systems the individuals within the command are certified to perform the duties of OIC and/or RSO, and to schedule the date for the briefing.

(3) Immediately upon the conclusion of the class, the unit POC must submit a hand-signed class roster to the Range Operations Supervisor. The Range Operations Supervisor will issue an OIC/RSO safety/certification card to those individuals whose names appear on both documents.

3-3. Certifying Official

a. Once minimum grade requirements for OIC and RSO are met (Table 1-1, DA PAM 385-

63), Commanders, Directors, and Branch Chiefs have the authority to certify individuals to perform duties IAW AR 385-63, DA PAM 385-63, and this regulation.

b. Certifying officials will sign the bottom of the OIC/RSO Range Certification Card with the type of training the individual is certified to conduct and in what capacity (OIC and/or RSO).

c. Certifying Officials are strongly encouraged to attend the range certification brief to familiarize themselves with Fort Knox Range Operations policies, procedures, and potential hazards in the local training environment.

d. Certifying Officials are responsible for:

(1) Unit compliance with appropriate regulations, field manuals, technical manuals, and higher headquarters directives.

(2) Establishing proper security of arms, ammunition, and equipment.

(3) Establishing and maintaining a safety certification program for their OIC and RSO IAW AR 350-19, AR 385-63, and DA PAM 385-63.

(4) Assigning OIC duties early enough to allow their OIC to meet their responsibilities for a scheduled facility.

3-4. Officer in Charge (OIC)

a. Qualifications:

(1) Meet the grade requirements of DA PAM 385-63, Table 1-1.

(2) Satisfactorily complete unit and Range Operations range safety briefing/test.

(3) Be weapon systems qualified as certified by the certifying official (i.e. Commanders, Directors, and Branch Chiefs).

b. Duties and responsibilities. The OIC of training is responsible for all activities involving the use of a training facility. AR 385-63 provides a complete listing of OIC duties. This responsibility begins with training coordination and continues through the occupation, conduct of training, closing, and clearance of the training facility. The OIC will ensure all operations are conducted within established and approved procedures provided by applicable regulations. In the instance where a facility is utilized by more than one unit at the same time a co-use memorandum is required (see paragraph 4-5e). All OICs involved share equal responsibility for the conduct of training and clearance for the entire site. This does not release individual OICs from meeting all regulatory requirements for their individual areas.

c. Duties.

(1) Be physically present on the facility and located in a position to control all actions occurring on the range, facility or TA while in any kind of training status.

(2) Request all changes to or from a training status (only the OIC can make this request).

(3) Except in unique circumstances, OICs will not participate in training.

(4) Ensure the RSO is physically present at the training site and has no other duties assigned.

(5) Determines when it is safe to fire in accordance with applicable regulations and installation range requirements.

(6) Requests final clearance to fire from Range Operations.

(7) Submits required reports in a timely manner IAW paragraph 4-12.

(8) Provides proper supervision of personnel performing misfire, hang-fire, and cook-off procedures.

(9) Establish and maintain required communications IAW paragraph 4-3.

(10) Ensure a safety briefing has been issued to all personnel on site before training begins. If the scheduled training includes a night portion, a separate safety briefing is required prior to the commencement of that portion of the training.

(11) Ensures safe laser operations.

(12) Ensures the onsite medical support meets the requirements outlined in Annex B or

IAW the unit DRAW (whichever provides the higher level of medical support).

(13) Ensures ammunition and explosives are properly handled, transported, stored and accounted for (See ANNEX A) within the training complex from the time of receipt to the time of expenditure or turn in IAW AR 190-11 (Physical Security of Arms, Ammunition, and Explosives), DA PAM 710-2-1 (Using Unit Supply System Manual Procedures), and DA PAM 385-64.

(14) Maintains a written log of pertinent safety and control data associated with the operation of a range and/or training area (i.e. authorized operating times, impact area entries and exits, training status changes, range incidents, weather advisories, etc.).

(15) Coordinates plans for firing exercises and maneuvers with Range Operations at least 30 days prior to execution.

(16) Control access to impact areas in order to prohibit entry by unauthorized personnel.

(17) Report all ammunition malfunctions and accidents to Range Operations immediately in accordance with AR 75-1 (Malfunctions Involving Ammunition and Explosives), AR 385-10 (The Army Safety Program) and FK Regulation 385-10 (Installation Safety Program).

(18) Coordinates and request approval for all visitors to their training site from Range Operations (paragraph 1-4).

(19) Brief the RSO on the duties to be performed in support of the training event. Clearly establish the requirement for the RSO to brief the OIC on the safety of the facility, the unit, and the overall readiness to commence live-fire operations prior to the start of firing.

(20) Implement risk management in all phases of the training event.

(21) Issue a "cease-fire" when ordered to do so by the RMA or Range Branch representative. The OIC must develop and employ sufficient internal controls and communications to immediately obey cease-fire, cease-fire freeze, or cease training orders.

3-5. Range Safety Officer/Laser Range Safety Officer (RSO/LRSO)

a. Qualifications:

(1) Meet the grade requirements of DA PAM 385-63, Table 1-1.

(2) Satisfactorily complete unit and Range Operations range safety certification programs.

(3) Be weapon systems qualified as certified by the certifying official.

b. Responsibilities. The RSO is responsible for the safe conduct of all activities involving the use of a training facility. AR 385-63 provides a complete listing of RSO duties. The RSO must be present on the range during the entire period the range is in a training status and will NOT be assigned any ADDITIONAL DUTIES during the training event. The only authorized exception is for aviation weapons systems training where instructor pilots may assume RSO duties. The RSO will be thoroughly familiar with this regulation, safety requirements outlined DA Pam 385-63 and all other applicable references to the weapons and ammunition being fired.

c. Duties.

(1) The RSO will conduct final coordination with the OIC prior to commencing live-fire operations. The RSO will report the following actions, at a minimum, have been completed/verified:

(a) Weapons and personnel are properly positioned IAW DZ or range deviation.

(b) Authorized ammunition and explosives, to include proper charge, fuze, and fuze settings are being used.

(c) DZ/down range impact area is clear of all unauthorized personnel.

(d) Appropriate or required Personal Protective Equipment (PPE) is properly worn by all personnel IAW applicable regulations, field and technical manuals.

(e) Positive communications have been established with Range Operations and the firing element.

(f) All vehicle safety guards are present, operational and employed properly IAW

appropriate technical manuals.

- (g) Safety briefing has been issued to all personnel on site.
- (2) Ensures the OIC has obtained a "Live Fire Training Status" from Range Operations prior to allowing live fire activities to commence.
- (3) Orders an immediate cease-fire or check fire when any unsafe condition occurs or is observed.
- (4) Reports all accidents and ammunition malfunctions to the range OIC immediately.
- (5) Upon completion of a firing order, verifies all weapons and/or weapons systems are clear and safe before allowing the removal of weapons from the firing area; informs OIC of the same.
- (6) During laser operations:
 - (a) Ensures unit personnel employing lasers comply with the provisions of DA PAM 385-63. Also ensures unit personnel attending the safety briefing receive a thorough explanation of specific laser related hazards, safety equipment, and detailed range safety procedures.
 - (b) Knows and observes horizontal and vertical safety limits of the laser range.
 - (c) Follows unit SOPs for laser operations and training exercises.
 - (d) Ensures all personnel engaged in laser operations, to include personnel in target areas, maintain continuous communications.
 - (e) Ceases laser operations immediately if communications is lost.

Chapter 4

Procedures

4-1. General

This chapter outlines the procedures required to safely and efficiently operate ranges and training facilities on Fort Knox in order to maximize the capability, availability, and accessibility of ranges and training lands to support doctrinal requirements, mobilization, and deployments under normal and surge conditions.

4-2. Minimum Requirements for Training. The following is a list of items required to begin training on Fort Knox.

- a. Original OIC/RSO Range Certification Cards (no photocopies) signed by certifying official.
- b. Request Summary (Range Contract).
- c. FK Regulation 385-22 (this regulation).
- d. AR 385-63 Range Safety.
- e. DA PAM 385-63 Range Safety.
- f. Ammunition Information Notices (AINs) (as required) applicable to the ammunition being used. AINs and other useful information about munitions and explosives safety can be found at the Defense Acquisition University website <https://www.dau.mil/cop/ammo/Pages/Topics/Munitions%20Info.aspx>.
- g. Firing Tables (as required).
- h. Field Manuals (FMs), Technical Manuals (TMs), Training Circulars (TCs), and any Technical Bulletins (TBs) and other appropriate doctrinal/training/maintenance publications applicable to the training being conducted and weapons systems being employed.
- i. Uniform for training is dictated by the unit commander unless otherwise specified by regulation or other doctrinal publication.
- j. Event DRAW approved and signed by the appropriate risk decision authority IAW FK Regulation 385-10. Required to be updated daily.
- k. Functional compass (live fire) and/or proper equipment to measure the quadrant elevation of the weapon system used (if not already so equipped - e.g. Gunners Quadrant for

tank or Mobile Gun System (MGS).

- l. Current Fort Knox Military Installation Map 1:50,000 (WGS84).
- m. A method of marking an aerial medical evacuation Landing Zone (LZ) for both day and night operations.
- n. Unit copy of approved DZ or deviation of range safety criteria packet (as applicable).
- o. Combat Lifesaver (CLS) or equivalent (at a minimum) with CLS bag on site before ANY training may commence. For event specific requirements (see Annex B).
- p. Dedicated, covered, litter-capable vehicle, identified as a non-standard evacuation vehicle, with an assigned driver on site. For event specific requirements (see Annex B).
- q. Any other specialty equipment required by doctrinal publications to ensure the safe operation and employment of the weapon system/ammunition (i.e. aiming circles, etc.).

4-3. Communications

- a. This paragraph provides notice that ALL COMMUNICATIONS WITH THE ROFD (LMR, FM, or landline) ARE RECORDED for historical and/or accident investigation purposes.
- b. Units are required to maintain positive communications with the ROFD at all times. Immediately upon realizing the loss of communications with the ROFD, the OIC will bring their facility to an immediate cease fire/cease training status until communications are restored.
- c. OICs of training anywhere in the Fort Knox RTA, shall maintain radio communications (LMR, FM, or VHF) with the ROFD at all times. OICs of live fire training events shall maintain a secondary means of communications with the ROFD. OICs conducting non-live fire training are encouraged to establish a second means of communication. OICs shall cease fire/cease training immediately upon loss of communications with the ROFD until it is re-established.
- d. The primary means of communication with the ROFD is FM or Land Mobile Radio (LMR), the alternate means is landline. Range Operations will continuously monitor and serve as a net NCS on the following radio nets:
 - (1) LMR talk group RGCTRL 1.
 - (2) FM 38.900 (Primary) and FM 41.800 (Alternate).
 - (3) VHF 136.075 (Aviation).
 - (4) LMR talk group MEDEVAC (FM 36.200 for those units without LMR).
- e. Cell phones are authorized for use in the complex to coordinate training. Due to terrain and/or atmospheric, however, there are many "dead spots" on Fort Knox and cell phones should NOT be relied upon as a positive means of communication.
- f. The range telephones are for official use only and will not be used to conduct personal business. Modifications to range drop lines are prohibited without prior coordination with Range Operations and the Fort Knox Network Enterprise Command (NEC).

4-4 Training Complex/Impact Area Access

- a. All personnel are prohibited from entering the Fort Knox range and training area complex for any unscheduled activity (including leader/facility recon) or event without specific authorization from Fort Knox Range Operations (see exceptions for authorized recreational activities as described in para 1-21 and ANNEX I).
- b. Scheduled users of the FKKY range and training area (RTA) complex are restricted to only those facilities and/or events appearing on their RFMSS Request Summary and/or movement overlay. Do not enter any range, training area, firing point or other training facility in RTA complex not appearing on one of these documents without receiving permission from Range Operations to do so.
- c. The portion of any live fire range forward of the established baseline is considered impact area. Movement forward of the baseline (into the impact area) is not permitted without permission from Range Operations.
- d. Unit access to the impact area forward of the baseline is normally only permitted for the

following purposes:

(1) If the unit's Range-Operations-approved firing scenario/SDZ includes such movement, after the OIC requests transition to a live fire status and activation of the SDZ such movement would be authorized when the ROFD grants the live fire status.

(2) To perform target maintenance (see para 4-4e below).

(3) To conduct leader recon/terrain walk. Unit must coordinate access with ROFD prior to (see para 4-4e below).

e. If the unit requires access to the impact area, the OIC/party leader shall contact the ROFD and take the following actions:

(1) Request to place the range into a temporary cease fire status (if applicable).

(2) Request permission to log personnel into the impact area (provide the following):

(a) Name and rank of person in charge of the down range detail.

(b) Location of where the downrange personnel will be located in the impact

area.

(c) Number of personnel and vehicles that will be in the impact area

f. When the downrange party has completed operations in the impact area and have returned, the OIC must notify the ROFD that all personnel and equipment are accounted for and clear of the downrange area (on the up range side of the baseline).

4-5. Resource Scheduling

a. Fort Knox resources are scheduled utilizing the Range Facility Management Support System (RFMSS). RFMSS is a web-based, standardized, integrated system designed to efficiently schedule and manage firing ranges and training areas. Units can utilize RFMSS to request training facilities and track the status of those requests once submitted.

b. Unit schedulers with RFMSS accounts will submit all facility requests directly into [RFMSS](#). Those needing accounts should log into [RFMSS](#) and click "Request New Account" or contact the Fort Knox RFMSS Functional Administrator for assistance (read only access does not require a RFMSS account).

c. For all units (tenant and external – those organizations not assigned or aligned with Fort Knox) who do not have an assigned/designated scheduler with a RFMSS account, contact the Range Operations Scheduler at (502) 624-2615 for assistance in scheduling resources. For these units, the scheduling process begins with the submission of FK Form 3663 External Unit Support Request to the Range Operations Scheduler. The form is available here: [FK Form 3663](#).

d. Priority of resources. Resources are allocated IAW the training priority list published in FK Regulation 350-1.

e. Co-Use: When more than one unit desires to occupy/train on a single facility at the same time, they must complete a co-use memorandum. The memorandum must be signed by both unit commanders. The co-use memorandum must be returned to the DPTMS Range Branch Scheduler at least 30 days in advance of the training date and presented to the Range Technician upon sign-on. This memorandum should be maintained by both unit OICs throughout occupation and clearance.

4-6. Recurring Resource Scheduling Considerations

a. There are several recurring events throughout the year that impact training. DPTMS Range Branch attempts to minimize their impact to training units, but some are unavoidable, and units should take them into consideration when planning training.

b. These events are:

(1) Kentucky Derby airspace restriction. The Kentucky Derby occurs the first Saturday of every May. Visitors from all over the world fly into Louisville, KY, to see the event. Airspace is reduced to 3999' MSL beginning the Thursday before the Derby until midnight Sunday after the

Derby. Impacts to training from this event are:

- (a) Live fire training is restricted to 50 cal and below ONLY during this period.
- (b) No aviation live fire permitted.
- (c) All live fire facilities must post air guards while in a live fire training status.
- (d) An associated event with the Kentucky Derby is known as Thunder Over Louisville.

It includes one of the largest fireworks and airshows in the country. It occurs two weeks before the Derby and may also impact airspace. Units desiring to utilize aviation assets and/or indirect fire should contact Range Operations early on to check on practicality during this time.

(2) Memorial Day Cemetery Visitation. Each Memorial Day, Fort Knox ceases training to allow visitors to enter the installation so they may visit friends and relatives buried in the many cemeteries contained within the installation's boundaries. Many of these cemeteries are located in the live fire impact area and only accessible on this one day. Impacts to training from this event are:

(a) No training during the period 0800 – 1600 on Memorial Day or until all visitors have exited or been accounted for in the range and training area complex – whichever occurs later.

(b) Preparation for this event begins in March each year. Facility request summaries (contracts) will be annotated with notes informing units they MAY be subject to mandatory cease fire periods between 0600-1200 daily while Directorate of Public Works crews are performing maintenance on the cemeteries and roads in the impact area.

(c) No high explosive ordnance may be fired anywhere in the range and training complex for the two days immediately preceding Memorial Day.

(3) Muldraugh Ammunition Storage Area (MASA) quarterly inventory. MASA closes for inventory (typically the last week) of every quarter. Units may not draw ammunition or turn-in residue during this time. Unit ammunition support personnel may call 502-624-8154 to check actual closure dates and to schedule draws/turn-ins. Units scheduled for training during these inventory times should plan to schedule land and an appropriate guard force to secure their ammunition during these times.

4-7. Coordination

a. Units must complete coordination with Range Operations for all required support NLT 30 duty days prior to the first scheduled training day. Coordination efforts under 30 days may not be fully supported due to prior commitments.

b. Once the facilities are scheduled, the OIC of training must contact the Range Operations Live Fire Facilities Supervisor or Urban Facilities Supervisor (as appropriate) to coordinate the following items at least 30 days in advance of their training event. Failure to do so could result in Range Operations' inability to support the event because of support committed elsewhere.

Those items are:

- (1) Live fire scenarios and/or training Concept of Operations (CONOPs).
- (2) Field Ammunition Supply Points (Field ASPs) (see Annex A).
- (3) Targetry (to include non-standard targets – if required).
- (4) Staff support (on manned facilities outside of M-F 0730-1500).
- (5) Tower operator training.
- (6) Target operator maintenance/training.
- (7) Equipment pick-up and turn in dates.
- (a) Equipment for weekend or holiday firing will normally be picked up by 1500 the last workday before weekend or holiday firing.

(b) Units must adhere to coordinated turn in times to ensure follow on requests can be honored.

(c) Units failing to meet turn in appointments will not receive additional equipment issues until their hand receipt is cleared.

(8) Danger Zones: Range Operations will evaluate all live fire scenarios to determine if

a discreet DZ is required. If a discreet DZ is required, units will submit or coordinate the construction of the DZ with Range Operations. DZs will be constructed IAW DA PAM 385-63 and contain the following information:

- (a) Left and right firing limits (degrees or mils).
- (b) Grid to firing point or area.
- (c) Grid to target point or area.
- (d) Unit.
- (e) Ammunition (by DODIC), nomenclature and other data as outlined in the appropriate table in DA PAM 385-63.
- (f) Control measures unique to the firing event.

4-8. Occupation of a Facility

a. A unit must arrive on site at the scheduled range or training facility within one hour (+/-) of the scheduled occupation time and contact Range Operations to request sign-on. If the unit cannot arrive on site during this window, call Range Operations to coordinate a new sign-on time. Failure to do so constitutes a no show which could result in the cancellation of the unit's request summary and the release of the facility for other unit use. This data is further compiled and reported at the monthly G3 Synchronization meetings.

b. If a unit occupies a facility prior to contacting Range Operations for an official sign-on, the unit accepts the facility in an "as is" condition and is responsible to clear the entire facility at the completion of training.

c. Range Operations will dispatch a Range Technician (RT) to conduct the sign-on. The individual signing for the facility must possess a copy of the facility Request Summary (aka "contract"), FK Form 1769 (OIC/RSO Range Certification Card) and a copy of the co-use memorandum (if applicable).

d. The OIC and RT will conduct a joint inspection of the facility during the sign-on. The RT will provide the unit with a copy of the sign-on/clearance checklist (see Annex H) once the process is complete. This checklist will identify the results of the pre-use inspection and any additional clearance requirements.

4-9. Place a Facility in an Occupied Status: Below are the different "occupied" statuses recognized by the ROFD. The OIC of training should contact the ROFD to request this status change.

a. Occupied for setup. This status is used to conduct all activities required to prepare the unit and the facility for training. Typical activities while in this status include:

(1) Break down ammunition. OICs are reminded not to break down or open any more ammunition than what is immediately required for training. You may NOT load ammunition into weapons or weapons systems, prepare demolitions charges or other ammunition requiring like preparation while in an occupied for setup status.

(2) Setup life support area.

(3) After the OIC requests permission from the ROFD to proceed downrange, the unit may enter the downrange area to conduct rehearsals, leader recons, emplace targets IAW the published DZ, etc. Due to common impact areas and required RT checks of protective berms and bunkers, OICs of training can expect mandatory cease-fires during the training day. If downrange entry is not required by either the unit(s) or Range Operations during these times, the unit(s) may be allowed to continue training. The established mandatory shutdown times are:

(a) Summer (1 May-31 October), 0700-0900, 1900-2100.

(b) Winter (1 November-30 April), 0700-0900, 1700-1900.

b. Occupied in a Prep-to-Clear (or just Prep-to-Clear). This status is used to conduct all range clearing operations.

c. Occupied for Maintenance. This status is used to conduct facility maintenance by Range

Operations, DPW or Unit personnel during non-training periods.

4-10. Prepare for a Training or Live Fire Status.

a. ONLY the OIC of Training can request a change TO or FROM a training status. Prior to being granted any kind of training status, the OIC must present a safety briefing to all personnel on the training site and submit and opening report to the ROFD.

b. Safety Briefing. The OIC must ensure ALL personnel on the training site (regardless of when they arrive and not just exercise participants) must receive a safety briefing. OICs should plan for late arrivals to be similarly briefed. The safety briefing will be conducted daily and if applicable, will also precede any night training phase. Safety briefings may include whatever topics the OIC deems appropriate to ensure the safe execution of training, but the following topics are mandatory and will be included:

- (1) The threat from UXO.
- (2) Restrictions or requirements of the DZ or range deviation packet (at a minimum, the location of range limit markers and/or left and right limits of firing).
- (3) Control measures emplaced to mitigate risk as listed in the unit's DRAW.
- (4) Location of medical personnel and LZ for air evacuation.
- (5) Vehicle speed limits. Unless otherwise posted or road conditions warrant a lower speed, speed limits on the RTA complex roads are:
 - (a) Wheeled Vehicles - 35mph (paved roads) and 25mph (gravel roads).
 - (b) Tracked Vehicles - 25mph (paved roads) and 15mph (gravel roads).

NOTE: When firing under an approved deviation of safety criteria, all provisions of the deviation documentation will be met. All personnel engaged in the firing activity will be briefed on the restrictions imposed by the deviation documentation.

(6) Low Water Crossing (LWC) procedures if one is located in the area of operations of the training to be conducted (see Annex E for locations and associated risks).

- (7) Proper handling of weapons and ammunition.
- (8) Additional topics may include:
 - (a) Severe weather plan.
 - (b) Wildlife and insect threats.
 - (c) Heat and/or cold injury prevention (as applicable).
 - (d) Road conditions due to inclement weather as applicable.
 - (e) Proper movement techniques of vehicles and personnel in the firing and administrative areas.

c. Opening report: After completion of the Safety Briefing, the OIC must submit an opening report daily to the ROFD prior to requesting a training status. Contact the ROFD at (502) 624-2125 (or via range dropline) and provide the following information (as applicable):

- (1) The name of the facility.
- (2) OIC range certification card number.
- (3) RSO range certification card number. RSOs are required on all facilities where any type of munitions are expended (not required – but recommended for training areas, land nav, etc.). If the training event expends no munitions at all (i.e. land navigation, obstacle course, etc.) the OIC can assume the duties and responsibilities of the RSO.
- (4) Type of training to be conducted.
- (5) Verification that all exercise participants are wearing the required PPE for the training to be conducted.
- (6) Total number of personnel on site.
- (7) Road march or Live Fire Overlay/DZ number.
- (8) Residual risk level and grade of individual accepting risk (Low must be company commander or responsible O-3 or above; Medium must be battalion commander or responsible O-5 or above; High must be brigade commander or responsible O-6 or above; Extremely High

must be first General Officer in chain of command.

(9) Number and type of vehicles on site by nomenclature.

(10) Type of medical support on site (CLS, Medic, other).

(11) Type of medical evacuation vehicle on site.

(12) Method of marking an aerial MEDEVAC LZ (day and night).

(13) Verification a safety brief has been issued to ALL personnel on the training site and the impact area is cleared.

(14) The OIC will confirm the fire threat condition with the ROFD and consult the fire threat restriction matrix in Annex D to determine if any modifications to training are required prior to the commencement of any live fire activities or deployment of pyrotechnics.

4-11. Road Guards and Barriers

a. Units may require exclusive use of a portion of a road normally accessible to all training units (i.e. non-lethal weapons training, blackout drive training, or an approved Surface/Weapon Danger Zone may conflict with these roads, etc.). With proper coordination units may be granted exclusive use of these roads for periods of time by Range Operations. However, all normal vehicular and foot traffic approaches into these areas must be guarded. Units may be required to post Road Guards, barriers, and/or other warning signs.

b. When appropriate, barricades will be prominently marked so they are visible to traffic.

c. Roads guards will have communication directly to the OIC of training. Further, the OIC of training will brief the road guards on their duties. This briefing will include:

(1) Procedures to allow emergency traffic access.

(2) Procedures to allow priority traffic (including Range Technician) access.

(3) Cease fire/check fire procedures if barrier or position is bypassed (i.e. if in support of a live fire event and a vehicle bypasses their position, the road guard will contact the OIC of training immediately and declare a cease fire.

4-12. Place a Facility into a Training Status.

a. Once the requirements of paragraph 4-9 are satisfied, the OIC will contact the ROFD (normally via landline) to request the facility to be placed into a training status. The ROFD will record the data submitted in RFMSS and inform the OIC to contact them via radio (FM or LMR) to verify communications prior to placing them into a training status.

b. Training statuses: Depending on the training to be conducted, the OIC of training will request one of the following training statuses:

(1) Non-Fire Training Status WITHOUT Pyro: This status is requested for all training events where no lasers, ammunition or pyrotechnics of any type are expended (i.e. land navigation, obstacle course, etc. Boresighting those weapon systems that require it without laser may be performed while the facility is in this status).

(2) Non-Fire Training Status WITH Pyro: This status is requested for all training events where no lasers or live ammunition is expended. Pyrotechnics and/or blanks WILL be utilized.

(3) Live-Fire Training Status: This status is requested for all training events involving the expenditure of any kind of ammunition (this includes Non-Lethal Training Ammunition, Short Range Training Ammunition, Paintball, lasers, etc.).

c. Range Flag/Light.

(1) When conducting training during daylight hours on a facility equipped with a flag pole used to designate the training status of the facility, the OIC will ensure the red range flag (issued during sign-on by the RT) is affixed to the pole and raised to its highest point whenever the facility has been granted a live fire/training status by Range Operations and lowered whenever in a cease fire/cease training status.

(2) The use of a red light, red flashlight, or red chemlights will be used in the manner described above in lieu of a red flag during periods of limited visibility.

4-13. Required Reports. During the course of training, the OIC is required to submit various reports or required information pertaining to the training event. These reports are listed below:

- a. First round downrange: OIC submits via landline, FM or LMR to the ROFD when it occurs.
- b. Last round downrange: OIC submits via FM or LMR to the ROFD when it occurs.
- c. Any personnel changes to the OIC or RSO. The outgoing OIC submits this report via landline to the ROFD prior to departing the facility.
- d. Accidents/Incidents/Injuries. OIC reports immediately to Range Operations by the most expeditious means available (radio or telephone). All training will cease (depending on severity of incident) pending an investigation or until cleared by the RMA or designated representative.
- e. Misfires: OIC reports any munition which fails to function as designed (hang fires, misfires, duds, abnormal functioning and premature functioning of explosive items under normal handling, maintenance, storage, transportation, and tactical deployment) after proper misfire procedures have been completed to Range Operations immediately. The ROFD will notify the QASAS who will determine the appropriate course of action (i.e. continue to train, locally suspend the lot, or other measures).
- f. Weapon/Ammunition malfunction:
 - (1) Malfunctions where the weapon is undamaged, and CAN be cleared of ammunition will be handled internally by the unit (apply immediate action) are not reportable.
 - (2) OICs will IMMEDIATELY report to Range Operations by ANY means available (radio or telephone) ANY weapon malfunction resulting in damage to a weapon (or weapon that cannot be cleared of ammunition) and/or injury to personnel. After rendering whatever first aid is necessary, incidents of this nature require the OIC to secure or "freeze" the site. Do not attempt to further clear or repair the weapon; do not reorient the barrel; do not remove any ammunition, brass or links, etc. Remove all unit personnel from the vicinity of the weapon and stand by for investigative personnel to arrive.
 - (3) The ROFD will contact the Tank-automotive Armaments Command (TACOM) Logistics Assistance Representative (if available), the Installation Safety Office and the QASAS. These organizations may conduct an investigation to determine root cause of the malfunction. The weapon(s) involved will not be released until the investigation is complete.
 - (4) After reporting is complete units may contact the ROFD to request the resumption of training elsewhere on the facility as long as the incident does not hamper the investigation or hazard personnel.
- g. Pyrotechnic malfunction/discovery of UXO.
 - (1) In the event of a UXO discovery, refer to paragraph 1-20.
 - (2) Treat malfunctioned pyrotechnics in the same manner as a UXO (3 R's – Recognize, Retreat, and Report).
 - (3) If an injury occurs as a result of the use of a pyrotechnic device, the OIC will immediately notify ROFD and preserve/secure the accident site to the extent possible after rendering first aid and freeze the site until released by a representative of the Installation Safety Office, QASAS or Range Operations.
- h. End of Training Day Report: Prior to 2300 each training day (or at the conclusion of the training day if it occurs before 2300), the OIC shall submit a daily training data report to the ROFD. The data required for this report is listed below:
 - (1) All ammunition expended on the facility for that 24hr period. This report shall be by DODIC and quantity.
 - (2) Number of personnel on site.
 - (3) Number of vehicles or aircraft on site by nomenclature.
 - (4) Number of "sorties" flown (if applicable - aviation or UAS).
- i. Cease Fire: There may be periods of time a cease fire is issued or requested. The OIC

must develop and employ sufficient internal controls and communications to immediately obey cease-fire, cease (check)-fire freeze, or cease training orders. Below are the cease training statuses recognized by the ROFD:

(1) Temporary Cease Fire – used if there is a short-term interruption to live fire training. OIC will state the reason for the status change and approximate duration of the cease fire when contacting Range Operations (i.e. vehicle breakdown, target maintenance, etc.).

(2) Cease Fire – typically used when firing is complete for the training day. May also be used by anyone, actively involved in the training event or not, who observes or becomes aware of an unsafe act or condition to immediately halt all live ammunition firing (either locally or installation-wide) in order to make immediate corrections or to wait until the unsafe condition passes (i.e. aircraft incursion into restricted airspace, etc.).

(3) Cease Fire – Freeze (or Check Fire) – used by OIC, RSO or Range Operations to immediately halt all live ammunition firing locally or installation-wide and to “Freeze” everyone and all weapon systems in place after an accident or incident occurs (i.e. round out of impact, etc.).

(4) A facility/training event may NOT return to any training status from any cease fire status until authorized to do so by Range Operations.

j. Guard:

(1) Manned Guard Status – used when main body departs range (usually overnight), but sensitive items (vehicles, weapons, ammo, etc.) will remain on site under the supervision of a guard force. The Sergeant of the Guard must maintain communications with Range Operations via FM or LMR.

(2) Unmanned Guard Status – used when all personnel and sensitive items depart or are removed from the facility (usually overnight) but intend to return to a training or prep-to-clear status the following day.

4-14. Closing the Range

a. Once training is complete, the OIC will place the facility into a “Prep-to-Clear” status. The OIC will submit an end of training day report to Range Operations (see paragraph 4-13h).

b. Once the closing report has been sent, the OIC may begin the process of range clearance (policing the range, removing all equipment, personnel, ammunition, dunnage, and trash). Once complete, the OIC will contact Range Operations to request an RT for final clearance inspection (See Annex H - courtesy inspections will not be provided).

c. Once the range has been accepted by the RT, the RT will contact ROFD and report the unit has been cleared from the facility.

Chapter 5 Maneuver Training Areas

5-1. General

Range Operations oversees the use of 15 major training areas. These areas vary in trafficability and provide challenging terrain for mounted and dismounted operations.

5-2. Safety

a. All activities will be conducted IAW AR 385-63, DA PAM 385-63, and this regulation.

b. OICs are responsible for the safe use of training areas to include vehicle movements and pyrotechnics.

c. The use of non-eye safe lasers outside of an impact area is prohibited. Authorized use of lasers will be IAW DA PAM 385-63.

d. Vehicle maneuver over gas pipelines is prohibited except at designated crossing points. Tactical vehicle maneuver is prohibited within 25m of natural gas wells.

- e. No tactical maneuver within 100m of the installation boundary.
- f. Tactical vehicle maneuver is prohibited within 25m of power substations. Power line easements should be avoided to the greatest extent possible.
- g. Established firebreaks are off-limits to vehicle traffic except in designated areas.
- h. The only approved tactical vehicle crossing of Highway 60 is the underpass located vicinity of CP 37 and the overpass vicinity CP 38. Tactical vehicles should avoid using Highway 60 unless pre-coordinated with local authorities.
- i. No training will be conducted with 25m of an established county and/or state roads traversing the training complex. OICs will ensure all personnel are briefed on this prohibition as applicable.
- j. All incident and accidents – no matter how minor – are reportable to Range Operations immediately IAW paragraph Annex I.
- k. Aerial pyro is not authorized in TAs 8, 9, 10, 12, or 14.

5-3. Training Areas

- a. The OIC will be in the grade of E-6 or above (or equivalent), possess a valid range certification card and meet the requirements of chapter 3.
- b. The OIC will:
 - (1) Follow all occupation, opening, closing and other applicable procedures outlined in chapter 4 of this regulation.
 - (2) Plan and conduct training IAW current Fort Knox environmental policies and the restrictions listed in paragraph 1-22 of this regulation.
 - (3) Coordinate the use of concertina wire by memorandum to Range Operations.
 - (4) Coordinate through Range Operations and EMD for any digging (e.g. field latrines, sumps, foxholes, fighting positions, etc.) and the removal of grey water (field kitchens, shower points, etc.) from the training complex.
- c. Tracked vehicles are prohibited in administrative bivouac sites.
- d. See chapter 9 for the use of pyrotechnics and CS in training areas.
- e. See chapter 8 for the use of non-lethal weapons in training areas (e.g. CCMCK).

5-4. Field Airstrips

- a. Field airstrips are off limits to unauthorized vehicular traffic and dismounted training without permission from Range Operations.
- b. Units planning use of a field airstrip requiring personnel to occupy the facility (i.e. boots on the ground), must schedule the facility in RFMSS. Aircraft conducting flight operations where no personnel occupy the facility, may schedule the use of an airstrip through submission of a FK Form 8175 Air Mission Request (AMR - see FK Reg 95-1 and chapter 14).
- c. The use of pyrotechnics or CS within 500 meters of field airstrips is prohibited.
- d. The name and location of these field strips (reference Fort Knox Military Installation Map 1:50,000) are as follows:
 - (1) Cedar Creek Airstrip FG 036864
 - (2) Chappel Ridge Airstrip FH 036042
 - (3) Otter Creek Airstrip EG 866936
 - (4) West Point Airstrip EH 906045

5-5. Range Roads

- a. The road network servicing the training complex is a key support element of the training mission. Directorate of Emergency Services (DES) and Range Branch will patrol these roads to identify and report unsafe conditions and activities and to provide assistance to training complex users as needed.
 - (1) Training area complex roads will not be closed or blocked without Range Branch

approval.

(2) Units receiving permission to close or block a road for training must utilize road guards IAW paragraph 5-6.

(3) Vehicle breakdowns that block primary service roads and all vehicle accidents occurring within the training complex will be reported immediately to Range Operations. The unit will post road guards and/or warning triangles to warn others of the incident. Range Operations will notify DES and other agencies as required.

b. Blackout Driving:

(1) Range Branch approval is required to utilize any training complex road for blackout driver training.

(2) Units must submit a route overlay a minimum of 14 days in advance of the intended training. This overlay will identify the route, time schedules, road guard positions, and the type(s) of vehicles involved in the training event.

Chapter 6

Road Movement

6-1. General

This chapter sets forth policies and procedures for the conduct of all ground movements (vehicle road marches and foot marches) within the Fort Knox Training Complex.

6-2. Safety

a. Vehicle operators will adhere to all posted traffic control devices (i.e. bridge weight limits, speed limits, off limits areas, low water crossings, etc.). See Annex E for additional on low water crossings.

b. By order of the Fort Knox Senior Commander, military traffic is not permitted to make a left hand turn off of Highway 60 into the training complex or onto Highway 60 from the training complex. The only authorized crossing points of US Hwy 60 are the underpass at CP37 or the overpass at CP38. All other crossings are prohibited.

c. Vehicle Speed Limits. Unless otherwise posted all vehicle speed limits are:

(1) Graveled roads: Wheeled Vehicles – 25mph; Tracked Vehicles 15mph

(2) Paved roads: Wheeled Vehicles – 35mph; Tracked Vehicles 25mph

(3) Speeds listed above represent maximum allowable speeds. They may still be excessive relative to road conditions. Drivers/vehicle commanders must adjust speed to compensate for road conditions and other hazards

d. When a vehicle or convoy must pass through a dismounted formation (i.e. foot march), the vehicle operator will slow to a speed of 10mph until completely clear of the formation.

e. Units requiring to tow a disabled vehicle for any reason will do so IAW that vehicle's operator and/or maintenance technical manuals – to include use of a braking vehicle if required.

f. Units who deposit mud or other debris on roadways which creates a hazard to other vehicles are responsible to clean the roadways with organic assets, contract, or other means prior to receiving a final clearance.

g. Buses are not permitted on the portion of Main Range Road between Canby Hill Range and Porter River Road. Nor are they permitted on Main Range Road between Steeles Range Road and 7th Armored Division Road. Both areas have very steep hills and present a specific hazard to buses.

6-3. OIC Requirements

In addition to the OIC requirements in chapter 3, the OIC of a road movement will:

a. Be in the grade of SSG (E-6) or above.

b. Ensure each vehicle in a convoy has a vehicle commander.

- c. Each tracked vehicle commander must be able to communicate with the driver via intercom.
- d. Include the following topics in the safety/mission briefing to all personnel prior to departure:
 - (1) Hazardous conditions
 - (2) Convoy speeds/catch-up speed
 - (3) Route
 - (4) Actions to be taken at intersections, bridges, traffic lights, steep slopes that will be encountered during the march (using low gear), rules for passing through a foot march formation, and for disabled vehicles.

6-4. Movement Specific Training Events

Units desiring to conduct an ambush/C-IED training event during a road movement (mounted or dismounted) must schedule the adjacent training area for the ambush site. Units must submit an overlay with all standard information along with the ambush site identified along the route.

6-5. Movement Overlay Requirements

- a. Any road movement meeting the definitions of a foot march or convoy in paragraphs 6-6 and 6-7 require the submission of an overlay.
- b. Units will provide two copies of the proposed route overlay to Range Operations for review/approval 10 days in advance of execution. Range Operations will review the overlay for potential conflicts and hazards, stamp both copies, and return one copy to the unit for the OIC. Overlays will be prepared on overlay/tracing paper and will identify the following:
 - (1) The route which will include the Start Point (SP), the Release Point (RP), all Check Points (CP), and all Traffic Control Points (TCP).
 - (2) Scheduled halts and ambush points (if used). Units requiring use of any portion of a training area, a range, or other fixed facility during a foot march or convoy operation must have that facility scheduled for use.
 - (3) A legend identifying the use of any pyrotechnics, blanks, or CS gas.
- c. OICs must Notify Range Operations when crossing the Start SP and the RP.

6-6. Foot Marches

- a. Management of foot marches must provide for the safety of the training personnel and passing traffic. The following procedures assist the OIC in providing a safe environment for training while enabling traffic to continue on the road.
- b. An administrative movement consists of personnel marching in formation. During an administrative movement, the formation will not exceed three abreast on range roads.
- c. A tactical foot march, to include timed or forced-march events, consists of personnel marching along the sides of the road, one column on each side. All participants will stay on the shoulders of the road, leadership will position themselves in order to allow traffic to pass through the formation safely. A foot march will not block or impede vehicular traffic.
- d. Position advance and rear road guards a minimum of 50 meters from the main body. Road guards will wear a safety vest, fully displayed, and use a light source during periods of limited visibility.
- e. During periods of limited visibility OICs will conduct a risk assessment to determine the amount of reflective gear and/or lighting required to conduct a safe foot movement.
- f. Units must position vehicles supporting an administrative or tactical foot march behind the march, maintaining a position near the shoulder of the road to allow traffic to pass through the formation.

6-7. Road Marches (Vehicle)

a. General.

(1) A convoy consists of two or more tracked vehicles, one or more Heavy or Light Equipment Transports (HET/LET) loaded with a large, oversized equipment/vehicle, four or more wheeled vehicles moving together, or a combination of three or more vehicles in joint movement within a 60-minute period.

(2) Convoys require a lead and trail wheeled vehicle (POVs may NOT be utilized as a lead or trail vehicle for military convoys) with appropriate signage, licensed drivers and competent vehicle commanders.

(3) The Convoy OIC will maintain positive communications with the ROFD and ensure communications are maintained between the lead and trail vehicles.

(4) Vehicle convoys on any improved roadway will maintain weapon orientation not to exceed the width of the vehicle.

(5) Vehicle road marches involving "buttoned-up" armored vehicles, blackout or night vision driving, or other activities which create a hazard or may impede other traffic on primary roadways in the training complex will be coordinated with Range Operations a minimum of 10 days prior to the event.

(6) All convoys will slow to 10mph when passing dismounted troops.

b. Tracked Vehicle Convoy: Units will adhere to the following guidelines when planning routes for tracked vehicle movement:

(1) All tracked vehicles will observe a speed limit of 15mph with a catch-up speed of 20mph on all Fort Knox roads unless prior coordination is obtained from Range Operations. Training objectives or test projects requiring tracked vehicles to exceed the 15mph limit will be coordinated with Range Operations NLT 10 working days prior to the event.

(2) Besides the driver, each tracked vehicle will have a Track Commander (TC) who will be positioned in the commander's hatch. The TC and driver must be licensed drivers who are experienced and competent in track vehicle operations. If a TC is not available, a ground guide will be required to move the vehicle.

(3) Units will not start or run tracked vehicles without a driver seated in the driver's station.

(4) The intercom between the TC and driver of a tracked vehicle must be operational at all times while the vehicle is moving. If a vehicle's intercom is inoperable units must use ground guides to move the vehicle.

(5) When crossing bridges, tracked vehicles will be centered on the roadway, maintain a uniform speed, (not to exceed 8 mph with no stopping or turning), and cross one vehicle at a time. If towing a tracked vehicle with a like vehicle across a bridge, the speed will be reduced to 5mph. Additionally, the combined weight of the two vehicles cannot exceed the posted weight limit of the bridge or route. If it does, an alternate route must be taken or alternate means of moving the vehicle (i.e. HET) must be used.

(6) All small arms ranges are off limits to tracked vehicles without prior approval from Range Operations.

(7) Tracked vehicles will not use training facilities (ranges, etc.) for rest or maintenance halts without prior approval from Range Operations.

(8) Tracked and towed vehicles are prohibited on that portion of Main Range Rd. between Steeles Range Rd and 7th Armored Division Rd.

6-8. Hill Slopes and Bridge Weight Classification

a. The following is the average slope at the steepest section of the indicated hill:

Slope/Hill Name/Location	% of Slope
Porter River Rd west of Main Range Rd (Misery)	14.0%
Main Range Rd north of Porter River Rd (Agony)	17.0%
Seventh Armored Div Rd at Sanders Spring Reservoir	11.0%
Seventh Armored Div Rd (Steeles Range Rd - Main Range Rd)	11.2%
Cedar Creek Range Rd (Old Highway 251 - Kelly Road)	17.4%
Kelly Road (Access Road to Yano)	15.0%
Cedar Creek Range Entrance Rd @ Old Highway 251	10.3%
Main Range Road south of Mill Creek Bridge (Ski Slope)	20.4%
Main Range Road north of Mill Creek Bridge (Ski Slope)	21.5%
Porter River Rd @ Kennedy Range (south side)	16.0%
Porter River Rd @ Kennedy Range (north side)	13.4%
745th Tank BN Way Hill	18.4%
191st Tank BN Rd @ Salt River Bridge	11.0%

b. The following bridges are properly marked at each approach:

Bridge #	Bridge Location	Coordinates	Rating (T)	
			W	T
BDG00	Porter River Rd over Mill Crk	16S EG 96674 97053	115	100
BDG01	191st Tank BN Rd over Salt River	16S FG 94655 05508	100	100
BDG02	Main Range Rd over Mill Crk	16S EG 96329 96053	120	120
BDG03	Poorman Range Rd over Mill Crk	16S EG 95463 93423	150	150
BDG04	Main Range Rd over Mill Crk	16S EG 95494 90539	76	54
BDG05	Brumfield Rng Rd over Mill Crk	16S EG 96753 90322	150	150
BDG06	Brumfield Rng Rd over Trib. Mill Crk	16S EG 96630 90209	120	120
BDG07	7th Armor Div over Mill Crk	16S EG 97332 87287	120	120
BDG08	745th Tank BN Rd over Cedar Crk	16S FG 03078 86046	150	150
BDG09	745 Tank BN over Mill Crk	16S EG 97954 84753	120	120
BDG10	Steeles Range Rd over Mill Crk	16S EG 94605 91146	150	150
BDG11	Main Range Road (TA 7)	16S EG 96643 92534	N/A	N/A
BDG13	Pinwheel Road (TA 8 & 9)	16S EG 88000 92546	120	120
BDG14	Twin Bridges Rd over Otter Creek	16S EG 85281 96875	40**	30
BDG17	RR Trestle Rd over P&L RR	16S EH 88394 00902	N/A	N/A
BDG18	Bridge over Abrahams Run	16S EH 91140 02838	N/A	N/A
BDG22	Woolridge Ferry over Rolling Fork	16S FG 03101 91935	N/A	N/A
BDG23	Yano Range over Rolling Fork	16S FG 07637 89060	40	40
BDG26	Porter River Rd S of Easy Gap Rd	16S EG 98231 99145	120	120
BDG27	Porter River Rd N of Easy Gap Rd	16S EG 98247 99305	120	120
BDG28	Porter River Rd N of Ashley	16S EG 98137 98727	N/A	N/A
BDG30	745th South of Upper Douglas Lake	16S EG 99568 85344	120	120
BDG36	7th AR Div Rd & Steeles Range Rd	16S EG 94593 91101	120	120
BDG42	Porter River Rd (TA 7)	16S EG 95691 95891	120	120
BDG43	7th Armor Div Rd west of Hackett	16S EG 99850 87488	120	120
BDG44	Old Wilson @ Tioga Falls	16S EH 91339 02336	N/A	N/A
BDG45	Old Wilson @ Tioga Falls	16S EH 91646 01809	N/A	N/A
BDG46	Old Wilson @ Tioga Falls	16S EH 91712 01328	N/A	N/A
BDG50	LWC Railway Trestle Rd (TA 14)	16S EH 90081 02763	N/A	N/A
BDG51	LWC* New Cut Rd (TA 9)	16S EG 87826 91992	N/A	N/A
BDG53	LWC Otter Creek Airstrip Road	16S EG 86896 93002	N/A	N/A
BDG54	LWC Twin Bridges Road (TA 10)	16S EG 85303 96856	N/A	N/A
BDG58	LWC off 745th to Cedar Creek ROC	16S FG 02934 86923	N/A	N/A
BDG59	LWC on Cedar Creek Baseline	16S FG 02664 87921	N/A	N/A
*LWC = Low Water Crossing (See Annex E for full list of LWCs)			**HET = 116	

6-9. Traffic Control Requirements

a. Lead and trail vehicles will employ advance and rear convoy warning signs. HET and tracked vehicle convoys will employ the use of Rotating Amber Warning Lights (RAWLs) on their lead and trail vehicles as well.

b. To obtain necessary permits and clearances for convoy travel on public roadways (i.e.,

Highway 60 and US 31 W), submit DD Form 1265 (Request for Convoy Clearance) to Fort Knox, Unit Moves Section, (502) 624-6115/6427. Submission requirements vary based on component and mission. Contact the POC at the number given for specific requirements.

c. Military road guards are not authorized to stop traffic on public roadways off the installation. Civilian police are the only agencies authorized to control traffic on public roads. If local law enforcement is not available, vehicles must obey all posted traffic control devices. To coordinate local traffic control, contact the DES Law Enforcement Division (Operations Cell) during normal business hours at 502-624-4337 not less than 10 working days prior to the event.

6-10. Towing Disabled Vehicles

a. Operators will follow all cautions, warnings, and procedures published in associated vehicle technical manuals.

b. Commanders should consider the entire route of the vehicle movement when determining whether a brake vehicle is required.

c. Unless required by the technical manual, passengers are not authorized in the towed vehicle.

d. Operators will not exceed the recommended speeds as written in the technical manual. Environmental and road conditions may warrant slower speeds.

e. Tracked and towed vehicles are prohibited on that portion of Main Range Rd. between Steeles Range Rd and 7th Armored Division Rd.

Chapter 7 Urban Training

7-1. General

The Urban facilities on Fort Knox support every phase of urban warfare training. Absolutely no photographic or video recording equipment of any kind is authorized for use without prior coordination with Range Operations.

7-2. Safety

a. Commanders will ensure personnel are certified to conduct duties as OIC/RSO IAW DA PAM 385-63 and chapter 3 of this regulation.

b. A safety brief will be issued by the OIC to all personnel prior to any activity starting and will include, but not limited to, a scenario outline, weapons being fired, use of pyrotechnics, and vehicle movement. Personnel will also be briefed on the location of the medical team and vehicle.

c. If a hazardous condition presents an immediate danger to life or property, training will cease until the hazard has been removed or isolated. Anyone observing an unsafe act will immediately notify the OIC/RSO and Range Operations.

d. All non-lethal projectile-based training (paintball, simunition, etc.) conducted IAW DA PAM 385-63 and chapter 8 of this regulation.

7-3. Training

a. Communications will be maintained IAW paragraph 4-3. Additionally:

(1) Units are required to have and maintain communications with the onsite Range Staff at all times (as applicable). Communications will be maintained between the OIC, RSO, Observer Controllers (OCs), and all civilian participants involved in situational scenarios as role players or civilians on the battlefield (COB's) if employed.

(2) Positive communication is required between the OIC, ground controller and any aircraft utilizing the urban sites. Air operations will be clearly identified and closely monitored for approaching and departing aircraft.

- b. Prior to conducting any projectile based operation, the OIC will ensure the following:
 - (1) Weapons are inspected for proper installation of the weapon conversion system and that issued munitions are designed to operate with the installed kits.
 - (2) Minimum engagement distances are included in the safety briefing.
 - (3) Appropriate PPE is issued to and worn correctly by all participants.
 - (4) All prescribed roadblocks, barriers, signs and guards are posted as necessary.
- c. Urban Breaching Operations.
 - (1) Most urban sites at Fort Knox have designated locations that support mechanical, ballistic, and explosive breaching. These locations can be constructed with various media and are designed for quick reset. Breaching at locations other than those designated specifically for the activity is not authorized. Units are required to coordinate all breaching with the site supervisor prior to the conduct of training. Units may be required to provide labor and materials to reset for breaching if the staff cannot support the activity.
 - (2) Commanders must specify on the bottom of the FK Form 1769 (OIC/RSO Certification Card) that individuals are certified to perform duties as OIC/RSO of events involving explosive or ballistic breaching operations.
 - (3) OICs must ensure that the hazards associated with urban breaching operations are adequately addressed in the event DRAW and that it is signed by the appropriate level of command.
 - (4) Units will adhere to calculated minimum safe distances when conducting explosive breaching activities. At no time will any person be allowed in a room that is designated for ballistic or explosive breach. Explosive breaching charges will be limited to the minimum amount required to affect the breach; with the intent to minimize damage to the support structure and facilitate rapid reset.
 - (5) Units will transport all damaged/destroyed doors/debris to locations designated by the range staff. Doors that have been damaged or removed will be replaced by the unit.
- d. Tower Rappelling will be conducted IAW the procedures outlined in TC 21-24 Rappelling.
- e. The following procedures apply to rappelling and grappling hook operations within all urban areas:
 - (1) Only authorized anchor points will be used for rappel operations and must be inspected prior to their use.
 - (2) Fast Rope Insertion/Extraction System (FRIES). Operations involving buildings will be conducted on flat topped roofs only. Exceptions must be approved by the staff.
- f. Chemlights, if used, will be provided by the using unit. Facility lighting is also available in certain areas.
- g. Props (furniture, office equipment, vehicles, etc.) are positioned throughout each urban facility to enhance realism.
 - (1) Furniture, office equipment, etc.
 - (a) Movement of props is permitted but must be returned to their original location prior to clearance.
 - (b) All damaged or broken items will be brought to the attention of the range staff and placed in front of their respective buildings.
 - (2) Prop vehicles.
 - (a) Those vehicles not involved with training will remain clear of the exercise areas.
 - (b) Stationary prop vehicles are provided in certain environments. Movement of these vehicles must be cleared by the site manager prior to their movement.
 - (c) Any blatant attempts to flatten tires, break windows, or deliberately dismantle prop vehicles will not be tolerated.
- h. Some urban facilities are equipped with audio systems that play background sounds and music. Operation of the audio system will be controlled by the range staff as coordinated by the

OIC.

i. The use of tracked vehicles in any urban area must be coordinated prior to use with Range Operations.

j. Helicopter light touch landings are authorized on pre-designated roof LZs. Exceptions must be approved by the RMA, site manager, or his delegate.

7-4. Ammunition

a. Ammunition storage and security measures will be conducted IAW Annex A.

b. Pyrotechnics use will be accomplished IAW Chapter 9 this regulation.

c. Smoke grenades will not be thrown into buildings or the underground trainer for any reason.

d. Pyrotechnics, demolition charges and explosives may fail to function as designed and will be treated as UXO. Personnel will follow the procedures IAW paragraph 1-20 this regulation if any UXO is encountered.

Chapter 8

Non-lethal Weapons

8-1. General

Training involving Non-Lethal Weapons (NLW), Special Effects Small Arms Marking System (SESAMS), and Close Combat Mission Capability Kit (CCMCK) produces a projectile based training environment which increases realism in training. All training involving the use of NLW, SESAMS, and CCMCK will be conducted IAW DA PAM 385- 63.

8-2. Safety

a. All NLW devices will be used IAW appropriate technical publications and manufacturer's guidelines.

b. The OIC will ensure all personnel are briefed on appropriate minimum safe distances (MSDs) when conducting force on force training.

c. A unit using NLW (for force-on-force training or otherwise) may not co-use a training area with another unit not using the same devices to support training.

d. When employing NLW, units must maintain the standoff distances listed below:

(1) 176 meters from the boundary of their assigned training area with another training area.

(2) 176 meters from range service roads unless otherwise coordinated. This restriction includes the road servicing the "bridges to the past" area located on the boundary of TA 14 and TA 15.

(3) 300 meters from MASA and the installation boundary.

e. Personal Protective Equipment (PPE)

(1) Units conducting training with NLW are responsible to provide appropriate PPE to Soldiers IAW applicable TMs. OICs and RSOs will ensure all participants involved in NLW training are properly wearing required PPE prior to requesting a training status.

(2) Personnel not directly involved with the fire and maneuver portion of an NLW training event (i.e. administrative personnel) will wear ballistic eye protection at a minimum.

f. OICs of training must display appropriate signage along most likely entrances to the training location to warn visitors of the hazards associated with the NLW and PPE requirements.

8-3. Training

a. OICs will ensure that all personnel in the exercise area receive a mission safety briefing.

b. Personnel using NLW will be instructed not to intentionally target any area of the body above the shoulders or below the waist. HEAD SHOTS ARE NOT AUTHORIZED.

- c. Paintball markers will be adjusted for a maximum velocity not to exceed 220 FPS (+/- 10FPS). Markers producing velocities above this standard will not be used.
- d. SESAMS will not be used if temperatures are below 38 degrees Fahrenheit.
- e. CCMCK will not be used if temperatures are below 32 degrees Fahrenheit.
- f. Paintball will not be used if temperatures are below 36 degrees Fahrenheit.
- g. OICs will ensure signs are posted designating the use of NLW as directed by the site manager. Signs can be drawn from Range Maintenance. Signs will read: "WARNING!! Paintball in use. Eye protection is mandatory."

8-4. Danger Zones (DZ) See DA PAM 385-63.

8-5. Scenario Development/Non-Standard Exercises

All scenario development and nonstandard training exercises must be coordinated IAW paragraph 4-7 of this regulation.

Chapter 9

Pyrotechnics, Smoke, Riot Control Agents

9-1. General

Pyrotechnics, Smoke, and Riot Control Agents (RCA), if employed properly, can add realism to training events. If not employed properly, they can impact other training and non-participating personnel. The use of all pyrotechnics, smoke, and CS will be IAW applicable TMs, Ammunition Information Notices (AIN), and Safety of Use Memorandums (SOU).

9-2. Safety

a. OIC of training shall ensure personnel who handle and employ pyrotechnics, smoke, and/or RCAs have been properly trained IAW with appropriate publications and are wearing the required PPE prior to the execution of training. Personnel will not be allowed to handle or fire pyrotechnics/simulators without supervision until they have received proper instruction on handling and employment of the device.

b. Pyrotechnics, smoke, and RCA devices that fail to function will not be touched. These items will be marked and reported to Range Operations. These items will be treated as UXO (Recognize, Retreat, and Report).

c. The unit DRAW must identify potential hazards associated with pyrotechnics, smoke, and RCAs and how to implement mitigations to reduce risk.

WARNING - Tampering with, mishandling, destroying, or using pyrotechnic devices in ways other than prescribed may cause serious personnel injury and or death!

d. When the fire threat conditions elevate, units will employ pyrotechnics, smoke, and/or RCAs IAW with the Fire Threat Condition matrix located in Annex D.

e. Without prior coordination with Range Operations, pyrotechnics, smoke, and RCAs may only be employed IAW the table below.

	Pyro	Smoke		RCA
		Grenade	SMK Pot	
Field Airstrips	500m 1	500m 1	1000m 1	1000m 1
Training Complex Roads	100m 1	100m 1	500m	500m
Civilian Public Travel Routes	500m	500m	1000m	1000m
Installation Boundary	1000m 1	1000m	1000m	1000m

Note(s):

1 -Distance can be reduced with coordination with Range Operations

9-3. Pyrotechnics

- a. The OIC of training will ensure the appropriate publication for each device is on site and all employment requirements have been met/covered in the unit safety briefing.
- b. The use of aerial pyrotechnics in Training Areas 8, 9, 10, 11, 12, 13, 14, and 15 is prohibited.
- c. Grass fires can spread rapidly. If a fire starts while using pyrotechnics, OICs will cease training and report the fire to Range Operations. OICs will then quickly determine whether their unit is capable of safely extinguishing the fire or withdraw to a safe location in preparation to assist Fort Knox firefighting efforts.
- d. Accountability and use of pyrotechnics will be controlled by the OIC. They will be used only as intended. All vehicles and personnel will be checked for pyrotechnics before departing the training complex.
- e. Unfired pyrotechnics will be turned in through normal ammunition turn-in procedures. All residue will be policed and turned into MASA.
- f. Unit use of commercial fireworks is prohibited in the training complex.
- g. The holding or "cooking-off" of a grenade or artillery simulator is prohibited.
- h. All pyrotechnics will be kept away from fires, batteries, generators or any source of static electricity.
- i. Pyrotechnics will not be stored on or in a vehicle where it would be exposed to extreme heat or vibration.
- j. Blank cartridges will not be fired without a blank firing adapter properly installed on the weapon; nor will weapons loaded with blank ammunition be aimed toward personnel within 5 meters of the weapon muzzle.
- k. Blank cartridges will not be used for other than their intended use.
- l. OICs will report blank cartridge misfire rates in excess of five percent to Range Operations. The QASAS will then decide whether to suspend the lot or allow its continued use.

9-4. Smoke

- a. All training events incorporating the use of smoke and other obscurants will be conducted IAW DA PAM 385-63.
- b. Residue from expended smoke (or other pyrotechnic) munitions will be collected and returned to the MASA by the using unit prior to requesting clearance of the facility/training area.
- c. A 15-meter safety radius will be maintained from HC smoke grenades.
- d. Smoke or other obscurants will not be employed in enclosed spaces.

9-5. Riot Control Agents (RCAs)

- a. All training events incorporating the use of RCAs will be conducted IAW DA PAM 385-63.
- b. Use of RCAs in training requires supervision by personnel possessing branch code 74 (chemical officers), MOSC 74D (enlisted), or school trained Chemical, Biological, Radiological, and Nuclear (CBRN) officers and noncommissioned officers (NCO) with appropriate skill identifiers.
- c. Units must coordinate the use of RCAs in the training complex with Range Operations a minimum of 30 days prior to execution. This coordination will include the 8 digit MGRS grid of the employment site and the duration of RCA use. Range Operations will submit this information for publication in the Fort Knox Daily Bulletin/ KNOXINFO.
- d. A safety danger zone diagram is required for all RCA use not conducted in the Woods NBC chamber (coordinate for DZ IAW chapter 4).
- e. Use of RCAs in the training complex will adhere to the following guidelines:
 - (1) Field training exercises involving RCAs will be a minimum of 500 meters from training complex roads, the nearest inhabited buildings, any occupied firing points or airstrips, and 1000 meters from installation boundaries or major civilian highways: US 31W, US 60, KY

1638, KY 313, KY 361, and Vine Grove Road through Training Area 8.

(2) RCAs will not be released when wind conditions would cause non-participating personnel located downwind to be affected.

(3) CS agents will not be released within 50 meters of unprotected spectators located downwind.

(4) The use of trip wires to detonate riot control agents is prohibited.

Chapter 10

Dismounted Live Fire Ranges

10-1. General

This chapter prescribes the requirements for the firing of all dismounted weapons systems.

10-2. Safety

a. All live fire activities will be conducted IAW AR 385-63, DA PAM 385-63, and this regulation.

b. Live and blank small arms ammunition will not be fired concurrently at the same location supervised by the same OIC/RSO. If any change from live to blank ammunition is necessary during the exercise (i.e. performing live fire of a lower table prior to executing a blank fire of a higher table), a complete physical search of all personnel will be conducted prior to changeover.

c. Individual firers are responsible for the safe firing, operation, and positive control of their weapons.

d. All weapons will be cleared, placed on safe, and oriented in a safe direction when not actively involved in the conduct of live fire exercises.

e. Individual firers will ensure their weapons are clear when firing is complete. The RSO is responsible to verify all weapons are clear before the weapon is moved to the rear of the firing line.

f. Any incident involving ammunition or weapons malfunction must be handled IAW paragraph 4-13f.

10-3. Firing Requirements

a. See chapter 4 for general range operating procedures.

b. If so equipped, range limit markers must be visible at all times while firing is conducted and will include sufficient auxiliary lighting to make them readily visible to the naked eye and/or thermal sights during periods of limited visibility. OICs of training for those facilities without range limit markers will ensure the unit is briefed on left and right firing limits prior to the conduct of live fire activities.

c. Cross range firing may only be conducted when authorized by an approved DZ, range deviation, or by the RMA.

d. Communications by radio will be maintained between the using unit and the target systems operator at all times (OIC responsibility)

e. Before firing, the OIC will ensure all preliminary marksmanship instruction (PMI) is complete.

f. Cease fire and cease fire freeze will be conducted IAW paragraph 4-13i of this regulation.

g. When firing under an approved deviation of safety criteria, all provisions of the deviation documentation will be met. All personnel engaged in the firing activity will be briefed on the restrictions imposed by the deviation documentation.

10-4. Danger Zones (DZs) See DA Pam 385-63.

10-5. Scenario Development/Non-Standard Exercises

All scenario development and nonstandard firing exercises must be coordinated IAW paragraph 4-7 of this regulation.

10-6. Target Support

- a. Targetry – Routinely used targets are stocked in target buildings located on all ranges or in close proximity.
- b. Non-standard targets and atmospherics – (props, material for cover and concealment, facades) must be requested during coordination.

Chapter 11

Mounted Live Fire Ranges

11-1. General

This chapter prescribes the requirements for the firing of all vehicle mounted weapons systems.

11-2. Safety

- a. All live fire activities will be conducted IAW AR 385-63, DA PAM 385-63, and this regulation.
- b. Vehicle commanders are responsible for the safe firing, operation, and positive control of their weapons and/or fire control systems.
- c. All weapon systems will be cleared and elevated while personnel are downrange. Units may request to depress weapon systems to conduct boresighting activities from Range Operations as needed – without the use of laser and with all weapons otherwise clear of all munitions.
- d. The use of any laser system will be conducted IAW DA PAM 385-63.
 - (1) All lasers will be treated as direct fire weapons except those specifically designed for force-on-force training.
 - (2) No personnel will be within the safety fan of a non-eye safe laser during firing without prior approval from Range Branch and use of protective glasses that are within the correct frequency range for the laser being fired.
- e. Vehicle commanders will ensure all weapon systems are cleared once the firing vehicle has completed its firing scenario and prior to returning to the baseline. Vehicle commanders will ensure all weapon systems remain elevated and oriented downrange when returning to the baseline.
- f. Live and blank small arms ammunition will not be fired concurrently at the same location supervised by the same OIC/RSO. If any change from live to blank ammunition is necessary during the exercise (i.e. performing live fire of a lower table prior to executing a blank fire of a higher table), a complete physical search of all personnel will be conducted prior to changeover.
- g. The RSO is responsible to verify that all weapon systems are cleared before the vehicle moves to the rear of the firing line or out of the maneuver box to a designated position.
- h. Any incident involving ammunition or weapons malfunction must be handled IAW paragraph 4-13f.

11-3. Firing Requirements

- a. See chapter 4 for general range operating procedures.
- b. If so equipped, range limit markers must be visible at all times while firing is conducted and will include sufficient auxiliary lighting to make them readily visible to the naked eye and/or thermal sights during periods of limited visibility. OICs of training for those facilities without range limit markers will ensure the unit is briefed on left and right firing limits prior to the conduct of live fire activities.

- c. Cross range firing may only be conducted when authorized by an approved DZ, range deviation, or by the RMA.
- d. Communications will be maintained between the using unit and the target systems operator at all times (OIC responsibility).
- e. The firing of vehicle mounted grenade launchers requires additional coordination with Range Operations.
- f. Before firing, the OIC will ensure all pre-firing safety checks are complete. This includes weapon systems with established prep-to-fire checks IAW published Technical Manuals (TM).
- g. When firing under an approved deviation of safety criteria, all provisions of the deviation documentation will be met. All personnel engaged in the firing activity will be briefed on the restrictions imposed by the deviation documentation.

11-4. Danger Zones (DZs) See DA Pam 385-63.

11-5. Scenario Development/Non-Standard Exercises

All scenario development and nonstandard firing exercises must be coordinated IAW paragraph 4-6 of this regulation.

11-6. Target Support

- a. Targetry – Routinely used targets are stocked in target buildings located on all ranges or in close proximity.
- b. Non-standard targets and atmospherics – (props, material for cover and concealment, facades) must be requested during coordination.

Chapter 12 Mortars

12-1. General

This chapter prescribes the minimum requirements for firing mortar systems within the Fort Knox training complex. All mortar training will be conducted IAW TC 3-22.90 and DA PAM 385-63. All training with mortar weapon systems will be coordinated through Range Operations.

12-2. Safety

- a. Commanders will ensure personnel are certified to conduct duties as OIC/RSO IAW DA PAM 385-63 and chapter 3 this regulation.
- b. All units computing safety data will submit a DZ to the Range Operations for approval not less than 30 working days prior to the date of firing. DZs will be drawn on overlays using a 1:50,000 scale map, or Army approved DZ generating software such as Army Mapper. DZs will not cross any road, trail, or facility without coordination with Range Operations. For dud producing munitions, the intended target area will be wholly contained within a designated “high hazard” impact area.
- c. The OIC and RSO will ensure the following:
 - (1) All mortar team members are thoroughly familiar with the procedures outlined in this regulation, ATTP 3-21.90 Tactical Employment of Mortars, TC 3-22.90 Mortars, TC 3-20.33 Training and Qualification of Mortars, and other technical manuals as applicable.
 - (2) Communications is maintained with Range Operations at all times. In the event of a loss of communications between the firing range (position) and Range Operations, the OIC will initiate a mandatory cease (check) fire until communications are reestablished.
 - (3) After the first mission is fired, the safety data and the safety diagrams will be updated to reflect current meteorological and registration data. The OIC is responsible to ensure all projectiles impact within the designated target area of the DZ on file at Range

Operations.

(4) Road guards (as applicable) are properly instructed in their duties and have positive communications with the OIC.

12-3. Mortar Live Fire Safety Instructions

a. OICs of training are responsible to adhere to all instructions and restrictions listed on the DZ.

b. The Fire Direction Center (FDC) will have a copy of the approved DZ posted on their firing charts.

c. OIC/RSO is responsible to verify the accuracy of all firing computations prior to any live fire. The RSO or safety officer will verify the lay of each weapon and conduct a reciprocal check with a second aiming circle.

d. Upon occupying a new position, a check round must be visually observed to impact safely in the DZ designated impact area prior to follow-on fire missions.

e. Observation of rounds/Firing Incidents.

(1) Units may select firing positions within scheduled training areas which best meet their training needs. Firing positions will not be established within 500 meters of the reservation boundary.

(2) The base gun will be located within 100 meters of the surveyed firing point.

(3) All mortar rounds will be observed impacting into the designated area of the DZ. Firing will cease during adverse weather conditions when visibility does not allow for the observation of projectiles impacting into the designated target area.

(4) Firing of illumination rounds will cease if rounds are observed drifting into the buffer zone of the DZ. In all cases, the OIC will verify all safety computations (including MET data) prior to live fire to ensure all components of the illumination round (canister impact, flare, etc.) remain within the confines of the approved surface danger zone.

(5) In the event of a misfire or stuck round, follow procedures as outlined in the appropriate TM. If these procedures fail to resolve the situation, immediately report the problem to Range Operations.

(6) An immediate check fire will be imposed when an aircraft is spotted approaching the trajectory of fire or passing within 1000 meters of the firing element.

(7) Observers.

(a) Observers utilizing OPs located in the impact area will not occupy or depart these locations until cleared to do so by the ROFD.

(b) Observers must maintain communications with the OIC/RSO at all times.

(c) Observers must have a clear understanding of the DZ designated impact area (copy of DZ or drawn on a map). Only targets within this area will be engaged.

(d) In the event of unobserved rounds or rounds observed out of impact area, observers will call "CEASE/CHECK FIRE FREEZE" and notify both the firing unit OIC and Range Operations immediately.

12-4. Unobserved Fire

a. If the unit is unable to observe a fired round OR observes a round impacting out of the designated impact area OR the unit receives a "CEASE/CHECK FIRE FREEZE" command from Range Operations, the OIC will issue an immediate "CEASE/CHECK FIRE FREEZE" to all gun positions and remove all personnel from their indirect fire weapons to preclude any changes to the deflection, azimuth, elevation on the gun in order to preserve the last data set.

b. The OIC will report the incident immediately to Range Operations.

c. The RSO will compare weapon data with most recent completed fire mission data and report any discrepancies to the OIC immediately. The OIC will, in turn, report those discrepancies to the Range Operations Firing Desk.

d. When reporting to Range Operations, the following information is required:

- (1) Unit reporting
- (2) Direction of Fire (in mils)
- (3) Elevation
- (4) MGRS grid coordinate of the firing point
- (5) MGRS grid of the intended target point
- (6) Type of round (DODIC and Lot #)
- (7) Type of fuze (DODIC and Lot #)
- (8) Charge used

12-5. Ammunition Care, Handling, and Safety

Safety precautions contained in TC 3-22.90, DA PAM 385-64 (Ammunition and Explosive Safety Standards), AR 190-11, (Physical Security of Arms, Ammunition, and Explosives), will apply at all FPs, also AR 710-2 for ammunition accountability.

12-6. Unused Charge Increments/Excess Propellant.

a. Do not allow charge increments/excess propellant removed from cartridges prior to firing to accumulate near the firing position. Place these in a metal or wooden container located at least 25m to the rear of the firing position. The container must have a closeable lid and will remain closed except when adding additional increments/charges. Excess charge increments not a part of the training event will be returned to the MASA with any ammunition residue.

b. Disposal of unused charge increments/excess propellant under field conditions is not authorized unless it is scheduled as a pre-planned training event in conjunction with the indirect fire training, coordinated with Range Operations and not done for convenience to avoid turn-in.

c. Procedure: To dispose of unused charge increments/excess propellant use the following procedure:

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

(2) Selected areas for propellant disposal training must be within the designated impact area, free of vegetation for 30m around the area and not within 75ft of a natural water source.

(3) Units must notify Range Operations, identifying the unit, OIC, and location prior to requesting propellant disposal training.

(4) Transport excess propellant to the powder burning area in a metal or wooden container on a properly placarded cargo vehicle with a metal cargo bed and operational fire extinguishers. Do not transport other materials, equipment, or passengers in the cargo bed with the excess propellant.

(5) Prior to initiating the training, all personnel and equipment (except a two-man team) will be positioned at least 50ft away and upwind from the site.

(6) Unit will provide sufficient personnel and equipment/water to control/extinguish the fire if necessary.

(7) Do not burn increments in piles. Spread them in a train one to two inches deep, four to six inches wide, and as long as necessary forming a line pointing into the wind.

(8) From this train, extend a starting train that will burn against the wind of single increments laid end to end. End this starting train with not less than one meter of inert material (dry grass, leaves, or newspapers).

(9) Ignite the material.

(10) OIC/NCOIC will remain at the site until all increments have been destroyed, and the fire is confirmed out.

d. Restrictions.

(1) Unused charge increment/excess propellant disposal may be restricted during periods of elevated Fire Threat Conditions (Fire Threat Condition RED or higher)

(2) Range Operations may further restrict powder burning when surface winds exceed 18 knots (20.7 mph) or as other safety considerations warrant.

(3) Units must request an updated status of these restrictions upon sign-on and prior to initiation.

e. Upon completion of the unused charge increment/excess propellant disposal training, contact Range Operations to request clearance of the site. Stay on site until it is cleared by a Range Tech (verify fire is out and all debris has been removed).

Chapter 13

Artillery

13-1. General

This chapter prescribes the minimum requirements for firing artillery systems within the Fort Knox training complex. All artillery training will be conducted IAW the latest publication of TC 3-09.81 Field Artillery Manual Cannon Gunnery and DA PAM 385-63. All training, including artillery weapon systems, will be coordinated through Range Operations.

13-2. Safety

a. Commanders will ensure personnel are certified to conduct duties as OIC/RSO IAW DA PAM 385-63 and chapter 3 of this regulation.

b. All units computing safety data will submit a DZ to Range Operations for approval not less than 30 working days prior to the date of firing. DZs will be drawn on overlays using a 1:50,000 scale map, or Army approved DZ generating software such as Army Mapper. Only area "D" of an artillery DZ may cross facilities, roads, trails, or other areas that may be occupied by personnel and then only if ALL ammunition components have been cleared for overhead fire by the QASAS.

c. The OIC and RSO will ensure:

(1) All team members are thoroughly familiar with the procedures outlined in this regulation, applicable field manuals and technical manuals, and Department of the Army regulations as they pertain to the conduct of live fire operations

(2) Communications are always maintained with Range Operations. In the event of a loss of communication between the firing range (position) and Range Operations, the OIC or RSO will initiate a mandatory cease (check) fire until communications are reestablished.

(3) The safety data and the safety diagrams are updated after the first mission is fired to reflect current meteorological and registration data. Firing units are responsible for ensuring all projectiles impact within the designated impact area of the active DZ on file at Range Operations.

(4) Road guards (if required) are properly instructed in their duties and maintain communications with the OIC.

13-3. Artillery Live Fire Safety Instructions

a. Units are responsible for adhering to all instructions and restrictions listed on the DZ.

b. When an Artillery Firing Area (AFA) is utilized, in order to maximize the full extent of the target area (as defined by the coordinates listed in the target data portion of the DZ), the OIC of training may, after verifying the position of all guns to be within the confines of the authorized AFA, direct the guns to exceed these established limits as long as this direction results in the detonation of all projectiles entirely within the boundaries of the specified target area.

c. FA units may select firing positions within scheduled training areas which best meet their training needs. Outside of those already established, no new firing positions will be established within 500 meters of the reservation boundary.

d. FA units conducting indirect live fire exercises will fire at a Quadrant Elevation (QE) greater than 15 degrees/267 mils. A QE below this level is considered direct fire.

e. If artillery indirect firing operations will be conducted over personnel, the QASAS must verify all ammunition components (projectile, fuze, and propelling charge) are certified for overhead fire by the Joint Munitions Command.

f. Upon occupying a new position, a check round must be visually observed to impact safely in the designated impact area of the DZ prior to follow-on fire missions.

g. Units conducting direct fire training will visually observe the rounds impact to ensure they function as designed. If a round does not function as designed, it will be reported immediately to Range Operations.

h. Positioning/Survey:

(1) Survey personnel will use techniques and/or position and azimuth determining systems (PADS) as defined in current applicable doctrinal publications.

(2) If the DZ is based upon a specific firing point, the base gun will be located within 100m of the surveyed point. All additional guns will be positioned within 250m of the base gun.

i. Observation of rounds/Firing Incidents:

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

(a) Coordinate their frequency with the Fort Knox Spectrum Manager (contact Fort Knox Range Operations for POC info).

(b) Operate in the 1600mil mode (no 360 mode) with accurate aspect angle.

(c) Have current Digital Terrain Elevation Data (DTED) loaded.

(d) Have current MET data loaded.

(e) Know the gun target line – specifically information regarding the firing point and the intended impact area.

(f) Operate in "hostile fire mode (or hostile and friendly mode if so capable) so as to account for any errant round not landing in the intended target area.

(2) Observers:

(a) Observers utilizing OPs located in the impact area will not occupy or depart these locations until cleared to do so by the ROFD.

(b) Observers must maintain communications with the OIC/RSO at all times.

(c) Observers must have a clear understanding of the DZ designated impact area (copy of DZ or drawn on a map). Only targets within this area will be engaged.

(d) The use of any laser system will be conducted IAW DA PAM 385-63.

(i) All lasers will be treated as direct fire weapons except those specifically designed for force-on-force training.

(ii) No personnel will be within the safety fan of a non-eye safe laser during firing without prior approval from Range Operations and use of protective glasses that are within the correct frequency range for the laser being fired.

(3) Firing of illumination rounds will cease if rounds are observed drifting into the buffer zone (Area A, B, or C) of the DZ. In all cases, the OIC will verify all safety computations (to include MET data) prior to live fire to ensure all components of the illumination round (canister impact, flare, etc.) remain within the confines of the approved surface danger zone.

13-4. Unobserved Fire (see Paragraph 12-4)

13-5. Ammunition Care, Handling and Safety

a. Units will follow the safety precautions outlined in TC 3-09.81, technical manuals, and DA PAM 385-64 (Ammunition and Explosive Safety Standards). Units are responsible to secure and account for ammunition IAW AR 190-11 (Physical Security of Ammunition) and AR 710-2 (Supply Policy Below the National Level) respectively.

b. Ammunition will not be removed from sealed containers any earlier than necessary to

prepare it for firing. Ammunition will not be placed directly on the ground and will be protected from the elements.

c. Only authorized fuze wrenches will be used to assemble the fuze to the projectile IAW applicable TMs and FMs.

13-6. Excess Propellant (See paragraph 12-6)

Chapter 14 **Aviation Operations and Aerial Gunnery**

14-1. General

a. This chapter establishes procedures for the conduct of aviation operations including Unmanned Aerial Systems (UAS), Rotary Wing (RW), and Fixed Wing (FW) within the Fort Knox Special Use Airspace (SUA) R3704 with special emphasis on live fire operations.

b. Aerial gunnery at Fort Knox is conducted solely within the confines of SUA R3704. The most current boundaries of SUA R3704 are published annually in FAA Joint Order (JO 7400.XX). The latest version of this order can be found at the [FAA's Air Traffic Plans and Publications](#) website. A Fort Knox map with aviation overlay depicting these boundaries may be found on the Fort Knox website- click this link to view [Fort Knox Aviation Overlay](#). Fort Knox SUA is divided into three major parts: R3704A has a designated altitude from surface to 10,000 feet Mean Sea Level (MSL); and R3704B has a designated altitude from 10,001 feet MSL to 20,000 feet MSL. Additionally, Fort Knox has an assigned Air Traffic Control Assigned Airspace (ATCAA) with a designated altitude of 20,001 feet MSL up to and including 23,000 feet MSL – the lateral boundaries of which match that of SUA R3704. The Knox ATCAA is used primarily to support the firing of Hellfire missiles.

c. Units requiring airspace above SUA R3704A must request it through Range Operations NLT 96 hours prior to the required event to ensure proper scheduling.

14-2. Safety

a. All aviation live fire activities shall be conducted IAW AR 385-63, DA PAM 385-63, this regulation, and other applicable Service regulations. When conflicts in standards occur, the stricter (or Army) standard will prevail.

b. Pilots in Command (PC) are responsible for the safe firing, operations, and positive control of their aircraft and weapons systems.

c. The use of any laser system will be conducted IAW DA PAM 385-63. Personnel are not allowed within the WDZ (safety fan) of a non-eye safe laser without prior approval from Range Operations. For personnel authorized to be within the WDZ (safety fan) of a non-eye safe laser, the use of appropriate PPE is mandatory.

d. PCs will ensure all weapons have been rendered safe prior to maneuvering their aircraft in such a manner so as to cause their weapon systems to be oriented outside of the intended impact areas as defined by the approved WDZ.

e. Any incident involving ammunition or weapons malfunction will be handled IAW paragraph 4-12f.

14-3. SUA R3704 Entry Procedures/Communications

a. Entry into SUA R3704 requires the submission of a FK Form 8175 (Air Mission Request) to Fort Knox Range Operations 7-10 days in advance of the mission. The procedures and use of this form are contained within FK Reg 95-1, Fort Knox Flight Rules.

b. Fort Knox Range Operations operates on FM 38.900 (primary) and FM 41.800 (alternate). The ground to air frequency is VHF 136.075. The ROFD also monitors VHF 121.50 (Guard) and UHF 243.0 (Guard). All aircraft will "squawk" 4000 while operating within SUA

R3704.

c. With prior permission, aircraft entry into and operations within SUA R3704 may be controlled by the unit's air controlling entity (i.e. Joint Tactical Air Controller or JTAC, Forward Air Controller or FAC, etc.) as long as the air controlling entity maintains positive communications with Range Operations whenever an aircraft under their control has permission to fly in SUA R3704.

d. All aircraft (military and civilian) must establish radio communications with the ROFD (either directly or through their designated JTAC/FAC) prior to entering SUA R3704.

e. Civilian aircraft that cannot talk directly to ROFD because of communications equipment incompatibility may request entry by contacting Godman Army Airfield (GAAF) and request relay to Range Operations on their behalf. Civilian aircraft unable to communicate directly with the ROFD on any frequency when GAAF is closed may not enter SUA R3704.

14-4. Forward Arming and Refueling Points (FARPs)

a. All arming and refueling operations will be conducted IAW ATP 3-04.17, Techniques for Forward Arming and Refueling Points, this regulation, and the current publication of the Fort Knox Environmental Handbook.

b. Within SUA R3704, arming and fueling of aircraft will normally be accomplished at established FARP locations Cedar Creek or Chappel Ridge airstrips; Yano helipad may also be used with proper coordination. All areas must be properly scheduled and occupied prior to use.

c. Non-standard locations may be utilized for FARPs, but they must be approved by Range Operations. Requesting units must conduct/prepare their own surveys and submit a copy along with a memorandum requesting to utilize the alternate site as a Forward Arming and Refueling Point (FARP) to Range Operations a minimum of 10 days in advance of their desired training date. The memorandum should include the training date(s), location (grid), and how many personnel and type of equipment on site. Site must meet standard FARP requirements stated above.

14-5. Tactical Unmanned Aerial Systems (TUAS)

a. TUAS operations shall be conducted IAW FK Regulation 95-23 and this regulation.

b. Small UAS (i.e. Raven) operations conducted in support of a live fire exercise (e.g. squad or platoon live fire exercise), will be confined to the same lateral boundaries as the facility of the live fire event for which they are in support of. Altitude is normally restricted to 1,000' AGL but will not exceed the vertical hazard of the munitions being fired on that facility.

c. All requests for TUAS live fire (currently restricted to laser designation) must be submitted to Range Operations for approval at least 30 days in advance of the event. Request must include all employment parameters – min/max altitude, min/max airspeed, min/max engagement range, min/max attack angles, type of laser, etc.

14-6. Fixed Wing (FW) Aircraft

a. Bombing and strafing from FW aircraft may be conducted into the Fort Knox impact areas (from within SUA R3704) with an approved WDZ from Range Operations.

Scenarios/targets/engagement parameters must be coordinated with Range Operations a minimum of 30 days in advance of the training.

b. Prior to commencing any live fire engagement, aircraft are required to make a minimum of one dry pass (no ordnance release) over the target area to insure positive target identification.

14-7. Weather

a. Weather minimums for flight operations within SUA R3704 are covered in FK Regulation 95-1 and FK Regulation 95-23.

- b. Weather minimums for weapons release must be equal to or greater than the visual meteorological conditions specified in FK Regulation 95-1.
- c. Targets must be able to be visually acquired and observed (NO UNOBSERVED FIRE).

14-8. Firing Requirements/Restrictions

- a. See chapter 4 for general range operating procedures.
- b. A WDZ approved by Range Operations is required for all aviation live fire operations within SUA R3704.
- c. Ground parties are not allowed within the confines of a DZ except as authorized in DA PAM 385-63 and/or ATP 3-09.32 (Multi-Service Tactics, Techniques, and Procedures for Joint Application of Firepower – JIFIRE) and must have the approval of the RMA.
- d. OICs must maintain positive communications at all times with the target systems operator (if applicable) and the aircraft conducting operations within SUA R3704 and/or the air controlling entity (i.e. JTAC, FAC, etc.) exercising direct control over the aircraft participating in the exercise.
- e. Adherence to the published engagement parameters in the approved DZ is imperative. This is especially true for those Aviation units requesting to engage targets on instrumented ranges. Aircraft must adhere to the specific engagement parameters to avoid damage to target devices. Specifically, the maximum allowable attack angle on Stationary Infantry Targets – SITs – is 6 degrees. Aircraft may fire at these targets no closer than 150m from an altitude no higher than 50 feet AGL). For additional examples/restrictions, contact Range Operations.
- f. Scenario development and nonstandard firing exercises shall be coordinated IAW paragraph 4-6 of this regulation.
- g. Hard targets are available in the Hays Flats and Flat Lick impact areas (both capable of supporting HE munitions) and may be engaged with a variety of weapons systems including 2.75" rockets, 20mm/30mm (et al), and AGM-114 Hellfire (Hays Flats only and "F" model missiles and earlier only). Contact Range Operations for specific information.
- h. Aircraft will not intentionally target improved roads, bodies of water, infrastructure, targets, or target devices not part of an approved scenario.
- i. During events where the OIC and RSO control the live fire training from an aircraft the JTAC/FO if present at the facility or observation point must be a certified aviation RSO, E-6 and above. They must possess the same certifications as the OIC/RSO but do not have to be weapons system qualified.

14-9. Armament Malfunction Plan/Inadvertent Weapon Release

- a. In the event of a weapons malfunction (jammed weapons/run away/hang fires etc.), Flight Crews/OICs shall:
 - (1) Immediately initiate emergency procedures IAW appropriate aircraft operations manual.
 - (2) Make all attempts to keep aircraft/weapon system(s) orientated down range into the intended impact area (to the maximum extent possible) until malfunction has been resolved.
 - (3) Immediately notify Range Operations of the incident.
- b. In the event of a release malfunction, the PC shall provide Range Operations the following: aircraft Heading (HDG), Airspeed (AS), Altitude (ALT) and grid location of the release point, grid of impact if known, and type of ordnance.
- c. If the potential exists for any remaining ordnance to be unintentionally released, all remaining ordnance (or suspension equipment, if necessary) should be released IAW the procedures listed in paragraph 14-10 – External Stores Jettison. PCs must advise Fort Knox Range Operations of this intention prior to jettisoning.

14-10. Stores/Munitions Jettison Procedures

- a. DO NOT jettison stores/munitions within the confines of the Fort Knox range and training area complex unless aircraft control or safe operation is in jeopardy.
- b. Aircraft will jettison munitions only if they cannot be returned safely to their point of departure.
- c. Contact the Range Operations Firing Desk (ROFD) immediately upon recognizing the need to jettison. Maintain altitude and assigned sector within R3704 until cleared by the ROFD to proceed with jettisoning procedures (ROFD must bring all ranges in the training complex to a cease fire prior to commencing this procedure).
- d. Once permission is granted to proceed, descend to jettison altitude (1700' MSL) on a heading of 330 degrees magnetic toward the jettison area. The jettison area for external stores/dud munitions is a 2Km diameter circle located in Hays Flats centered on grid FG 04000 93000.
- e. After release, advise Fort Knox Range Operations of aircraft's actual heading, number and type of stores/ordnance jettisoned, and location of impact.

14-11. Emergency Situations/Aircraft Mishap

- a. If an aircraft mishap occurs within the training complex, Range Operations will notify Godman Army Airfield (GAAF) Tower (if open, 911 if not) to activate the primary crash alarm, provide initial incident command system coordination, bring all live fire operations to an immediate cease fire, and use whatever means available to cordon off and secure the area.
- b. In all emergency situations, the PC (if physically able and it is safe to do so) will remain with aircraft until such time as a qualified armament and/or EOD personnel arrive and clear the aircraft.

14-12. Restricted Airspace Incursions

- a. When notified of an incursion into SUA R3704 by an unauthorized aircraft, Range Operations will:
 - (1) Bring all ranges whose ordnance has the capability of affecting the aircraft to an immediate cease fire (if the altitude/location of the unauthorized aircraft cannot be accurately or expeditiously determined, bring ALL live fire operations to an immediate cease fire).
 - (2) Provide all aircraft currently operating within SUA R3704 (or the air controller in charge of them) all known information about the unauthorized aircraft (i.e. altitude, heading, and current location) so the PC can or at the direction of Range Ops Fire Desk Operator maneuver their aircraft in such a manner so as to avoid a potential collision.
 - (3) Report the incursion to appropriate authority.
- b. Aircraft operating within SUA R3704 are not permitted to intercept the intruding aircraft.

Chapter 15

Drop Zone Operations

15-1. General. This chapter defines the responsibilities, restrictions, controls, and additional requirements for use of all Drop Zones, Landing Zones, and Pickup Zones within the Fort Knox RTA complex.

15-2. Safety

- a. The unit commander is responsible for safety during all phases of an airborne/air land/exercise conducted under their control. Commanders of units conducting these operations, battalion level and above, will establish and maintain a safety training and certification program.
- b. Commanders will ensure personnel selected to perform the duties of Drop Zone Safety Officer meet the requirements established in DA PAM 385-63 and the applicable publications

listed in Appendix A. The Commander must then certify these individuals by annotating their FK Form 1769 (OIC/RSO Certification Card) IAW chapter 3 of this regulation.

c. Units are responsible for conducting their own Drop/Landing/Pickup Zone surveys and must conduct a physical inspection of any Drop/Landing/Pickup Zone a minimum of 24 hours in advance of any airborne/air assault operation. Range Operations will maintain a database of current surveys.

15-3. Restrictions

a. Active Drop/Landing Zones are off limits to all personnel except those engaged in the operation being conducted.

b. Non-participating training will not be conducted adjacent to any active Drop/Landing/Pickup Zone without prior coordination with Range Operations.

c. Only Drop Zone control party vehicles are authorized on the Drop Zone. This applies even when there is co-usage of a Drop Zone.

d. Smoke during daylight hours or lights during the hours of darkness will not be used within 1 nautical mile of any Drop Zone when drop activities are scheduled. The color red will not be used and is reserved for emergencies only.

15-4. Communications

a. The Drop Zone Safety Officer will establish and maintain positive communications with the Range Operations firing desk throughout the training event (Primary LMR RGCTRL 1 or FM 38.900 FM (Alternate FM 41.800), or VHF 136.075.

b. With prior permission, aircraft entry into and operations within SUA R3704 may be controlled by the unit's air controlling entity (i.e. JTAC, FAC, etc.) as long as the air controlling entity maintains positive communications with Range Operations.

15-5. Qualifications/Responsibilities of Drop Zone Support Personnel. See publications listed in paragraph 15-6a.

15-6. Airborne/Air Assault Landing Procedures/Requirements

a. Drop zone operations will follow the instructions listed in TC 3-21.220 Static Line Parachuting Techniques and Training, ATP 3-18.11 Special Forces Military Free-Fall Operations, and Air Force Instruction (AFI) 13-217 Drop Zone and Landing Zone Operations.

b. Required personnel, their certifications, and basic procedures for Fort Knox do not deviate from the publications listed above.

c. The Drop Zone Safety Officer will be physically present from 1 hour prior to the first drop until all personnel and/or equipment are recovered and the Drop Zone is closed. The Drop Zone Safety Officer may be a member of Drop Zone Support Team provided he meets the required qualifications for both positions.

15-7. Airspace Control

a. Fort Knox Range Operations is the controlling agency for Special Use Airspace R- 3704 and the authorization authority. All military aircraft operating within Fort Knox restricted airspace will comply with FK Regulation 95-1 and this regulation. Range Operations will:

(1) Not allow non-participating aircraft to enter the Drop/Landing/Pickup Zone airspace while it is active.

(2) Broadcast the opening and closing of the Drop/Landing/Pickup Zone airspace to all aircraft operating in R-3704.

(3) Alert Drop Zone Safety Officer of unauthorized incursions into restricted use airspace.

(4) Submit the request for NOTAMs via the AMR process to GAAF.

b. Non-Participating Aircraft Restrictions: Non-participating aircraft will remain a minimum of 1 NM laterally from Drop Zones during scheduled operations as per published NOTAM(s). Aircraft desiring to enter this airspace will not do so without clearance from Range Operations.

15-8. Special Safety Considerations

a. If, in the opinion of the Drop Zone Safety Officer, unauthorized vehicle/helicopter activity on the Drop Zone just prior to the drop could cause a serious hazard to descending parachutists, the drop will be aborted.

b. Control spectators on and in the immediate vicinity of the Drop Zone.

c. The Drop Zone Safety Officer will immediately notify Range Operations by radio/landline of all incidents/accidents occurring during use of the Drop Zone and submit a Serious Incident Report. This report does not replace nor relieve units of their responsibility to report paradrop operations to their headquarters.

d. The Drop Zone Safety Officer will report to Range Operations immediately upon completion of the airborne operation the number of jumpers safely down on the Drop Zone.

Chapter 16

Waterborne Operations and Riverine Live Fire Range

16-1. General

a. This chapter prescribes the minimum requirements for the conduct of waterborne operations within the Fort Knox training complex and the conduct of all live fire on the riverine ranges. All waterborne training (live fire and other) will be coordinated through Range Operations.

b. Units desiring to conduct waterborne activities on the Ohio River must coordinate this training with both Range Operations and the US Coast Guard, Ohio Valley Sector (502-779-5424) at least 30 days in advance of the training date.

16-2. Safety

a. Recreational swimming is not authorized in any body of water within the Fort Knox training complex. Exercises involving swimming must be coordinated through Range Operations at least 30 days in advance.

b. All units conducting waterborne operations will make every effort to have a Red Cross certified lifeguard in a power safety boat located downstream from the operation with at least a CLS on site. Commanders may substitute individuals they determine to be "strong swimmers" for the Red Cross certified lifeguard if an MOS trained medic is on site and this substitution is addressed in the unit DRAW. The Red Cross certified lifeguard or "strong swimmer" may not be assigned any other duties while performing in this capacity.

c. For waterborne operations, planning will include consideration of the effects of cold water and wind chill in inducing hyperthermia, the actions to be taken to avoid it and annotated on the DRAW. Refer to TM 4-15.21 Army Water Transport Operations regarding hypothermia protective clothing and the effects of hypothermia.

d. Life Preservers

(1) The United States Coast Guard (USCG) Series 160.155 (Type I) personal flotation device (PFD) is the primary PFD for use by Army personnel aboard watercraft when mobility is not a factor. All watercrafts will carry a standard USCG 160.155 (Type I) life preserver for each authorized person on board.

(2) The USCG 160.053 (Type III/V) PFD provides less flotation than the USCG 160.155 (Type I). These PFDs may be used aboard Army watercraft in calm weather and in calm water. Their main disadvantages are limited flotation, the tendency to ride up on the wearer, minimum buoyancy (17.5 pounds) and requires conscious effort to keep the wearer's

head out of the water.

(3) Special Operations Forces may wear the Inherently Buoyant PFD (or UDT life jacket). A PFD must be worn by each individual and must have sufficient lift to support the individual and their combat load.

(4) Individuals should conduct "float tests" to ensure adequate buoyancy is achieved before the mission or training evolution. For flotation devices that use gas bladders for buoyancy, the activation mechanism (for example, gas cartridges and activators) should be inspected for proper functioning and ease of access while personnel are in full combat dress.

(5) All drivers and crew members involved in the swimming of track and wheel vehicles will wear the USCG 160.053 (Type III/V) PFD during vehicle swimming operations. No personnel in the vehicle will wear load bearing equipment during the swimming operation.

e. Safety Boats: See the requirements of TC 5-210 MILITARY FLOAT BRIDGING EQUIPMENT for safety boats as it is still applicable to all waterborne operations.

(1) Safety boats are required for all waterborne operations. The boat must be large enough and powerful enough to cope with the conditions at the work/training site.

(2) The safety boat should be manned by two or more persons (helmsman and lifeguard/strong swimmer) who are qualified and experienced, trained in the correct methods of recovering personnel from the water, basic first aid, artificial respiration, and correct radio procedures.

(3) The safety boat should perform no duties other than to standby, usually downstream from, but within a safe distance of the work/training site. The vessel may also be required to warn off civilian craft or other vessels which might create a hazard or might otherwise interfere with the conduct of the operation.

(4) In situations where the waterway is extremely busy, when the current velocity is swift, or where the work parties are quite large or spread over a great distance, the commander might be required to designate more than one safety boat for each work/training site.

(5) The items required in the safety boat are identified in Table 4, TC 5-210.

f. Overboard: All craft will be prepared for rescue operations drills to aid in the rapid identification and recovery of a man overboard. Overboard drills must be rehearsed prior to waterborne operations.

g. Fire. Depending on the severity of the fire, it may or may not be necessary to disembark personnel. If it is necessary, rehearsed emergency disembarking procedures will be followed, and designated craft will assist with debarkation and firefighting. The possible necessity for grounding the craft that is on fire should be considered. In the event of a forced disembarkation, boat commanders must be aware of the possibility of UXO contamination along the banks of waterways that traverse the impact area.

16-3. Firing

a. There is approximately 14 KM of restricted use waterway within the impact area; 10 KM of which support live fire activities.

b. The specifics of the Riverine range are outlined in a deviation of range safety criteria to allow firing from the watercraft and are available at Range Operations. If the deviation does not meet the commander's intent for training, a discreet DZ can be generated by the unit or Range Operations. General rules are:

(1) Targets will be placed no higher than the mount of the weapon used to engage it above the waterline) in order to produce a zero degree (or negative) projectile trajectory when firing.

(2) If water levels are above the pre-determined elevation as indicated at the launch point, "THE RED LINE", the deviation and or discreet DZ will be restricted or canceled.

(3) OICs will ensure all targets have a positive backstop.

(4) Left and right limits will be maintained IAW the deviation or discreet DZ.

(5) Units will be required to emplace/recover their own targets/debris unless otherwise coordinated.

(6) Adjacent range use will significantly affect access to the riverine ranges and courses may be shortened to accommodate this firing. Detailed coordination with Range Operations is required.

(7) OIC/RSO requirements will be IAW chapter 3 of this regulation.

16-4. Vehicle Swim Pre-Operation Procedures

a. Vehicles will be prepared and operated IAW all applicable publications governing swim operations.

b. Vehicle evacuation drills will be conducted on land until the OIC verifies the crew is proficient prior to conducting swim operations. The vehicle will be configured and manned as it will be during the training operation.

c. Unit commanders will ensure all vehicle drivers have received proper instruction on how to operate their vehicle during water operations IAW the appropriate publications prior to entering the water.

d. An appropriate length of rope/nylon twine and buoyant marker will be attached to each swim vehicle. This marker will not be removed until termination of the swim operation.

16-5. Track Vehicle Water Operations

a. When training inexperienced drivers, only one vehicle will be in the water at any given time.

b. Qualified medical and recovery vehicle personnel and equipment will be positioned to provide immediate rescue and recovery operations.

c. Radio contact will be maintained between the OIC, safety boat, and swimming vehicle(s).

d. Intercom communication between driver and TC will be maintained.

e. In the event of severe weather, the OIC will implement the unit's severe weather plan.

Chapter 17

Grenades, Demolitions and Mines

17-1. General

This chapter prescribes the minimum requirements to train with grenades, mines and explosive charges, (including the use of field expedient charges) within the Fort Knox RTA complex. All such training will be conducted IAW DA PAM 385-63 and appropriate doctrinal publications.

17-2. Fire Fighting

a. If a fire develops after a detonation and no explosives are involved in the fire, notify Range Operations and be prepared to fight the fire if required.

b. If a fire develops after a detonation and explosives are involved in the fire, evacuate all personnel to a safe distance and notify Range Operations immediately. DO NOT attempt to fight the fire.

17-3. Explosives Storage

a. The maximum Net Explosive Weight (NEW) of any pile or stack of explosives will not exceed 500lbs.

b. Demolition materials and detonators will each be stored separately. Blasting caps will be kept at least 25 feet from all explosives until ready for use.

c. Inert or practice munitions will be placed in a separate pile or stack designated for that type of material. At no time will inert or practice munitions be mixed with live munitions.

d. The RSO will supervise storage of explosives to ensure proper compatibility. Tarps or

similar type material are required to reduce exposure.

e. Explosives will be stored no closer than the minimum safe distance for “unprotected personnel” for the size/type of charge to be detonated.

Section I Grenades

17-4. Safety

a. All hand grenade live fire activities will be conducted IAW AR 385-63, DA PAM 385-63, this regulation, the Christensen Hand Grenade Range SOP, TC 3-23.30, and other applicable references.

b. Personnel within the danger zone of casualty producing hand grenades must wear the appropriate level of personal protective equipment (PPE). For casualty producing grenades, the minimum level is PPE level 1 as defined in table 2-2 of DA PAM 385-63.

17-5. OIC/RSO Requirements – Grenade Range

a. DA PAM 385-63 outlines additional training requirements for OICs, RSOs and assistant RSOs (ARSOs) of live grenade ranges (above that which is already required to be an OIC and/or RSO).

b. Certification of personnel to perform these duties by unit commanders means they have demonstrated proficiency in these tasks and meet the other requirements listed in chapter 3 of this regulation prior to assuming their duties.

17-6. Training/Firing

a. Christensen Hand Grenade range. Although qualification is not a prerequisite for Soldiers to participate in the live bay, successful completion of the mock bay as defined by TC 3-23.30 is a non-waiverable requirement. This facility’s standard operating procedures (SOP) may be obtained from Range Operations.

b. Trenches, bunkers, and open ranges: After proper coordination with Range Operations, hand grenades may be employed on facilities other than Christensen Hand Grenade range. Specifically, certain portions of the trenches on Cedar Creek Infantry Platoon Battle Course (IPBC) and Kennedy Infantry Squad Battle Course (ISBC) may be used to support this training.

c. Units requiring conducting this training must request it from Range Operations a minimum of 30 days in advance. During training, the OIC/RSO must conduct a “bang” count to account for all thrown grenades. OIC’s will immediately cease training and withdraw all personnel at least 150m from the location of the dud grenade, report it to Range Operations, and await arrival of EOD before training may resume.

d. The minimum proficiency requirements to throw a live grenade in these instances are no different than those specified to do so on Christensen. It is the OIC’s responsibility to ensure any Soldier designated to throw live grenades on facilities other than Christensen meet these minimum proficiency levels.

17-7. Malfunctions

a. Only EOD personnel are authorized to approach a high explosive grenade that has been thrown but failed to function as designed (i.e. a “dud”).

b. The OIC of training will immediately place the range into a temporary cease fire and notify Range Operations of the dud. Range Operations will contact EOD and coordinate for its disposal.

c. If the malfunction occurs on Christensen Hand Grenade range the following will apply:

(1) After a thrown grenade fails to function, the OIC of training will immediately CEASE THROWING additional live grenades until the unit is cleared to return to a training status by

Range Operations.

(2) The OIC will alert all personnel on the same side of the facility's dividing berm as the dud grenade's presence and instruct them to remain behind the protective wall in their respective throwing bays for 5 minutes. After the prescribed time has elapsed, the OIC will instruct these same personnel to return by the most direct means away from the location of the dud grenade to a covered area (i.e. ready wall).

(3) All throwing bays identified in the step above will remain closed and unoccupied until EOD personnel have properly disposed of the dud grenade (the unit may continue to train on the opposite side of the range).

d. If a malfunction occurs on facility other than Christensen (i.e. Cedar Creek, Kennedy, MFO, Boydston, etc.) the DZ area of the grenade (150m radius for M67 fragmentation grenades) will be evacuated of all personnel after waiting 5 minutes in the covered throwing position (cook-off time). This area will remain off-limits until the grenade can be rendered safe by EOD.

Section II Demolitions

17-8. Safety

a. OICs of demolitions training shall abide by the safety considerations as outlined in TM 3-34.82 Explosives and Demolitions. All personnel engaged in operations in which explosives are involved shall be thoroughly trained in explosive safety and be capable of recognizing hazardous explosive exposures. Instructor personnel must meet this requirement and be fully competent and experienced in the safe handling and employment of explosives.

b. OICs will suspend all demolition training when lightning is observed or reported in the Fort Knox local area. The OIC will withdraw all personnel on the training site to the designated MSD. Training may resume once the lightning advisories(ies) have been canceled/reported greater than 20NM from Fort Knox.

c. Steel cutting charges fired outside of a steel-cutting bunker will not exceed 0.9 kilograms. Observers must be at least 100m away in a fragmentation proof shelter, 300m away if in a defilade, or 1000m away if in the open (for charges placed on steel).

d. Charges placed on concrete will not exceed 18 kilograms and placed on the side nearest the observer. Observers must be at least 100m away in a fragmentation proof shelter, 300m away if in a defilade, or 900m away if in the open (for charges placed on concrete).

e. For cratering charges, the maximum charge to be fired in training will not exceed 145 kilograms.

17-9. Misfires

Follow the misfire procedures outlined in TM 3-34.82 Explosives and Demolitions. Explosive items that do not have misfire procedures or whose misfire procedures fail are considered duds and will be treated as such. For clearance of dud munitions contact Range Operations.

17-10. Personnel Limits

a. With regard to exposure to risks associated with explosives, the following provides the overarching guidance when conducting this type of training: a minimum number of personnel will be exposed, for a minimum amount of time, to the smallest quantity of explosives, consistent with safety and efficiency. All personnel not involved in the explosive operation will be in the safe area. The safe area will be designated by the OIC. Minimum safe distances for personnel will not be waived.

b. The responsible OIC will:

(1) Ensure strict accountability of all class V items.

(2) Ensure that the responsibility for the preparation, placement or firing of charges is not divided. The OIC is responsible for the supervision of all phases of the demolition operation.

(3) Ensure the restrictions/requirements as identified on the approved firing overlay are met.

(4) Conduct a detailed mission/safety briefing on site before conducting explosive operations.

(5) Ensure warnings are given before initiating demolitions; give the warning "FIRE IN THE HOLE!" three times (IAW TM 3-34.82).

(6) Conduct a search of the demolition site after each detonation to ensure that the area is free of unexploded ordnance.

(7) Fill in all shot holes at the completion of the demolition training. All material such as expended fuze igniters, burnt time fuze, etc. will be policed up before requesting final facility clearance.

Section III Mines

17-11. General

All training incorporating the use of live mines will be conducted IAW DA PAM 385-63 and require a DZ.

17-12. Mine Clearing Line Charge (MICLIC).

a. Due to high exhaust temperature the MICLIC shall not be towed behind an M1 series Abrams Tank.

b. The M68 inert charge should not be fired more than three times as additional firings may result in breakage of charge blocks and erratic flight of the rocket. Misfire/dud line charges will be destroyed by EOD only after all misfire procedures have been performed by the firing unit.

c. If a training unit has certified EO personnel on staff capable of disposing of a live MICLIC which fails to function as designed and a training requirement to do so, they must request permission to perform this task (if required) from Range Operations at least 30 days in advance of their training. Fort Knox Range Operations will further coordinate with the installation's servicing EOD unit (currently 84th Ordnance from Fort Campbell) for permission.

d. Expended MICLIC rocket motors cannot be turned back into MASA, nor can they be left on the range. Units must coordinate with 84th Ordnance (Fort Campbell, KY EOD) at least 30 days in advance of their training event to arrange for an EOD team to dispose of all spent rocket motors prior to the unit receiving a clearance from the range. Range Operations can provide specific contact information.

Chapter 18 Live Fire Exercises

18-1. General

Live-fire exercises involve the participation of two or more combat arms and/or DOD services and are conducted to replicate maximum realism without compromising safety. All air and ground weapons utilized in conjunction with a CALFEX (Army)/CAX (Marine Corps) shall be used in accordance with current doctrine unless specifically prohibited by DA PAM 385-63 or this regulation. If safety or terrain limitations require unrealistic or artificial actions to be taken, OICs will brief all personnel, in detail, on why these altered actions are required and what the unit would do if confronted with a similar situation in combat.

18-2. Safety

a. The Exercise Commander will designate an RSO for each major weapon system. These RSOs shall have expert knowledge of the weapon systems and their capabilities, a thorough understanding and working knowledge of the exercise concept plan, should be experienced and display a high level of maturity. RSOs MUST participate in all rehearsals.

b. Emergency cease-fire signals will be pre-arranged and prepared for employment at all times.

c. The OIC must have full control over all activities on the range. If positive control is not maintained with all elements involved in the exercise, the entire exercise will be stopped immediately. Once positive control has been re-established with all elements the exercise may resume.

18-3. Live Fire Exercise Approval and Certification

a. Exercises incorporating non-organic weapons systems (i.e. artillery, rotary or fixed winged aircraft, etc.), in support of live fire and maneuver, at the platoon level or higher may require the unit to brief their Concept of Operation (CONOP) to the Fort Knox Senior Commander or their designated representative. Coordination of the briefing is a unit requirement. The RMA or his representative must be in attendance. At a minimum, briefings should be submitted to Range Operations no less than 90 days prior to execution and should include:

(1) Force structure and CONOP.

(2) SDZ and WDW diagrams.

(3) Any requested waivers or deviations (will be submitted no less than 180 days prior to the exercise).

(4) Verification that all individual gunners have fired and passed a qualification course for the weapon or system they will fire during the exercise.

b. Deliberate Risk Assessment Worksheet (DRAW) signed by the appropriate residual risk acceptance authority IAW FK Regulation 385-10 The Fort Knox Safety Program.

c. Live fire exercises must be approved at the appropriate level of command prior to execution.

(1) Squad/Crew level LFX will be approved by the company level command.

(2) Platoon level and all convoy LFX will be approved at the battalion level command.

(3) Company LFX can be approved by the brigade level command if it involves only those weapon systems organic to the unit.

d. Command certification of LFXs should include the following:

(1) Verification of successful completion of all preliminary weapons and maneuver training.

(2) Exercise walk through with OIC and RSO, participating leadership, and assistant RSOs.

(3) DRAW refinement.

18-4. OIC/RSO Requirements

a. OIC/RSO will meet the requirements of DA PAM 385-63 and chapter 3 of this regulation.

b. The OIC and RSO must be thoroughly familiar with DA PAM 385-63, this regulation, the scenario and safety plan for the exercise before conducting any CALFEX. The OIC for the exercise with organic weapons squad through company level must be an E7 or above. Exercise complexity and/or residual risk rating may require a higher grade for the OIC. For Battalion or larger exercises, the OIC must be a Field Grade Officer (see DA PAM 385-63 Table 1-1).

c. An exercise RSO (E-6 and above for squad through company level; E-7 or above for battalion or larger) will coordinate the efforts of all systems specific assistant RSOs.

d. A systems specific assistant RSO in the grade of E6 or above will be appointed for each

major weapons system involved in the exercise (i.e., tanks, artillery, mortar, infantry weapons systems, Strykers, Bradleys, etc.). The system specific assistant RSO will be range OIC/RSO qualified and certified by the commander on the weapons system he/she is to supervise.

18-5. Scheduling/Coordination

Because of the need for more in-depth analysis of the complexity of these events, units desiring to conduct a CALFEX must submit their CONOPs and land/training area requests a minimum of 90 days in advance to Range Operations. Procedures in Chapter 4 will otherwise apply.

18-6. Ammunition

- a. Field ammunition supply points will be coordinated through Range Operations 60 days in advance (submit list of DODICs and quantities).
- b. Ammunition will be stored and handled IAW Annex A.

Annex A

Arms, Ammunition, and Explosives (AA&E) Storage, Handling and Security

A-1. General

- a. Unit OIC and RSO will supervise the proper handling, storage, firing, and turning in of ammunition. Correct all mishandling and improper procedures involving ammunition as specified in the pertinent FMs/TMs.
- b. Explosives will be transported IAW DA PAM 385-64, AR 385-10 and AR 190-11.
- c. Blank and live ammunition of the same caliber must be separated by space (separate pallets) and time (do not open live until blank training is complete).
- d. Ammo Declaration Form (External units only).
 - (1) If a non-Fort Knox tenant unit has ammunition shipped to and drawn from the Muldraugh Ammunition Storage Area (MASA), the form is not required.
 - (2) If this same unit ships ammunition with the unit (bypassing MASA), the OIC must submit the form to the QASAS no less than 14 days prior to the scheduled training event.
- e. ALL unfired ammunition and recoverable residue will be returned to MASA – Do not open more than what is immediately needed to complete the exercise.

A-2. Ammunition Handling and Storage

- a. All ammunition will be handled IAW the procedures outlined in DA PAM 385-64 or the specific technical publications for the munitions with which the unit is training.
- b. Most live fire facilities have established ammunition storage/issue points on the range with an approved Explosive Safety Site Plan (ESSP). Units should plan to use these points to the maximum extent possible.
- c. Ammunition will be transported along authorized ammunition routes only IAW FK Reg 385-10, chapter 7.
- d. If the established ammunition storage/issue point(s) identified in a facility's ESSP does not meet the unit's training requirements, or if the unit training plan requires the establishment of a field ammunition storage point (ASP), the unit may submit an explosives license request to establish a temporary field ASP. This request must be submitted to Range Operations no less than 30 days prior to the desired occupation date and will contain the following information:
 - (1) Unit, POC information, and dates of storage.
 - (2) Desired field ASP Location (name of facility and/or 10-digit MGRS grid). Site selection must take into consideration the proximity of inhabited buildings, publicly traveled routes, and other sensitive structures.
 - (3) A complete listing of all munitions to be stored – by DODIC and quantity.
 - (4) Range Operations will prepare the explosives license request utilizing the most current version of the ArcGIS On Range Ammunition Handling (ORAH) tool of the Range Manager's Tool Kit (RMTK). The ORAH overlay, once signed by the QASAS and the installation Explosives Safety Manager, serves as temporary authorization to store ammunition at the site designated for the DODICs and quantities indicated.
- e. Standards for ASPs (whether established in ESSP or requested field level) are covered in AR 190-11, but at a minimum must contain:
 - (1) Perimeter barrier (i.e. concertina – memorandum required) is emplaced.
 - (2) Continuous surveillance (i.e. guard).
 - (3) Security lighting if available.
 - (4) Signs are posted designating the site as a Restricted Area.
 - (5) Access is denied to unauthorized personnel.
 - (6) Guards with positive means of communication (FM 38.90 or LMR RGCTRL1) to Range Ops.
 - (7) An inventory is conducted upon establishment of the site and every 24 hours

thereafter using DA form 3020-R (Magazine Data Card).

(8) All ammunition is stored, stacked by DODIC and LOT number on at least 3" of dunnage or on a pallet.

(9) A fire-resistant tarp (protection from weather and sunlight) is available to cover the ammunition.

A-3. Arms, Ammunition and Explosives Security

a. See AR 190-11 for definitions of Arms, Ammunition, and Explosives (AA&E) categories and any additional requirements.

b. All movements of Category I and II AA&E require armed guards regardless of the Force Protection Condition (i.e. missiles, rockets, grenades, high explosives, mines, C4, demo, etc.).

c. A guard who is armed is defined as one having a firearm and appropriate ammunition readily available for immediate use.

d. Category III and IV AA&E (i.e. small arms ammunition, fuzes, blasting caps, detonation cord, riot control agents, and all other ammunition) will be under the continuous positive control of designated, responsible personnel.

e. Any loss or theft of AA&E must be IMMEDIATELY reported to Fort Knox Range Operations by the most immediate means. ROFD will then further notify Fort Knox Military Police.

A-4. Fire Extinguisher Requirements

All Hazard Class/Division (HC/Div) 1.1, 1.2, 1.3 and 1.4 munitions require a minimum of 2ea 10BC (or more) fire extinguishers when stored/handled.

A-5. Amnesty/Ammunition Found On Post (AFOP)

a. AFOP describes all ammunition not considered small arms (above .50 caliber).

b. Report all range and training area complex AFOP incidents to the Range Operations firing desk.

c. Report all cantonment AFOP incidents to 911.

d. Ammunition amnesty describes all found small arms ammunition (.50 caliber and below).

(1) Items may be collected by the person who discovers it.

(2) No special handling or transportation requirements are necessary.

(3) An individual may call the QASAS or drop the items in an approved amnesty box located at various locations on the installation or call 624-6497 for further instructions.

A-6. Ammunition Malfunction Reporting

a. An ammunition malfunction is defined as any munition failing to function or perform as designed (assuming the weapon/delivery system is fully mission capable).

b. The OIC of training will report all ammunition malfunctions to the Range Operations firing desk immediately.

c. If an ammunition malfunction results in personnel injuries, ensure medical aid is provided and attempt to preserve site and all materials as much as possible.

d. The OIC will freeze the affected area and materials until cleared by Range Operations and/or inspected by the QASAS and/or the TACOM Logistics Assistance Representative (LAR).

e. Units are still responsible to officially report all ammunition malfunctions IAW published guidelines through their command channels.

Annex B

Medical Evacuation (MEDEVAC) Requirements, Planning and Procedures

B-1. Medical Requirements

- a. The minimum level of medical support required for any unit to conduct any kind of training on Fort Knox is a combat lifesaver (CLS) with CLS bag and a dedicated nonstandard evacuation vehicle. A nonstandard evacuation vehicle is any covered, litter capable vehicle dedicated to that purpose.
- b. TRADOC units will adhere to the medical guidelines established in TRADOC Circulars 350-6 Enlisted Initial Entry Training Policies and Administration and 350-70-1 Medical Support to Training for their specific training event.
- c. All other (non-TRADOC) units will provide medical support for their training event based upon their MACOM's guidance and/or the unit commander's DRAW.

B-2. MEDEVAC Planning

- a. Units training at Fort Knox will identify all means of medical evacuation for their given training location(s). Planning factors should include response times for self, ground and air evacuation to the nearest Medical Treatment Facility (MTF – see below for additional information).
- b. For unit self-evacuations from the western and southern portions of the training complex, the nearest emergency room is located at Baptist Health Hardin (BHH) Hospital. From Chaffee Gate, it is approximately 13.3 miles south on Highway 31W. The drive time is approximately 20 minutes. BHH Hospital is located at:
913 North Dixie Highway
Elizabethtown, KY 42701
EG 99109 74284 -37°42'38"N 85°52'32"W
- c. For unit self-evacuations from the northern portion of the training complex, the nearest emergency room is at U of L Health -South Hospital. From the Mt Eden Gate, it is approximately 12.7 miles east on Highway 44, then north on I65 to exit 121 (Brooks Road). The drive time is approximately 21 minutes. U of L Health -South Hospital is located at:
1903 West Hebron Lane
Shepherdsville, KY 40165
FH 14295 13404 - 38°03'42"N 85°41'49"W
- d. Wheeled ambulance service is available to all portions of the training complex from Fort Knox Directorate of Emergency Services (DES) or one of the mutual aid partners in one of the surrounding communities. Response times will vary based on the training location within the complex and the responding entity. Even if one of the mutual aid services responds, Fort Knox DES will also respond.
- e. Wheeled ambulances will transport to the most appropriate MTF. Usually, it will be the nearer of the two emergency rooms listed above but could include other hospitals located in Louisville. Units must confirm with the ambulance crew as to which MTF the patient is being evacuated to prior to departing the training site.
- f. Air ambulance support is provided by a civilian air ambulance company to all portions of the training complex. Response times vary, but historically have been approximately 20-25 minutes depending on location, weather, and other factors. Approximate flight time to the nearest Level 1 Advanced Trauma Life Support (ATLS) facility (University of Louisville Hospital - UofL) is approximately 15 minutes. UofL Hospital is located at:
530 S Jackson St
Louisville, KY 40202
FH 09941 34043 – 38°14'52"N 85°44'37"W

g. Air Ambulance support may be adversely affected by inclement weather. Range Operations will not know for certain if an air ambulance will respond or not until one is requested. Range Operations will relay aircraft status to the requestor, as well as its estimated time of arrival, as soon as it is available.

h. DES will simultaneously dispatch a wheeled ambulance with every request for an air ambulance – in case the aircraft cannot fly because of weather, is diverted for maintenance or other reasons, etc. Drive time and distance for a wheeled ambulance transporting a patient to UofL Hospital from Mt Eden Gate is approximately 26.6 miles/34 minutes; from Chaffee Gate is approximately 38.8 miles/41 minutes.

i. Prior to the conduct of any training event, OICs will identify a suitable air ambulance landing zone (LZ). A suitable LZ is defined as an area approximately 100' x 100' in size and free of obstructions. Additionally, OICs will have all necessary equipment on hand to mark the LZ for day and night operations (as applicable). Suitable markings include:

(1) Day: VS-17 panel, red smoke, etc.

(2) Night: White lights are preferred (i.e. headlights – especially identifying any obstacles), strobes, chemlights, etc. IR chemlights MAY be used as a LAST resort – civilian air ambulance pilots do have night vision capability – but this is NOT the preferred method of marking.

j. Ambulance exchange points (AXPs) have been established throughout the training complex and are listed below. These points allow for the transfer of patients from the unit to a Fort Knox Directorate of Emergency Services (DES) ambulance, enabling advanced treatment while enroute to a MTF.

k. Units are encouraged to rehearse ground evacuation routes prior to training.

l. If the OIC authorizes the use of the designated on-site medical evacuation vehicle to transport injured personnel from a training facility, all training will cease until the vehicle returns or similar assets are so designated.

B-3. MEDEVAC Procedures

a. The OIC (or senior person on site if not on an established facility) shall determine what type of MEDEVAC (self, ground or air) is required based on the advice of the senior medical personnel present and/or personal evaluation of the situation. General rule of thumb to determine if an air ambulance is required is to ascertain if the injury is life, limb, or eyesight threatening; if it is, an air ambulance is warranted.

b. If the MEDEVAC request originates on an established training area, range or facility, the OIC of training will immediately place their facility into a cease fire or cease training status.

c. All requests for MEDEVAC (ground or air) for injuries occurring in the Fort Knox range and training area complex will be directed to the Range Branch Firing Desk (via FM – 36.200, LMR – MEDEVAC, or telephone – 502-624-2125). Once contact is made with Range Operations, requestors should immediately identify the call (radio or telephone) as a MEDEVAC request to receive priority handling.

NOTE: DO NOT CALL 911 unless ALL means of contacting Range Operations have been exhausted. The FAA will not allow the aircraft (not even an air ambulance) to enter Fort Knox restricted use airspace until Range Operations has brought all ranges to a cease fire and cleared the airspace for their entry. Intentionally by-passing Range Operations will delay the response to the patient while these actions occur.

d. MEDEVAC requests (ground or air) shall be submitted to Range Operations using the standard 9-Line MEDEVAC request format. No portion of the request will be encrypted, nor will the request include the use of brevity codes. The complete report will be in “plain language” to minimize confusion – no unit-specific operational graphics.

(1) If the call is received at Range Operations via telephone, after gathering initial callback data, Range Operations Firing Desk will conduct a conference call between the

requestor and the 911 dispatcher, monitor the communications and render whatever assistance is required.

(2) If the call is received at Range Operations via radio (FM or LMR), the Range Operations Firing Desk will record the 9-Line MEDEVAC request data. In the event of an air ambulance request, the Firing Desk will request the air ambulance via the direct line, provide all the information regarding the patient(s), call the 911 dispatcher to inform them of the same and to report that an air ambulance has already been requested (or if it cannot respond – if known at that time).

NOTE: It is imperative the requestor stay in communication with Range Operations throughout the response until told to end the call by competent authority.

e. During a radio (LMR or FM) request for assistance, if not already on the MEDEVAC talk group or FM 36.200, the person in charge at the point of injury may be instructed to change frequencies/talk group to FM 36.200 or LMR talk group MEDEVAC.

f. OICs are responsible to secure weapons, ammunition, explosives and/or pyrotechnics belonging to the injured person prior to evacuation. Under no circumstances will these items be transported with the patient to the MTF.

g. OICs must notify Range Operations whenever emergency response elements (i.e. ambulance, helicopter, Fire Department, MP, etc.) arrive on site and depart.

h. After all injured personnel have been evacuated, the OIC will provide the following information via telephone to Range Operations: Patient(s) name, rank, age, and unit, what happened, how it happened, where it happened, and when it happened.

i. In the event of a unit self-evacuation, the Firing Desk will contact the receiving MTF emergency room to inform them of the inbound patient(s), a brief description of their reported injury/illness and an estimated time of arrival so they may be prepared to receive.

B-4. MEDEVAC Request Form

LINE	ITEM	INFORMATION
1	Location of Pickup Site	
2	Call Sign, Call Back No.	
3	No. of Patients by Precedence	
4	Special Equipment Required	
5	Number of Patients by Type	
6	No. and Type of Wound, Injury, or Illness	
7	Method of Marking Pickup Site	
8	Patient Nationality and Status	
9	Contamination	

LINE ITEM	EXPLANATION
1. Location of Pickup Site	Use name of AXP or provide grid coordinates if AXP is not used. A list of Fort Knox AXPs is available at Range Operations.
2. Call Sign, Call Back No.	Provide call sign of requesting individual via FM (or LMR) or landline. Or, provide call back number (in case of disconnect/add'l info is required).
3. No. of Patients by Precedence	Report only applicable information. Report number of AIR and WHEEL EVAC patients separately.
4. Special Equipment Required	Include only if necessary Hoist, Extraction equipment, Ventilator, Other (describe).
5. Number of Patients by Type	Report only applicable information. Report number of Litter patients and number of Ambulatory patients.
6. No. and Type of Wound, Injury, or Illness	Specific information regarding patient wounds by type. Report serious bleeding, along with patient blood type, if known.
7. Method of Marking Pickup Site	- Panels, Smoke, Lights, Other (describe).
8. Patient Nationality and Status	- US military, US civilian, Non-US mil, Non-US civilian
9. Contamination	Report any POL or other hazardous material on site or on the patient(s) If NONE, so state

Priority I - URGENT is assigned to emergency cases that should be evacuated as soon as possible and within a maximum of 1 hour in order to save life, limb, or eyesight, to prevent complications of serious illness, or to avoid permanent disability. The use of AIR MEDEVAC is suggested for any injury meeting these criteria, however, the decision to request this service lies with the medical or senior personnel on site.

Priority II - PRIORITY is assigned to sick and wounded personnel requiring prompt medical care. This precedence is used when the individual should be evacuated before their medical condition could deteriorate to such a degree that they will become an URGENT precedence, or whose requirements for special treatment are not available locally, or who will suffer

unnecessary pain or disability. The use of WHEELED MEDEVAC is suggested for any injury meeting these criteria, however, the decision to request this service lies with the medical or senior personnel on site.

B-5. Ambulance Exchange Points

Name	MGRS	LAT	LON
313	FG 01232 85077	37° 48' 26.900" N	85° 51' 00.001" W
Anderson	FH 00144 04780	37° 59' 06.509" N	85° 51' 34.637" W
Baker	EG 92212 99588	37° 56' 21.103" N	85° 57' 02.152" W
Carpenter	EH 88043 00544	37° 56' 53.607" N	85° 59' 52.507" W
CP 37	EG 84395 94541	37° 53' 40.103" N	86° 02' 24.493" W
CP 38	EG 86261 95885	37° 54' 23.075" N	86° 01' 07.522" W
Eubanks	EG 96367 87422	37° 49' 44.871" N	85° 54' 17.803" W
Mt. Eden Base Camp	FH 04254 04733	37° 59' 3.316" N	85° 48' 46.207" W
Porter	EG 96148 96311	37° 54' 33.325" N	85° 54' 22.499" W
Salt	EH 94500 05085	37° 59' 18.584" N	85° 55' 25.828" W
Saunders	EG 94576 91073	37° 51' 43.398" N	85° 54' 25.012" W
St. Vith	EG 99145 87337	37° 49' 41.042" N	85° 52' 24.222" W
Tobacco Leaf	EG 89598 92386	37° 52' 28.399" N	85° 58' 52.453" W
West Point	EH 91085 04637	37° 59' 05.309" N	85° 57' 46.014" W
Yano	FG 09182 86193	37° 48' 59.802" N	85° 45' 34.338" W

Annex C
Aviation Checkpoints (ACP)

ACP	EL (ft)	Location		Description
ACP 1	692	N 37° 49' 11.56"	W 086° 00' 44.19"	Hwy 144 Road Intersection
ACP 2	574	N 37° 53' 02.56"	W 086° 00' 49.80"	Otter Creek Airstrip
ACP 3	767	N 37° 55' 26.22"	W 085° 56' 49.09"	Brave Rifles & Wilson Road
ACP 4	692	N 37° 56' 10.96"	W 086° 00' 40.32"	Road Intersection
ACP 5	459	N 37° 57' 19.74"	W 086° 02' 13.18"	River Bend & Railroad
ACP 6	442	N 37° 58' 57.87"	W 085° 58' 14.20"	West Point Airstrip
ACP 7	419	N 37° 59' 32.16"	W 085° 55' 19.44"	Road & River Intersection
ACP 8	439	N 38° 00' 29.09"	W 085° 51' 27.27"	Road in Valley
ACP 9	859	N 37° 58' 51.06"	W 085° 49' 02.08"	Road Intersection Mt Eden
ACP 10	429	N 37° 59' 44.92"	W 085° 44' 21.25"	River Bend & Lake
ACP 11	452	N 37° 55' 59.61"	W 085° 45' 23.76"	Beech Grove Rd Intersection
ACP 12	465	N 37° 53' 11.08"	W 085° 44' 30.42"	Hwy 251 Road Intersection
ACP 13	442	N 37° 48' 15.39"	W 085° 44' 51.10"	1-65 & 313 Loop
ACP 14	820	N 37° 46' 53.20"	W 085° 51' 23.67"	Hwys 313 & 251 Intersection
ACP 15	800	N 37° 47' 43.23"	W 085° 54' 55.07"	31W & Hwy 313 Intersection
ACP 16	659	N 37° 49' 28.31"	W 085° 53' 17.16"	Douglas Lake
ACP 17	583	N 37° 51' 38.97"	W 085° 55' 40.26"	Road & Saunders Lake
ACP 18	469	N 37° 54' 32.14"	W 085° 54' 23.98"	Road Intersection
ACP 19	416	N 37° 56' 50.95"	W 085° 51' 41.36"	Road & River Intersection

Annex D

Fire Threat

Live Fire Munitions		GREEN	AMBER	RED*	BLACK**
SMALL ARMS (up to 30mm)	inert w/o tracer (ball)	YES	YES	YES	YES
	w/tracer	YES	YES	NO+	NO
ROCKETS / GUIDED MISSILES	Inert w/o tracer	YES	YES	YES	YES
	Inert w/tracer or HE	YES	YES	NO	NO
TANK / FIGHTING VEHICLES	Inert w/o tracer	YES	YES	YES	YES
	Inert w/tracer or HE	YES	YES	YES	NO
MORTARS / ARTILLERY	HE / FRP / FRTR	YES	YES	YES	NO
	ILLUM / WP	YES	YES	NO	NO
DEMOLITIONS		YES	YES	YES	CLEARED SURFACE
GRENADES and GRENADE LAUNCHERS		YES	YES	TP ONLY	TP ONLY

PYROTECHNICS / OTHER		GREEN	AMBER	RED	BLACK
AERIAL	Training Area	YES	NO++	NO	NO
	Impact Area	YES	YES	NO	NO
SURFACE	Training Area	YES	CLEARED SURFACE	PREPARED CONTAINER	PREPARED CONTAINER
	Impact Area	YES	YES	CLEARED SURFACE	PREPARED CONTAINER
BATTLEFIELD EFFECTS SIMULATORS	Training Area	YES	YES	CLEARED SURFACE	NO
	Impact Area	YES	YES	YES	NO
BLANKS (all calibers)		YES	YES	YES	NO
NON-LETHAL WEAPONS		YES	YES	YES	YES

* Fire threat conditions must be addressed in the Commander's Deliberate Risk Assessment.

** All training will be reviewed by Installation Range Management Authority ICW Fire Department on a case-by-case basis.

+ MASA will exchange unopened 4 and 1 for straight ball ammunition (must coordinate. No de-linking)

++ Aerial pyrotechnics restricted

Annex E
Low Water Crossings (LWC)

LWC Site ID	Crossing Site Name	Location (MGRS)	Width (ft)	Length (ft)	Water Depth	Composition	Flood Potential Risk Hazard	Hazard Level
1	TA17	FG 02059996	5	9	0	Flexmat	LOW	IV B
2	TA04	EG 97788617	9	26	1ft	Natural	MODERATE	III B
3	TA10	EG 85309685	5.7	75	0	Concrete	LOW	IV B
4	TA09-1	EG 86899300	5.7	75	0	Concrete	LOW	IV D
5	TA09-2	EG 87829198	5.7	75	0	Concrete	LOW	IV B
6	TA08-1	EG 87989254	5	30	0	Natural	LOW	IV D
7	Baum	EG 98298803	5	30	1ft	Concrete	MODERATE	III B
8	TA05	EG 97358858	10	30	1ft	Natural	MODERATE	III B
9	St Vith	EG 98858798	5	30	0	Concrete	LOW	IV B
10	Cedar Creek-1	FG 02938692	6	38	4in	Concrete	LOW	IV D
11	Cedar Creek-2	FG 02798761	6	42	6in	BR Concrete	MODERATE	III B
12	Cedar Creek-3	FG 02668792	6	60	4in	BR Concrete	LOW	IV D
13	Cedar Creek-4	FG 02408950	5	20	1ft	BR Concrete	MODERATE	III B
14	Cedar Creek-5	FG 02408982	5	25	1ft	BR Concrete	MODERATE	III B
15	Cedar Creek-6	FG 02808990	4.5	15	1ft	Concrete	LOW	IV D
16	Dempsey TR	EG 96699004	5	8	1ft	Concrete mat	MODERATE	III B
17	TA14	EH 91010051	4.5	9.5	0	Culvert	LOW	IV D
19	TA06-1	EG 95118926	4.8	8.3	0	Flexmat	LOW	IV D
20	TA06-2	EG 94878901	4.2	9.1	0	Flexmat	LOW	IV D
21	TA06-3	EG 94939014	4.8	8.8	2in	Gravel	LOW	IV D
22	TA05-1	EG 96238974	4.2	5.4	0	Natural	LOW	IV D
23	TA05-2	EG 95928945	6.4	10.69	0	Natural	LOW	IV D
24	TA08-2	EG 88659188	5.1	18	0	Concrete mat	MODERATE	III B

Markings are present at each Low Water Crossing

Total Hazard Level: RAC IAW DA PAM 385-30 and ATP 5-19

Annex F Suggested Facilities for Training

Weapon System	Training Event	TC 25-8 Primary Range	KNOX Primary Facility	KNOX Alternate Facility	TC 25-8 Alternate Range	KNOX Alternate Range
M16/M4 Series	Zero	25m range	Canby Hill	Clark, Handiboe, Finnegan	ARF/MRF with 25m boots	Pells, Wood
	Sustainment/Record	ARF/MRF	Pells	Wood		
	Night	ARF/MRF	Pells	Wood	EST 2000	None
	CBRN Conditions	ARF/MRF	Pells	Wood	EST 2000	None
	Squad-Designated Marksman Certification	KD Range	Scott Mountain	Longstreet	MPMG	Heins QTR
	Short-Range Marksmanship	Basic 10m/25m firing range	Brown	Canby Hill, Clark, Handiboe, Finnegan	ARF/MRF with 25m boots	Pells, Wood
	Squad/Platoon ARTEP LFX	ISBC/IPBC	Kennedy, Cedar Creek	None	MPTR/MPRC	St Vith, Wilcox, Donnelly, MFO, Boydston, Yano
9MM	Instructional/Qualification Fire	CPQC	Fraser	Heins	Basic 10m/25m Firing Range (APQC**)	Canby Hill, Clark, Handiboe, Finnegan
	CBRN Conditions	CPQC	Fraser	Heins	EST 2000*	None
	Night	CPQC	Fraser	Heins	EST 2000*	None
	Military Police Qualification	MPFQC/CPQC	Fraser	Heins	Basic 10m/25m Firing Range	Lee Pistol
M21 and M24	Zero	Sniper Field Fire/KD Range	Scott Mountain	Boydston	MPMG	Heins QTR
	Qualification	Sniper Field Fire	Scott Mountain	Boydston	MPMG	Heins QTR
	Night Fire	Sniper Field Fire	Scott Mountain	Boydston	MPMG	Heins QTR
	Squad/Platoon ARTEP LFX	ISBC/IPBC	Kennedy, Cedar Creek	None	MPTR/MPRC	St Vith, Wilcox, Donnelly, MFO, Steeles, Boydston, Yano
	CALFEX/STX	MPRC	Yano	None	None	None
M107	Zero	Heavy Sniper Range	Wilcox	None	KD/MPMG	Scott Mountain; Heins
	Qualification	Heavy Sniper Range	Wilcox	None	MPTR	St Vith, Baum, Steeles
	Squad/Platoon ARTEP LFX	ISBC/IPBC	Kennedy, Cedar Creek	None	MPTR/MPRC	St Vith, Wilcox, Donnelly, MFO, Steeles, Boydston, Yano
	CALFEX/STX	MPRC	Yano	None	None	None
M249 SAW M240B/M60	10m Practice/Record	MPMG	Longstreet	Baum; Crane	Basic 10/25m Zero	Handiboe Range
	Tables II and III	MPMG	Heins QTR	None	None	None
	Squad/Platoon ARTEP LFX	ISBC/IPBC	Kennedy, Cedar Creek	None	MPTR/MPRC	St Vith, Wilcox, Donnelly, MFO, Steeles, Boydston, Yano
	CALFEX	MPRC	Yano	None	None	None
M2	10m Practice	Basic 10/25m Zero	Heins	Baum	MPMG	Heins QTR
	Tables I-IV	MPMG	Heins	Baum	None	None
	Table V	MPTR	St Vith	Wilcox	MPRC	Yano
	Squad/Platoon ARTEP LFX	ISBC/IPBC	Kennedy, Cedar Creek	None	MPTR/MPRC	St Vith, Wilcox, Donnelly, MFO, Steeles, Boydston, Yano
	CALFEX	MPRC	Yano	None	None	None
M203	Instructional/Qualification	Grenade Launcher	FBI	Mill Creek 203, Heins HE	None	None
	HE Live Fire	Grenade Launcher	Hackett	Heins HE	None	None
	Squad/Platoon ARTEP LFX	ISBC/IPBC	Kennedy, Cedar Creek	None	MPTR/MPRC	St Vith, Wilcox, Donnelly, MFO, Steeles, Boydston, Yano
	CALFEX	MPRC	Yano	None	None	None

Weapon System	Training Event	TC 25-8 Primary Range	KNOX Primary Facility	KNOX Alternate Facility	TC 25-8 Alternate Range	KNOX Alternate Range
Hand Grenade	Instructional	Distance and Accuracy course (non TC 25-8 range)	Christensen Practice	None	HG Qualification Course	Christensen Qualification
	Qualification	HG Qualification Course	Christensen Qualification	None	None	None
	Live-Grenade Throw	HG Familiarization	Christensen	None	None	None
MK-19	Practice/Record Fire	MPMG	Heins	Hackett	MPTR	St Vith, Wilcox
	CBRN Conditions	MPMG	Heins	Hackett	MPTR	St Vith, Wilcox
	Night Fire	MPMG	Heins	Hackett	MPTR	St Vith, Wilcox
	HE	HE dud Impact Range	Hackett	None	None	None
	LFX	MPTR	St Vith	Wilcox	MPRC	Yano
	CALFEX	MPRC	Yano	None	None	None
Mortars(60mm, 81mm & 120mm)	Crew/Section/Platoon Training	Mortar (60mm)	Hackett	OP 10/12	None	None
		Mortar (81mm)	FPs in TA3	FPs in TA2	None	None
	Evaluated ARTEP	Mortar (120mm)	FPs in TA2	FPs in TA3	None	None
		Mortar (60mm)	Hackett	Heins HE, OP 10/12	None	None
		Mortar (81mm)	FPs in TA3	FPs in TA2	None	None
		Mortar (120mm)	FPs in TA2	FPs in TA3	None	None
	CALFEX	DMPRC/MPRC/BAX	Yano	None	Mortar	None
Artillery (Self-Propelled & Towed)	Table IV	HE Firing Range	Hackett	OP12/13	None	None
	Table VII and VIII	Field Artillery Indirect Range	FPs in TA2/TA3	None	None	None
M1-Series	CALFEX	DMPRC/MPRC/BAX	Yano	None	Field Artillery Indirect Range	FPs in TA2/TA3
	Table II (CPC)	SGR/DMPTR/MPTR	Wilcox	St Vith	MPRC/DMPRC/LTA	Yano
	Screening/Zero	Boresight, Screening, and Harmonization Range (BSH)	Wilcox	St Vith	DMPTR/MPTR/DMPRC/MPRC/BAX	Yano
	Table III-VI	DMPTR/MPTR	Wilcox	St Vith	DMPRC/MPRC/DAGIR	Yano
	Table VII -IX	DAGIR/DMPRC/MPRC	Yano	None	DMPTR/MPTR	Wilcox
	Table X-XII	DMPRC/MPRC	Yano	None	None	None
	CALFEX	DMPRC/MPRC	Yano	None	DAGIR	None
Bradley Fighting Vehicle	Table II (CPC)	DMPTR/MPTR/SGR	Wilcox	St Vith	DMPRC/MPRC/LTA	Yano
	Boresight/Zero	Boresight, Screening, and Harmonization Range (BSH)	Wilcox	St Vith	DMPTR/MPTR	None
	Tables III-VI	DMPTR/MPTR	Wilcox	St Vith	DMPRC/MPRC/DAGIR	Yano
	Infantry Squad Combat Exercise	ISBC/IPBC/BAX	Kennedy, Cedar Creek	None	MPTR/MPRC	St Vith, Wilcox, Donnelly, MFO, Steeles, Boydston, Yano
	Tables VII-IX	MPRC/DMPRC	Yano	None	DMPTR/MPTR/DAGIR	Wilcox
	Tables X-XII	MPRC/DMPRC	Yano	None	DAGIR	None
	CALFEX	MPRC/DMPRC	Yano	None	DAGIR	None
Stryker (all variants minus MGS)	Crew Practice	BAX/DMPTR/MPTR	Wilcox	St Vith	DMPRC/MPRC/DAGIR	Yano
	Squad Live Fire Exercise	ISBC	Kennedy	None	IPBC	Cedar Creek
	Crew Qualification	BAX/DMPTR/MPTR	Wilcox	St Vith	DMPRC/MPRC	Yano
	Platoon Practice	BAX	None	None	DMPRC/MPRC/LTA	Yano
	Platoon Qualification	BAX	None	None	DMPRC/MPRC	Yano
	CALFEX	BAX	None	None	DMPRC/MPRC	Yano

Weapon System	Training Event	TC 25-8 Primary Range	KNOX Primary Facility	KNOX Alternate Facility	TC 25-8 Alternate Range	KNOX Alternate Range
MGS	Table IV (CPC)	SGR/LTA	None	None	BAX/DMPTR/MPTR	Wilcox, St Vith
	Tables V-VIII	BAX	None	None	DMPTR/MPTR	Wilcox, St Vith
	Tables IX-X	BAX	None	None	DMPTR/MPRC	Wilcox, Yano
	CALFEX	BAX	None	None	DMPTR/MPRC	Wilcox, Yano
AH64D/AH64A Apache	Table I	DMPTR/LCT/CMS*	Wilcox	None	DMPTR/MPTR	St Vith
	Table II	DMPTR/LCT/CMS*	Wilcox	None	DMPTR/MPTR	St Vith
	Table VI**	DAGIR/AGR	Yano	None	DMPTR/MPTR/BSH***	Wilcox
	Tables VII and VIII	DAGIR/AGR	Yano	None	DMPRC/MPRC/DMPTR/MPTR	Wilcox
	Tables IX and X	DAGIR/AGR	Yano	None	DMPRC/MPRC	None
	Tables XI and XII	DAGIR/AGR	Yano	None	DMPRC	None
OH58D Kiowa Warrior	Tables I & II	DAGIR	Yano	None	MPTR	St Vith
	Tables III & IV	DAGIR/AGR	Yano	None	DMPTR/MPTR	Wilcox, St Vith
	Tables VI-VIII	DAGIR/AGR	Yano	None	DMPRC/MPRC/DMPTR/MPTR	Wilcox, St Vith
	Tables IX-X	DAGIR/AGR	Yano	None	DMPRC/MPRC	None
	Tables XI and XII	DAGIR/AGR	Yano	None	DMPRC	None
Door Gunnery (M60D/M240H)	Table I-IV	DAGIR	Yano	None	DMPTR/MPRC/DMPTR/MPTR	Wilcox, St Vith
	Table VIII	DAGIR/AGR	Yano	None	DMPRC/MPRC	None
	Table IX (Miles)	DAGIR/AGR	Yano	None	DMPRC/MPRC	None
	Table X	DAGIR/AGR	Yano	None	DMPRC/MPRC	None

Annex G **Officer-In-Charge (OIC) and Range Safety Officer (RSO) Card**

Fort Knox Range and Training Area Complex



OIC/RSO RANGE CERTIFICATION CARD

FORT KNOX RANGE OPERATIONS/FIRING DESK
Voice/Fax — (502)624-2125/2195 FM — 38.900 LMR — RGCTRL1 VHF — 136.075

TIPS FOR SUCCESS

- o OIC/RSO Duties are specified in AR 385-63 (Range Safety)
- o <https://safety.army.mil/> “On-Duty” “Range and Weapons Safety Toolbox”
- o **SIGN ON TO A FACILITY:** Have this card; a copy of your Request Summary; go to the facility; call Range Operations Firing Desk (see above) and request sign-on.
- o **AIR/WHEELED AMBULANCE REQUEST:** Standard 9 Line Format; **DO NOT CALL 911** from the Range and Training Area Complex—call Range Operations Firing Desk (see above)
- o Make sure the ammunition you intend to shoot (by DODIC) is listed on your request summary. If it’s not there, you will NOT be allowed to fire it!

Front

CARD	EXPIRES:		
NAME: _____			
RANK: _____ UNIT: _____			
I have received and will comply with the DPTMS Range Branch Certification briefing. Prior to serving as an OIC or RSO, I must be command certified IAW FK Reg 385-22.			
SIGNATURE: _____			
I certify the individual identified above is qualified to serve in the capacity/position(s) identified below and for the weapons system(s) and/or training indicated.			
Type RG/TA	Capacity	Certifying Official Name / Rank	Signature

Back

Annex H Sign On and Clearance Form

Training Complex Facility Sign On

FACILITY _____ USING UNIT _____ DATE _____

1. Scheduled Sign On time _____ Sign On Time and Initials _____ / _____
2. Range Flag received by: _____
3. Unit representative requesting Sign On must have a valid FK Form 1769 (OIC/RSO Range Certification Card) and the current RFMSS Request Summary. Missing either document constitutes an "Unprepared to Sign On" and the unit will not be allowed to occupy the facility.
4. The OIC must have the following items/personnel/equipment on site prior to requesting any kind of a training status:

- Certified RSO with valid FK Form 1769
- FM/LMR Communications
- Event and Daily Risk Assessment signed by appropriate level of command
- FK Reg 385-22
- DA Pam 385-63
- all applicable weapons manuals
- Fort Knox map -Functional compass
- CLS w/CLS bag minimum
- and a dedicated, covered litter-capable evacuation vehicle with driver
- all applicable memos, i.e. co-use, digging, concertina wire, grey water

OIC Initials _____

5. In the event a unit occupies a range, training area or facility prior to sign on, the unit accepts the site 'As Is' and is responsible to clear the entire facility.
6. During use of a facility, the using unit may be required to provide a troop detail to assist the Range Technician in performing facility maintenance per FK Reg 385-22.

7. **A DETAILED CLEARANCE CHECKLIST is provided on the reverse of this form.**

The unit must accomplish all items **prior** to calling Range Operations to request a clearance inspection. Courtesy inspections are not provided. **OIC initials** _____

8. The Range Technician will brief the OIC of the following:

GENERAL

Facility Layout	_____	FM Communications with Range Ops (38.90)(38.80)	Range
Vehicle Access	_____	Training	Status:
Occupied/Training/Firing/Guard/Closing	_____	Accident/Incident Reporting	_____
POVs (no more than 3, must have passes			
Vehicle Control - facility/roads	_____	No digging/tree cutting/wire barriers w/o approved memo	_____
Nearest AXP location	_____	Ammo storage: 3"-6" off the ground/covered	_____
Pyro/blank restrictions memo	_____	Two fire extinguishers, smoking restrictions	_____
No open fires policy	_____	Foxhole, trench, sump restrictions	_____

RANGES/FIRING POINTS

Use of Red Flag	_____	Scheduled Shutdowns Target maintenance times	_____
Target location and use	_____	Demolition Charges - per DZ	_____
Limits of Fire	_____	Night firing light requirements	_____
Troop Crossing Signs	_____	Weapon System clearing - per weapons manual	_____
Guards and gates	_____	Multi-day use - facility lockup/unlock	_____
Impact Area access	_____		_____

Printed Name/Rank/Unit _____
 Date/Time/Signature _____
 Range Technician Signature _____
 RT Call Sign _____

REMARKS

Training Complex Facility Clearance

Facility _____ Unit _____ Date _____

Unit Representative _____ Time/Initials _____ / _____

GENERAL

	Go	No Go
Area policed - all trash removed from facility	_____	_____
All wire (concertina or other) removed	_____	_____
Hard stand latrine - cleaned, toilet paper removed	_____	_____
All buildings/towers swept out and mopped	_____	_____
Range equipment present (flag, safety paddles and rods, etc.)	_____	_____
Warming barrels emptied and ash pits policed of trash, wire and logs	_____	_____
All POL spills reported to Range Operations/cleared IAW FK Environmental Handbook	_____	_____
Excessive mud/dirt/debris removed from roads and concrete pads	_____	_____
Area policed of pyro residue and brass	_____	_____
UXOs marked and reported to Range Operations	_____	_____
All foxholes, trenches, sumps and fighting positions filled in and mounded	_____	_____
All fighting position concealment debris un-piled and scattered	_____	_____

RANGES/FIRING POINTS

	Go	No Go
Firing points or lanes policed of all trash, brass, links, etc.	_____	_____
Police impact area and all target bunkers (trash and debris)	_____	_____
All range issued target lifters w/accessories removed from range	_____	_____
Remove debris from down range road	_____	_____
Small arms cardboard silhouettes free of targets, tape and staples	_____	_____
Canvas and wood target frames free of targets, tape and staples	_____	_____
Misfire pits checked and cleared	_____	_____
Excessive mud/dirt debris removed from all firing lanes and target positions	_____	_____
Excessive mud/dirt debris removed from ammo pads and walkways	_____	_____
Tank range service roads, graveled lanes, and firing positions dragged as needed	_____	_____

NOTE: UNIT MAY BE REQUIRED TO PROVIDE TACTICAL VEHICLE(S) TO FACILITATE TRAINING AREA CLEARANCE INSPECTIONS

Other clearance requirement/remarks:

I have fully inspected this facility and cleared the unit:

RT - Printed Name, Signature and Call Sign

Annex I

Physical Readiness Activities

I-1. General.

This annex identifies the requirements to conduct physical readiness activities (specifically running, cycling, and ruck marching), when conducted for non- recreational purposes, within certain portions of the RTA complex. This annex is intended to complement the USACC Commanding General's Policy Memorandum 32 which may be found in its entirety at: <https://home.army.mil/knox/index.php/about/Garrison/directorate-human-resources/administrative-services-division/fort-knox-policies>

I-2. Applicability.

This annex applies to military personnel because of the prerequisite for all participants to receive a safety briefing from their commander prior to conducting any authorized activity in the RTA complex listed above.

I-3. Routes.

a. There are three specific routes within the RTA complex designated to support these activities. A fourth route (Green Route) denotes all roadways within cantonment and is not subject to the same requirements as are the other three. A map of the routes is available at the link above.

(1) Yellow Route: Magazine and 484th Engineer Roads.

(2) Red Route: Main Range Road north to the Salt River Bridge (south side).

(3) Orange Route: 7th Armored Division Cutoff and Poorman Range Roads.

b. These routes are available year-round (weather and road conditions permitting) and are open daily from official sunrise (but no earlier than 0530) until 1000 in the mornings and from 1630 until official sunset or 2000 (whichever is earlier) in the afternoons/evenings.

c. Participants must be aware military wheeled and tracked vehicle utilize these routes. This traffic includes ammunition and fuel movements to/from ranges, training areas, road marches, etc. Military vehicles will have priority on all routes within the RTA complex.

I-4. Safety Briefing.

Prior to the conduct of any authorized readiness activity in the RTA complex identified above, participant's must receive a safety briefing from their unit's commander. Besides the hazards associated with the authorized readiness activity, this briefing will also include:

a. Participants:

(1) Solo participants are not authorized on the Yellow, Red, or Orange routes. The minimum number of participants in a party for any authorized readiness activity is two (no single riders/runners/ruck marchers).

(2) Participants are not permitted to wear earphones or like devices that may impair their ability to hear hazards.

(3) All participants must be in possession of a military identification card and will comply with instructions from game wardens and range staff when asked to produce this identification as well as unit of assignment.

b. Routes.

(1) All routes (as described above) are restricted to paved surfaces only and do not leave the main roadway at any point. Dirt/gravel trails, training areas and ranges are off limits.

(2) Portions of these routes are adjacent to live fire ranges where noise and overpressure hazards may be present. Single hearing protection may be required when passing these facilities.

(3) Routes are closed during periods of inclement weather. Participants are required to

check with Godman weather at (502) 624-5517 or the Fort Knox Weather website https://home.army.mil/knox/index.php/download_file/view/1574/780 for the current weather forecast prior to executing any authorized readiness activity within the RTA complex.

c. Uniform and Equipment:

(1) All participants will wear some sort of high visibility attire (clothing/reflective device/vest/etc.).

(2) All cyclists will wear an approved safety helmet.

(3) Eye protection is highly recommended.

(4) Each party must have at least one cell phone with a full charge at the start of the event. Participants are reminded that cellular phone reception may be poor or non-existent in some portions of the RTA complex.

(5) Riding parties are encouraged to have some sort of bicycle repair kit as well as a first aid kit.

d. Cyclists will comply with all Kentucky traffic laws and regulations (including posted road signs) and will ride single file to the far-right side of the paved surface. Runners and ruck marchers will move against traffic in single file to the far-left side of the paved surface.

Appendix A

References

AR 190-11

PHYSICAL SECURITY OF ARMS, AMMUNITION, AND EXPLOSIVES

AR 190-51

SECURITY OF UNCLASSIFIED ARMY RESOURCES (SENSITIVE AND NONSENSITIVE)

AR 200-1

ENVIRONMENTAL PROTECTION AND ENHANCEMENT

AR 350-19

THE ARMY SUSTAINABLE RANGE PROGRAM

AR 385-10

THE ARMY SAFETY PROGRAM

AR 385-63

RANGE SAFETY

AR 40-5

PREVENTIVE MEDICINE

AR 75-1

MALFUNCTIONS INVOLVING AMMUNITION AND EXPLOSIVES

AR 75-15

POLICY FOR EXPLOSIVE ORDNANCE DISPOSAL

AR 95-1

FLIGHT REGULATIONS

AR 95-2

AIR TRAFFIC CONTROL, AIRFIELD/HELIPORT, AND AIRSPACE OPERATIONS

AR 95-27

OPERATIONAL PROCEDURES FOR AIRCRAFT CARRYING HAZARDOUS MATERIALS

ATP 3-09.50

THE FIELD ARTILLERY CANNON BATTERY

ATP 3-09.60

TECHNIQUES FOR MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) AND HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS) OPERATIONS

ATP 3-18.11

SPECIAL FORCES MILITARY FREE-FALL OPERATIONS

ATP 3-18.12

SPECIAL FORCES WATERBORNE OPERATIONS

ATP 3-34.20
COUNTERING EXPLOSIVE HAZARDS

ATP 3-37.34
SURVIVABILITY OPERATIONS

ATP 5-19
RISK MANAGEMENT

DA PAM 385-24
THE ARMY RADIATION SAFETY PROGRAM

DA PAM 385-40
ARMY ACCIDENT INVESTIGATIONS AND REPORTING

DA Pam 385-63
RANGE SAFETY

DA Pam 385-64
AMMUNITION AND EXPLOSIVES SAFETY STANDARDS

DA Pam 40-501
ARMY HEARING PROGRAM

FK Reg 385-10
INSTALLATION SAFETY PROGRAM

FK Reg 385-22
FORT KNOX RANGE REGULATION

FK Reg 95-1
AVIATION LOCAL FLIGHT RULES

FK Reg 95-23
UAS FLIGHT RULES

FM 3-20.21
HEAVY BRIGADE COMBAT TEAM (HBCT) GUNNERY

TB 3-1365-490-10
SMOKE POT, HC, 10-LB., M1 AND 30-LB., ABC-M5; SMOKE POT, FLOATING, HC, M4A2; SGF2, AN-M7A1; AND SMOKE POT, FLOATING, MK7MOD0 AND SMOKE POG, FLOATING, SCREENING, TA, PRACTICE, M8

TB 9-1300-385
MUNITIONS RESTRICTED OR SUSPENDED

TB 9-1310-251-10
OPERATOR'S MANUAL FOR RANGE CLEARING PROCEDURES FOR CARTRIDGE 40MM:
TP, M918

TB MED 524

OCCUPATIONAL AND ENVIRONMENTAL HEALTH: CONTROL OF HAZARDS TO HEALTH FROM LASER RADIATION

TC 18-11

SPECIAL FORCES MILITARY FREE-FALL AND DOUBLE-BAG STATIC LINE OPERATIONS

TC 21-24

RAPPELLING

TC 25-1

TRAINING LAND

TC 25-8

TRAINING RANGES

TC 3-04.3

AVIATION GUNNERY

TC 3-09.81

FIELD ARTILLERY MANUAL CANNON GUNNERY

TC 3-21.220

STATIC LINE PARACHUTING TECHNIQUES AND TRAINING

TC 3-21.75

THE WARRIOR ETHOS AND SOLDIER COMBAT SKILLS

TC 3-22.19

GRENADE MACHINE GUN, MK 19 MOD 3

TC 3-22.23

M18A1 CLAYMORE MUNITION

TC 3-22.240

MEDIUM MACHINE GUN

TC 3-22.249

LIGHT MACHINE GUN, M249 SERIES

TC 3-22.50

HEAVY MACHINE GUN, M2 SERIES

TC 3-23.30

GRENADES AND PYROTECHNIC SIGNALS

TC 3-25.26

MAP READING AND LAND NAVIGATION

TC 4-02.1

FIRST AID

TM 3-34.82
EXPLOSIVES AND DEMOLITIONS

TM 43-0001-27
ARMY AMMUNITION DATA SHEETS FOR SMALL CALIBER AMMUNITION

TM 43-0001-28
ARMY AMMUNITION DATA SHEETS FOR ARTILLERY AMMUNITION: GUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS AND ARTILLERY FUZES

TM 43-0001-29
ARMY AMMUNITION DATA SHEETS FOR GRENADES

TM 43-0001-30
ARMY AMMUNITION DATA SHEETS FOR ROCKETS SYSTEMS ROCKET FUZES ROCKET MOTORS

TM 43-0001-36
ARMY AMMUNITION DATA SHEETS FOR LAND MINES

TM 43-0001-37
ARMY AMMUNITION DATA SHEETS FOR MILITARY PYROTECHNICS

TM 43-0001-38
ARMY AMMUNITION DATA SHEETS FOR DEMOLITION MATERIALS

TM 9-1300-200
AMMUNITION, GENERAL

TM 9-1330-200-34
MAINTENANCE MANUAL DIRECT SUPPORT AND GENERAL SUPPORT FOR GRENADES

TM 9-1345-203-12
OPERATOR'S AND UNIT MAINTENANCE MANUAL FOR LAND MINES

TM 9-1370-207-10
OPERATOR'S MANUAL FOR PYROTECHNIC SIMULATORS

TM 9-1375-213-12
OPERATOR'S AND UNIT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST): DEMOLITION MATERIALS

Appendix B

Glossary

Part I: Terms and Definitions

Assistant Range Safety Officer: Assistant Range Safety Officer (ARSO). Officer, warrant officer, or noncommissioned officer designated and briefed by the OIC and RSO, who assists the RSO in carrying out the safety responsibilities for the range or activity.

Buttoned-Up: All hatch covers are in a closed and secure position.

Cease-Fire: A command given by anyone observing an unsafe firing condition on any training complex to immediately terminate an active (hot, wet) firing status of a weapon system(s). All weapons will be cleared and made safe. Turret mounted weapons will be elevated. A cease-fire may be ordered by Range Branch personnel, the OIC, RSO, or anyone on a range observing an unsafe act. It can be used for administrative purposes or meal breaks. Temporary cease-fires of 15 minutes or longer will be reported to Range Operations.

Cease-Fire Freeze: Immediate termination of all firing activities. Weapons/weapon systems are not moved or altered; all settings remain as is. Personnel are removed from in and around the weapons and guards are posted to prevent tampering. A cease-fire freeze order is normally employed when rounds have been fired out of the approved Surface Danger Area (SDA).

Cease Training: Immediate termination of all activities. The OIC will centralize and account for all personnel and equipment. Normally directed by Range Operations in response to an ongoing safety hazard or in cases of units conducting unauthorized activities.

Certified: OICs and safety officers are certified after completion of the Fort Knox Range OIC/RSO Certification/Safety Briefing, successful completion of the written test, and the signing of their FK Form 1769 by the individual's commanding officer. This signature verifies the individual is trained on the weapon systems and activities and in the position (OIC and/or RSO) for which they've been selected.

Class A Accident: An Army accident in which the resulting total cost of property damage is \$2,000,000 or more; an Army aircraft is destroyed, missing, or abandoned; or an injury and/or occupational illness results in a fatality or permanent total disability. Note that unmanned aircraft systems (UAS) accidents are classified based on the cost to repair or replace the UAS. A destroyed, missing, or abandoned UAS will not constitute a Class A accident unless replacement or repair cost exceeds \$2,000,000 or more.

Class B Accident: An Army accident in which the resulting total cost of property damage is \$500,000 or more, but less than \$2,000,000; an injury and/or occupational illness results in permanent partial disability, or when 3 or more personnel are hospitalized as inpatients as the result of a single occurrence.

Class C Accident: An Army accident in which the resulting total cost of property damage is \$50,000 or more, but less than \$500,000; a nonfatal injury or occupational illness that causes 1 or more days away from work or training beyond the day or shift on which it occurred or disability at any time (that does not meet the definition of Class A or B and is a lost time case).

Class D Accident: An Army accident in which the resulting in total cost of property damage is

\$20,000 or more, but less than \$50,000; a nonfatal injury or illness resulting in restricted work, transfer to another job, medical treatment greater than first aid, needle stick injuries and cuts from sharps that are contaminated from another person's blood or other potentially infectious material, medical removal under medical surveillance requirements of an OSHA standard, occupational hearing loss, or a work– related tuberculosis case.

Deviation: A departure from the requirements established by this regulation and/or the policy in DA Pam 385-63, Range Safety, or AR 385-63. Deviation requires written approval.

DUD: A dud is a discharged projectile containing an explosive charge which has failed to function on impact or at the predetermined time. Duds are extremely dangerous and will not be handled or moved by anyone other than EOD personnel. The Fort Knox impact area has been receiving ordnance since World War I and many duds appear to be little more than rusted hunks of metal. Many of these old duds have been found fully functional. See Unexploded Ordnance (UXO)

DUD Contaminated Area: Any area where there are known or suspected unexploded munitions (DUD ammunition or explosives) regardless of type.

Firing Lane: The area within which a weapon system is fired. It consists of a start fire line, cease fire-disarm line, and left and right limits of fire.

Firing Line: The line from which weapon systems are fired downrange which consists of firing points or positions.

Firing Position: The point or location at which a weapon system (excluding demolitions) is placed for firing. For demolitions, the firing position is the point or location at which the firing crew is located during demolition operations.

Guard Status: A status requested from Range Operations by the OIC of training to cover periods when a training facility is occupied, but with no activity being conducted other than guard functions. During a guard status, the OIC may depart the area, leaving a guard force NCOIC. A guard status will be requested by only the OIC; the request must identify start and termination times. The OIC must brief the guard force NCOIC and observe his initial contact with Range Operations on FM radio.

Hangfire: A hang fire is a delay in the functioning of the propelling charge or explosive train. A hang fire cannot immediately be distinguished from a misfire. For this reason, always wait the prescribed time (as established by the appropriate FM or TN) for misfires before attempting to clear the weapon.

Hearing Hazard/Hearing Hazard Zone: Hearing protection must be worn by all personnel exposed to levels of 140 dBP and above. The area where the impulse noise levels are 140 dBP or higher and hearing protection is required.

Hearing Protection Zone. Area on the range within which hearing protection must be worn by all personnel during weapons fire. It may be larger than the hearing hazard zone, but never smaller.

High Hazard Impact Area. See impact area.

Impact Area. The ground and associated airspace within the training complex used to contain fired, or launched ammunition and explosives, and the resulting fragments, debris, and components from various weapon systems. Depicted as pink on the Fort Knox Special Map. On a range, it is considered as that area forward of the firing line. A weapon system impact area is the area within the surface danger zone used to contain fired, or launched ammunition and explosives, and the resulting fragments, debris, and components. Indirect fire weapon system impact areas include probable error for range and deflection. Direct fire weapon system impact areas encompass the total surface danger zone from the firing point or position downrange to distance X.

a. **Temporary impact area.** An impact area within the training complex used for a limited period of time to contain fired or launched ammunition and explosives and the resulting fragments, debris, and components. Temporary impact areas are normally used for non-DUD producing ammunition or explosives and should be able to be cleared and returned to other training support following termination of firing.

b. **Dedicated impact area:** An impact area that is permanently designated within the training complex and used indefinitely to contain fired or launched ammunition and explosives and the resulting fragments, debris, and components. Dedicated impact areas contain dud munitions that are considered less hazardous than those with an extreme hazard of unplanned detonation. Duds contained in dedicated impact areas are hazardous, present life/limb risk, and are unstable, but are not considered as unstable as those identified in high hazard impact areas.

c. **High hazard impact area:** An impact area that is permanently designated within the training complex and used to contain sensitive high explosive ammunition and explosives and the resulting fragments, debris, and components. High hazard impact areas are normally established as part of dedicated impact areas where access is very limited and strictly controlled due to the extreme hazard of dud ordnance (i.e., ICM, LAW 40 mm, HEAT rounds, HEIT and other highly sensitive ammunition and explosives).

Malfunction: Failure of an ammunition item to function as expected when fired, launched, or when explosive items function under conditions that should not cause functioning. Malfunctions include hang fires, misfires, duds, abnormal functioning and premature functioning of explosive items under normal handling, maintenance, storage, transportation, and tactical deployment. Malfunctions do not include accidents or incidents that arise solely from negligence, malpractice, or situations such as vehicle accidents or fires.

MEDEVAC: Emergency medical evacuation normally conducted by helicopter.

Misfire. A complete failure to fire which is not necessarily hazardous. Since it cannot be readily distinguished from a delay in functioning (hang fire), it must be handled as worst case in accordance with procedures for the weapon system.

No-Show: A status assigned to a unit which failed to occupy a training facility as scheduled. No-shows are a reportable statistic.

Occupied Status: After signing for the facility from the range technician and moving on the training facility, the OIC will contact Range Operations and be given an occupied status. This is a training status covering all activities excluding actual training.

Officer In Charge (OIC): The officer, warrant officer, or noncommissioned officer, certified for

the training to be conducted, and who is responsible for Soldiers conducting firing or operations within the training complex. The OIC must be on site during all periods of training preparation and training, be in total control of all activities, and is responsible for everything that does or does not happen within the confines of the assigned facility.

QASAS or QAS(AS): Quality Assurance Specialist - Ammunition Surveillance. Department of the Army civilians that function in the ammunition surveillance program at installations that receive, store, maintain, issue, use, and dispose of ammunition.

Range and Training Area (RTA) Complex: The Fort Knox training complex consists of all reservation land space outside the cantonment area, which is used in support of the installation's training mission.

Range Area: The land space that starts at the edge of the range administrative area and ends at the last target installation. That part of the range area forward of the firing line is also impact area.

Range Management Authority: RMA is the individual charged with the supervision and enforcement of installation range safety and control of range use, maintenance, modification, and installation of ranges and training facilities per procedures prescribed herein, and the policies of the commander. Serves as Chief, DPTMS Range Branch.

Range Personnel: Those persons specifically designated to assist the Range Management Officer in the discharge of his duties. Range Branch personnel have permission to observe/inspect any range or training site unannounced.

Range Safety Officer (RSO): The officer, warrant officer, or noncommissioned officer (SGT/E5 or above) who is the direct representative of the officer in charge (OIC) of firing or other operations. The RSO will be certified on the weapons to be fired. The RSO is responsible to the OIC for ensuring the adequacy of safety of firing, training operations, for final determination that, before firing, correct settings are placed on indirect fire weapons and ammunition represent data within prescribed safety limits and ensuring compliance with laser range safety requirements and local standing operating procedures. The RSO must inform the OIC of the safety status of the range before starting live-fire activities.

Risk Management: The process of weighing (analyzing) training realism and the expected benefits of an exercise or operation against the known risks.

Ruptured Cartridge: When the shell casing of a cartridge bursts or ruptures inside the chamber of a weapon, this constitutes a ruptured cartridge. There is usually a failure to eject from the weapon.

Seibert Stake: 2" diameter by 16" tall PVC pipe wrapped with bands of white, yellow and red Hi-Intensity prismatic sheeting used to mark land which is currently "off-limits" to training or maneuver activities. The stakes are normally mounted 4 feet above the ground on metal T-posts and spaced at 30-meter intervals.

Stoppage An interruption in the cycle of functioning caused by faulty action of the gun or faulty ammunition.

Surface Danger Zone (DZ): A DZ delineates that portion of the earth and the air above in

which personnel and/or equipment may be endangered by ground weapons firing or demolition activities. DZs are designed to make the probability of hazardous fragment escapement from installation boundaries unlikely and minimize the danger to the public, installation personnel, facilities/equipment, and property.

Unexploded Ordnance (UXO): Ammunition and explosives which have been primed fused, armed, or otherwise prepared for actions and which has been fired, dropped, launched, projected or placed in such a manner as to constitute a hazard to operations, installations/communities, personnel, or materiel, and remains unexploded either by malfunction, or designs or any other cause.

Using Unit: The unit engaged in training and identified as the requester on the Reservation Summary approving use of the facility.

Weapon Danger Zone (WDZ): A weapon danger zone encompasses the ground and airspace for lateral and vertical containment of projectiles, fragments, debris, and components resulting from the firing, launching, and detonation of aviation-delivered ordnance. It reflects the minimum land and air requirement, to include terrain mitigation, needed to safely employ a given weapon. The weapon danger zone accounts for inaccuracy, failures, ricochets, and broaching/porpoising of a specific weapon/munition type delivered by a specific aircraft type.

Weapon System Qualified: An individual, military or civilian, who has completed a standard program of instruction for a particular weapon system.

Weapon System Knowledgeable: An individual, military or civilian, who has completed a standard program of instruction for a particular weapon system or has completed familiarization training established by the installation commander. Familiarization training may involve live-fire training.

Glossary

Part II: Abbreviations/Acronyms

AP	Armor Piercing
ASP	Ammunition Supply Point Operations)
COB	Civilian on the Battlefield
DA	Department of the Army
DPW	Directorate of Public Works
DOD	Department of Defense
DODAC	Department of Defense Ammunition Code
DODIC	Department of Defense Identification Code
DZ	Danger Zone
DZ	Danger Zone (Live Fire Operations)
DZ	Drop Zone (Airborne Operations)
EOD	Explosive Ordnance Disposal
ER	Emergency Room (Medical Operations)
FARP	Forward Arming and Refueling Point
FDC	Fire Direction Center (Artillery)
FM	Field Manual
HC	Hexachloroethane (Chemical used to produce smoke)
HE	High Explosives
HEAT	High Explosives Anti-Tank
IAHC	Ireland Army Health Clinic
JAG	Judge Advocate General
LRSO	Laser Range Safety Officer
LZ	Land Zone (Aviation Operations)
MEDEVAC	Medical Evacuation
MICLIC	Mine Clearing Line Charge
MILES	Multiple Integrated Laser Engagement System
MLRS	Multiple Launch Rocket system
MOPP	Mission-Oriented Protective Posture
MOUT	Military Operations in Urban Terrain
MP	Military Police
MSD	Minimum Safe Distance
MSDS	Material Safety Data Sheet
NCOIC	Non-Commissioned Officer In Charge
NCS	Net Control Station
NHA	Noise Hazard Area
NOE	Nap of the Earth (Aviation Operations)
OC	Observer Controller
OIC	Officer-In-Charge
OP	Observation Post
PAO	Public Affairs Office
PFD	Personal Flotation Device
POV	Privately Owned Vehicle
POW	Privately Owned Weapon
QASAS or QAS(AS)	Quality Assurance Specialist Ammunition Surveillance
RCA	Riot Control Agent
RFMSS	Range Facility Management Support System
RMA	Range Management Authority
RSO	Range Safety Officer

SOP	Standard Operation Procedures
SP	Self-Propelled
SRTA	Short Range Training Ammunition
TB	Technical Bulletin
TM	Technical Manual
TOW	Tube-Launched, Optically Tracked, Wire Guided Missile
UXO	Unexploded Ordnance
WBG	Wet Bulb Globe Temperature
WDZ	Weapon Danger Zone
WP	White Phosphorus (chemical munitions)