



# **National Training Center Exercise Operating Procedures (EXOP)**

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## **Chapter 1 Administrative**

- 1-1 Visits to the NTC**
- 1-2 OC/T Certification Requirements Overview**
- 1-3 Observer Coach / Trainers (OC/T) Duties and Responsibilities**
- 1-4 TESS Requirements**
- 1-5 Restricted TESS Equipment/Procedures**
- 1-6 Higher Headquarters**
- 1-7 Off Limits and Restricted Areas**

## **Chapter 2 Intelligence**

- 2-1 Intelligence Architecture**
- 2-2 Signals Intelligence (SIGINT)**
- 2-3 Human Intelligence (HUMINT)**
- 2-4 Detainee Operations**
- 2-5 Imagery Intelligence (IMINT)**
- 2-6 Technical Intelligence (Weapons Intelligence Team [WIT])**
- 2-7 Biometrics/Forensics**

## **Chapter 3 Maneuver**

- 3-1 Direct Fire Engagements**
- 3-2 Penalty and Safety Kills**
- 3-3 Fighting Positions and Bunker Positions**
- 3-4 Dismounted Operations**
- 3-5 Sniper Weapons Systems and Non-standard systems**
- 3-6 Special Operations Forces**
- 3-7 Urban Operations**
- 3-8 Pyrotechnics and Munitions Replication**
- 3-9 Searches/Destruction of Caches, Bunkers, and Buildings**
- 3-10 Non-Standard Tactical Vehicles**

## **Chapter 4 Fire Support**

- 4-1 Mission Command**
- 4-2 FA Organization**
- 4-3 Fire Control**
- 4-4 Weapons Locating Radars**
- 4-5 OPFOR Artillery Replication**
- 4-6 Laser Operations**
- 4-7 Precision Munitions**
- 4-8 Artillery/Mortar Safety**
- 4-9 Manual Artillery Assessment Tables**
- 4-10 Crater Analysis**
- 4-11 Artillery/Rocket Delivered Scatterable Mines**

## **Chapter 5 Engineer**

- 5-1 Obstacles**
- 5-2 Training Demolition**

- 5-3     Improvised Explosive Devices (IEDs)
- 5-4     EOD/WIT Tactical Site Exploitation
- 5-5     Conventional Minefields
- 5-6     SCATMINE
- 5-7     Reduction Drills
- 5-8     Digging
- 5-9     MSR Restrictions
- 5-10    Marking of Excavation Sites
- 5-11    Environmental Clean-Up Team
- 5-12    Road Craters
- 5-13    Notional Wet Gap Crossing
- 5-14    Unexploded Ordnance (UXO)
- 5-15    Counter RCIED Electronic Warfare Devices (CREW)
- 5-16    Robots

## **Chapter 6**

### **Air Defense**

- 6-1     Command and Control
- 6-2     Aircraft
- 6-3     Air Defense
- 6-4     Adjudication and BDA Assessment

## **Chapter 7**

### **Reconstitution**

- 7-1     Personnel Reconstitution
- 7-2     Vehicle Reconstitution

## **Chapter 8**

### **Sustainment**

- 8-1     Personnel
- 8-2     Unit Ministry Team
- 8-3     TESS Casualty Assessment
- 8-4     Causality Evacuation
- 8-5     Medical Echelons
- 8-6     Material Readiness Reporting
- 8-7     Transportation
- 8-8     Class of Supplies
- 8-9     Ammunition
- 8-10    Aviation FARP and Ammunition Operations
- 8-11    Tactical Convoy Operations

## **Chapter 9**

### **Aviation**

- 9-1     General
- 9-2     Radio Procedures
- 9-3     TESS
- 9-4     Direct Fire Engagements and Battle Damage Assessments
- 9-5     Casualty Operations
- 9-6     Aviation CBRN
- 9-7     Personnel Recovery
- 9-8     UAS Employment
- 9-9     Air Assault and Air Movement Operations

- 9-10 Missions in Support of Special Operations
- 9-11 Fixed Wing Aircraft
- 9-12 Airspace Control
- 9-13 Close Air Support (CAS)

## **Chapter 10**

### **Non-Lethal Operations**

- 10-1 Media Environment
- 10-2 Role Players and Subject Matter Expert Support
- 10-3 Non-Combatant Evacuation Operations (NEO)
- 10-4 Dislocated Civilian (DC) Movement
- 10-5 Foreign Humanitarian Assistance (FHA)

## **Chapter 11**

### **CBRN**

- 11-1 Chemical, Biological, Radiological and Nuclear (CBRN)
- 11-2 CBRN Agents
- 11-3 CBRN Agent Attacks
- 11-4 Decontamination
- 11-5 CBRN Reconnaissance and Survey
- 11-6 Special Considerations
- 11-7 Persistent Agents
- 11-8 Non-Persistent Agents
- 11-9 Biological Agents

## **Chapter 12**

### **Communications**

- 12-1 Network
- 12-2 Spectrum
- 12-3 COMSEC
- 12-4 Logistical Systems
- 12-5 Information Assurance
- 12-6 Out of Sector Missions

## **Chapter 13**

### **Cyberspace Electromagnetic Activities (CEMA) / Space Operations**

- 13-1 Cyberspace Operation
- 13-2 Electronic Warfare
- 13-3 Aerial Electronic Attack
- 13-4 Spectrum Operations
- 13-5 Space Operations

## **Chapter 14**

### **Safety**

- 14-1 Rotational Unit Safety Officers
- 14-2 Force Protection
- 14-3 Rainstorms, Flash Floods, and Lightning
- 14-4 Weather Related
- 14-5 Wildlife
- 14-6 Lost in the Desert
- 14-7 Sleep Areas

- 14-8 Vehicle Operation**
- 14-9 UXOs Found in the Training Area**
- 14-10 Ammunition**
- 14-11 Laser Device Operations**
- 14-12 Carbon Monoxide Poisoning, Toxic Smoke, and Fumes**
- 14-13 Serious Accident/Emergency Situation Procedures**
- 14-14 Serious Incident Reports**
- 14-15 Off-Limits Areas**
- 14-16 Aviation**
- 14-17 Common Missile Warning System (CMWS)**
- 14-18 MEDEVAC Procedures**

#### **Annex A**

- A-1 Overview**
- A-2 OC/T Standards of Conduct**
- A-3 Instrumentation Capabilities**
- A-4 Preparation for an AAR**
- A-5 Informal AAR**
- A-6 Formal AAR**
- A-7 TAFF and building the TF/BDE AARs**

#### **Annex B**

##### **Live Fire Operations**

- B-1 Live Fire Operations at the National Training Center**
- B-2 Live Fire General Requirements**
- B-3 Live Fire Training Requirements**
- B-4 Movement and Maneuver**
- B-5 Fires**
- B-6 Protection**
- B-7 Sustainment**
- B-8 Rotary Wing and UAS Operations**
- B-9 Close Air Support**
- B-10 Intelligence**
- B-11 EA/EW Operations**
- B-12 Miles Engagements**
- B-13 Live Fire Targets**
- B-14 Weapon Safety Posture (WSP) and Weapons Control Status (WCS)**

## Chapter 1 Administrative

- 1-1 Visits to the NTC
- 1-2 OC/T Certification Requirements Overview
- 1-3 1-3 Observer Coach / Trainers (OC/T) Duties and Responsibilities
- 1-4 TESS Requirements
- 1-5 Restricted TESS Equipment/Procedures
- 1-6 Higher Headquarters
- 1-7 Off Limits and Restricted Areas

### CHAPTER 1 – ADMINISTRATIVE

#### 1-1 Visits to the NTC

1. NTC enforces strict rules limiting access to the training area during rotational exercises to achieve a high degree of realism and prevent disruption of scheduled training. Visitors to NTC must be IAW FORSCOM REG 350-50-1.

2. Rotational Unit Visitors (RUV). To enter the training area all visitors must be coordinated through the NTC G-3 and Protocol Office and abide by the following restrictions outlined in FORSCOM REG 350-50-1, Pg 16, and Para 3-9.

a. Uniform. Kevlar helmets, eye and hand protection will be worn when traveling in tactical vehicles. Visitors are authorized to wear duty uniform (military members) or appropriate civilian attire when escorted within the training area.

b. Live Fire. Visitors must wear Kevlar ballistic helmet and protective body armor during live fire exercises.

c. Contact with RTU. Visitors who intend to interact with the rotational unit must be escorted by a protocol escort and a member from Operations Group to facilitate a smooth transition. All contractor vehicles are subject to search by the rotational unit, must pass through Traffic Control Points (TCPs) and abide by rotational unit instructions while traveling within the training area.

3. AARs. With the exception of General Officers, if RUVs wish to view an AAR, they must watch the AAR from the overflow tent at the AAR site or make prior coordination with 52ID ID DTOC to view the AAR from building 990.

4. Point of Contact. For further questions on RUVs please contact Coyote 06, Chief, Protocol, NTC, Fort Irwin, CA 92310, DSN 470-4224/3000, Commercial (760-380-4224/300). Contractors please contact G3, Chief of Plans and Ops at DSN 470-4423/4424, Fax 470-4424, Commercial (760-380-4423/4424/4422).

#### 1-2 OC/T Certification Requirements Overview

1. NTC's Observer Coach/Trainer Academy (OC/T-A) is a two-phased certification training program designed to certify all assigned or attached OC/Ts on their duties as trainers, coaches, and mentors. Phase 1 consists of a four (4) day classroom training model, typically held BRD-4 thru Comp-2 or Reception, Staging, Onward movement, Integration (RSOI)-1 thru RSOI-4. Uncertified Guest OC/Ts will complete Phase I training prior to RSOI 1. Phase 1 consists of the following classes:

NTC Rotation Overview	Environmental
TESS	CALL
AAR	Risk Management
Duties and Responsibilities	Exercise Operating Procedures
RCS Communications	OPFOR Orientation
Live Fire	Fires Marking

**2. Phase 2. Team 07s certify all permanently assigned OC/Ts and ensure certifications are reflected in DTMS. The Phase 2 certification will include the following:**

- a. Current NTC Range Safety Card IAW NTC Range Regulation 350-3. Valid for one year.**
- b. Complete a ride along with certified OC/T and observe coverage and safety procedures for live fire operations.**
- c. Demonstrate knowledge of proper staking procedures, safety procedures, and coverage procedures in the defense.**
- d. Demonstrate knowledge of proper safety procedures and coverage during offensive operations; to include, team specific safety and penalty kill procedures.**
- e. If involved with dismounted infantry, participate as a member of a two man clearing team and as an OC/T in the trench/bunker certification (updated semi-annually by Tarantula team).**
- f. Pass Live Fire Certification Test (70% or above).**
- g. Attend the Live Fire Effects Safety Brief and attend Target TEWT of applicable targetry prior to LFX.**
- h. Complete two observed AARs to standard.**

**3. Dragons/Warrior 27/27A Certification Checklist. Live Fire OC/Ts (Dragons & W27/W27A) require additional training. Additional requirements include:**

- a. Graduate from Joint Firepower Course (mandatory)**
- b. Graduate from US Army Range Safety Course Level II (mandatory).**
- c. Show a clear understanding of: Use of surface danger zones (SDZs), Fire mission clearance procedures (W27/W27A/D27/37/47 only), and Fire mission processing procedures (W27/W27A/D27/37/47 only).**
- d. Attend briefings on NTC Annual Waivers and demonstrate knowledge of the waivers, Live Fire safety planning practical exercise and targetry orientation.**

**4. Targetry and Graphics. Dragons are responsible for positioning targetry and developing (with the DIV Planners) graphics IAW the approved scenario, which can be executed safely by the rotational unit. Further discussion can be found in Annex B, Live Fire.**

### **1-3 Observer Coach / Trainers (OC/T) Duties and Responsibilities**

**1. At a minimum, every Company sized element in the maneuver area will have one OC/T who has completed the phase I and II of OC/T certification. Special Operations OC/Ts may substitute certification from the Joint Readiness Training Center (Special Operations Training Detachment). There are no other exceptions to this rule.**

**2. OC/T duties and responsibilities include but are not limited to the following:**

- a. Present an EXROE/Safety brief to the RTU prior to TD1. Every member of the RTU will receive this briefing.**
- b. Assist RTU with the proper fitting and zeroing of TESS equipment.**
- c. Adjudicate engagements IAW with Chapter 3.**
- d. Observe key mission planning, rehearsals and events prior to execution.**
- g. Move as a member of the element and pass all appropriate hand and arm signals.**

h. Pass all standard NTC reports to the Tactical Analysis Feedback Facility (TAFF) in a timely manner.

i. Conduct initial coordination with town OICs/leadership 24 hours in advance of Urban Operations.

3. OC/Ts will notify the Town OIC and/or Town Leadership at least one hour prior to RTU elements entering a town. Coordination should include the RTU's task and purpose, locations where the RTU intend to operate, and personnel they intend to contact. Town OICs may delay RTU entry into a town in order to meet the minimum one hour coordination requirement.

4. Ensure that all risk assessments are completed to standard IAW ATP 5-19 Risk Management, and NTC Regulation 385-10, *National Training Center and Fort Irwin Safety Program*. **IMMEDIATELY** passing any information pertaining to the CG or COG's CCIR to the TAFF.

#### **1-4 TESS Requirements**

1. Tactical Engagement Simulation System is a brand name attached to the laser systems used to adjudicate battlefield direct fire effects. TESS has replaced MILES at the National Training Center. Exceptions are some Stryker based systems still using MILES XXI.

2. All Personnel and vehicles/systems must have operable TESS at all times on the NTC battlefield. Personnel and vehicle systems with inoperable TESS will not participate in training, unless authorized by the COG. The only exemptions are as follows:

a. When the equipment presents a clear safety hazard: for example, maintenance personnel operating in restricted areas.

b. Aerial platforms which the installation of TESS has not received air-worthiness certification.

c. Drivers of OPFOR tanks and armored personnel carriers while operating their vehicles.

3. Maintenance. OC/Ts will assist rotational units in correcting TESS failures, replace batteries on a one-for-one basis, and provide the unit with their TESS contact team location.

4. Individual. All BLUEFOR and OPFOR personnel forward of the DSA/RSA will be equipped with and wear either an Individual Weapon System (IWS) or Man Instrumented Kit (MIK). Units may request their scouts wear boonies hats in lieu of the ACH. This request must go through the rotational unit senior trainer to the COG no later than RSOI-2. If approved, the TESS halo must be on the boonie hat.

5. Man-worn Instrumented Kit (MIK). All squad sized elements and any smaller sized separate element will draw and carry a MIK. The MIK has the capability of the IWS plus a (DCIU) position locating and AWES sensing capability.

6. Tactical Vehicle System (TVS). All wheeled combat, reconnaissance HMMWVs, civilian, or non-standard military vehicles going forward of the LD, or Company/Team areas, will be equipped with the TVS, and be instrumented or have an OC/T escort. TESS gear for vehicles and weapons consists of vehicle detector modules, Crew Control Module (CCM), Vehicle Kill Controller (VKC), Vehicle Kill Indicator (VKI), cables and adapters.

a. Master switches will be kept on at all times. Vehicles with separate electrical turret power systems (e.g., M2/3, M1A2) must keep turret power on also.

b. Camouflage nets, personal gear, or anything else must not cover vehicle detector sensors.

7. Aircraft. OPFOR and BLUEFOR aircraft will be equipped with operational TESS or MIK at all times for Airspace control de-confliction.



### **1-5 Restricted TESS Equipment/Procedures**

1. **Restricted Equipment.** Rotational units will not bring UCD to the NTC. An exception is available for aviation FARPs to affect the re-arming of attack aircraft.

2. **Restricted Procedures.** OC/T Teams will coordinate for unit requirements to conduct zero and bore sight ranges using controller guns. Units may dry fire when bore-sighting only.

### **1-6 Higher Headquarters**

1. The 52ID (Warrior) operates as the RTU higher headquarters (HICON) for all tactical orders and briefings from RSOI 1 to Training Day 14, and functions as the exercise control (EXCON) for the training environment. 52ID TACSOP contains specific instruction for requesting support and contact information in addition to this document.

2. **Command and Control.** Division headquarters elements (DISE, DTAC, or DMAIN) or any other elements may deploy to NTC to participate in a brigade rotation. In principle, HQ elements act as an extension of the 52ID DTOC. HQ elements which deploy to the NTC, will configure in one of three ways: 1) integrated into the 52ID DTOC (inside or near Building 990), 2) as a HQ element in the cantonment area, or 3) as a competitive element in the training area. A HQ element in the cantonment area will maintain its own internal structure, report to the Warrior staff in accordance with its HQ function, receive HICON information, and gain approval by 52ID HQ prior to dissemination of any intelligence products/information. See DTOC SOP for additional requirements.

3. **Simulated Intelligence Assets.** NTC replicates some IC assets with simulations. Simulated aerial assets will be listed in the 52ID collection plan. Live and simulated aerial assets are requested the same way, IAW 52ID TACSOP. Simulated full motion video assets are not typically approved for RTU use inside the Fort Irwin training area.

a. **Simulated National Collection Systems.** 52ID may replicate GEOINT and SIGINT products within the 52nd ID AO.

(i) SIGINT Systems will provide limited ELINT and COMINT coverage in the Division area of operations in the form of an INTREP/TACREP.

(ii) SIGINT information is routed through INSCOM Foundry at NTC. The G2 will evaluate this information, and based on the scenario, hold, modify, or disseminate the information to the brigade S2 and other divisional GS assets, e.g. Fires Brigade S2. In some cases, information within the rotational brigades Area of Operations (AO) may be carbon copied to the brigade or other RTU when forwarded to 52ID.

(iii) Reports may also be generated based on JCATS, WIM, and SIMPLE simulations software and disseminated via Jabber or DCGS.

b. **Information Collection (IC).** Unless otherwise directed by 52ID order, all information collected by echelon above brigade assets will be routed through 52ID to the RTU and other subordinate units.

c. RTU requests aerial IC assets in conjunction with the Division Intel Synch Meeting conducted 1600 daily. Division assets must be requested NLT two days prior; Assets not under division control must be request calendar days in order to meet the ATO cycle.

### **3. Support Units**

a. **NTC Contracted EAB Battalion:** Convoys crossing the light line require OC/T escort and are subject to battlefield effects. If OC/T coverage is unavailable, the contracted EAB contacts the Goldminer

TAFF for authorization to cross the light line. The contracted EAB Battalion supports up to two convoys per day during convoy windows of 0800-1100 and 1300-1600 and is prepared to support emergency/high priority convoys as required. The rotational unit should provide a six-hour notification for emergency resupply.

b. EAB Contractors supporting the rotation replicate a KBR type contractor organization by wearing a common uniform, wearing a Ballistic Helmet, and carrying an EAB issued photo identification identifying them as EAB employees. EAB contractors are not subject to capture by the OPFOR. Contracted EAB resupply convoy will allow two hours for the receiving unit to download supplies. After the two hour period they may, at the convoy commander's option, return to LSA Warrior in order to replicate the need to maintain delivery schedule to other brigades. The rotational unit is responsible to offload cargo from the contracted EAB Battalion. The rotational unit may add vehicles to the contracted EAB convoy with convoy commander approval. The contracted EAB Battalion requires the rotational unit to sign for received supplies.

c. The Echelon Above Brigade (EAB) support units are required to follow the EXOP and Rules of Engagement with the following exceptions:

(1) EAB convoys can use the hard surface road and approved MSR/ASRs for resupply convoys moving to the BSA or live fire area except for MSR Bull Run (Barstow Road). EAB Convoys use the tank trails adjacent to MSR Bull Run.

(2) HETs and Civilian refrigerator trucks are not required to have TESS due to limited availability.

#### **1-7 Off-Limits and Restricted Areas**

1. General. NTC has several environmentally sensitive areas within the training area. These areas are either off limits to all personnel or restrict the types of vehicles and operations that may occur in the area. These areas are marked with off limits signs or marked as "off limits" on the overprinted NTC map. All dry lakebeds are off-limits.

2. Depictions. Restricted Areas are marked as 'Restricted Maneuver' on the overprinted NTC map. Wheeled vehicles and dismounted operations are authorized in all restricted maneuver areas. However, tracked vehicles are not authorized in restricted areas without clearance from range control and the environmental section of NTC's DPW.

3. Personal cell phones are not permitted in the training area. Exceptions to this rule are located in Ch 12, Communications.

4. All personnel will remain 200 meters from all fixed site antennae and fixed site maintenance buildings supporting the antennae. No persons shall establish an observation post, mission command structure, collection point, field site operations area, bivouac site or any other tactical or non-tactical assembly area within the 200 meter restricted area around these sites. No persons will attach camouflage netting, tentage, shade, guide wires or any other items to these fixed antennae.

## **Chapter 2 Intelligence**

- 2-1 Intelligence Architecture**
- 2-2 Signals Intelligence (SIGINT)**
- 2-3 Human Intelligence (HUMINT)**
- 2-4 Detainee Operations**
- 2-5 Imagery Intelligence (IMINT)**
- 2-6 Technical Intelligence (Weapons Intelligence Team [WIT])**
- 2-7 Biometrics/Forensics**

### **CHAPTER 2 – INTELLIGENCE**

**OVERVIEW.** The 52ID headquarters replicates higher control and access to echelons above brigade information collection assets and intelligence. Consistent with current capabilities up to a 75% read down will be transmitted during offensive operations. The 75% read is defined as center of mass grids to MIC battle positions and supporting obstacles. This chapter outlines the exercise procedures for intelligence.

#### **2-1 Intelligence Architecture**

Intel Architecture is based on the DCGS-A system. Rotational units and DTACs must bring and utilize their organic DCGS-A IFS stacks and BALS. Additional instruction are found in 52ID TACSOP.

#### **2-2 Signals Intelligence (SIGINT)**

**1. Training.** The STG Concept of Operations is classified SECRET. It is on file at the NTC Project Foundry office and is briefed to rotational units. The BCT will coordinate for any desired STG training at NTC during the D-180 conference. The NTC Intelligence Plans Team will identify the requirements for subsequent coordination by plans and the NTC Project Foundry office. With prior coordination, the NTC Project Foundry team will facilitate coordination of training and certification.

**2. NTC provides a robust signal environment for rotational units to employ SIGINT capabilities.** While scenario information is generally unclassified, all personnel are responsible for protecting capabilities, sources, and methods of SIGINT operations at the appropriate classification level. (SECRET or TOP SECRET).

**3. NTC Project Foundry Office.** Foundry will have intelligence oversight over SIGINT operations in the training area. Foundry will act as the 52ID SIGINT section to exercise HICON of RTU SIGINT personnel where necessary in accordance with 52ID orders. NTC SIGINT OC/Ts will maintain oversight of SIGINT operations to facilitate protection of capabilities and methods and coach and mentor units on current TTPs.

**4. Equipment operators are responsible for accountability, basic maintenance and conducting PMCS of all SIGINT equipment IAW the systems operator's manual.** Pre-combat inspections of personnel and equipment are the responsibility of the senior member of the team and will be conducted prior to every mission. Post mission maintenance, accountability and security inspections will be conducted immediately following each mission and prior to storing the system in the assigned secure area or Sensitive Compartmented Information Facility (SCIF).

**5. OPSEC.**

**a. Spillage.** If spillage occurs, the BCT will report it and conduct immediate steps to contain it. For SIGINT Terminal Guidance (STG) operations, the driver, TC, and gunner in the STG vehicle must possess valid and current TS//SCI clearances and sign non-disclosure agreements. All STG traffic, reports, working aids and other NTC generated STG material must be handled and disseminated IAW appropriate USSIDs. Units must leverage their SOPs concerning physical security measures.

**b. Prevention of System Compromise.** Role players, OPFOR personnel, and exercise support personnel, which the targeted person will be US military or civilian with a TS/SCI clearance, and will not

compromise STG operations. If a SIGINT team identifies a risk of compromise, it will cease operations until the situation is handled appropriately and will restart operations only after SIGINT OC/Ts state the area is clear of possible compromise. NTC will not record STG operations.

6. **OPFOR Interdiction and SIGINT Casualties.** OPFOR Soldiers may not capture, shut down, enter, search, or tamper with SIGINT systems or vehicles, to include dismounted equipment or the vehicle. The SIGINT OC/T will assess the system BDA card to the operator.

7. **Search Restrictions.** Only SIGINT OC/Ts may inspect SIGINT vehicles and equipment nominated by OPFOR for search. No personnel without a security clearance are permitted in or around the SIGINT vehicle or equipment at any time.

### **2-3 Human Intelligence (HUMINT)**

1. **HUMINT Collection** priority of focus and tasks are determined by the RTU command. Tasks for RTU HUMINT collection assets during Decisive Action rotations; to include, Tactical Questioning (TQ), Screening, Detainee/EPW screening support to interrogation and interrogations, Military Source Operations (MSO), Internally Displaced Persons (IDP)/Defector debriefings, Document and Media Exploitation (DOCEX/DOME), and basic Tactical and Sensitive Site Exploitation (TSE/SSE). Primary of these is MSO and interrogations. Additional HUMINT activities may include liaison and Close Access Target Reconnaissance/Tagging, Tracking and Locating (CATR/TTL) operations ISO MSO. RTU prioritization of HUMINT collection activities may change based on operational phases during Decisive Action scenarios.

2. **Military Source Operations.** Military Source Operations will be conducted IAW unit SOP, 52ID Orders, FM 2-22.3, AR 381-10, and AR 381-100 (S//NF). Designated HUMINT collectors will conduct MSO IAW with scenario when directed to do so by the RTU. All MSO will be conducted IAW Army policy and 52ID orders during DATE rotations. Intelligence Contingency Funds (ICF) is available for issue from 52ID G2X and will be employed IAW AR-381-141 (C//NF). NOTE: ICF is not useful as a weapons system and can result in negative consequences for US Forces.

3. **Interrogations.** Interrogation operations will be conducted IAW unit SOP, 52ID Orders, FM 2-22.3, and AR 381-100 (S//NF). The only approaches authorized for use are outlined in FM 2-22.3. Interrogation techniques Separation, Mutt and Jeff and False Flag must be approved by the first O-6 or above in the chain of command. Designated HUMINT personnel will conduct interrogations IAW scenario when directed to do so by the RTU. Per 52ID order, all EPW/detainees will be transferred to division within 24 hours of detention. The only exception to this is an extension approved by 52ID G3 for continued RTU HUMINT exploitation, not to exceed 48 hours from time of detention. Interrogations will not take place without HUMINT certified OC/T presence. NOTE: Interrogations will only be conducted by certified HUMINT collectors in the 35M/351M MOS fields.

a. Any EPW/detainee interrogated without an OC/T present will be assessed as a non-battle casualty and evacuated, thus causing the RTU to lose any potential intelligence.

b. Civilians on the Battlefield (COB) attempting to turn in weapons or provide intelligence to the unit can be held for interrogation IAW 52ID policy, unit SOP, and ROE, but should immediately be reported to the 52ID DTOC. An OC/T will monitor the status of the individual for accountability purposes.

4. **Tactical Questioning (TQ)** is the expedient initial questioning for information of immediate value. While any Soldier may conduct TQ, HUMINT Soldiers frequently conduct unit training and supervise TQ operations. TQ will be performed IAW FM 2-91.6, unit orders, and unit SOP, and must occur at or near the objective. An OC/T (MOS immaterial) will be present at all unit actions involving TQ. Once an individual is processed as a detainee/Enemy Prisoner of War (EPW), TQ ceases, and any follow on questioning, i.e. screening and interrogations, will only be conducted by certified HUMINT collectors (35M or 351M). NOTE: All detained persons must have an OC/T present to be questioned.

5. **Tactical/Sensitive Site Exploitation.** Evidence collection should be performed as part of HUMINT operations ISO of, but not limited to, raids, cordon & searches, liaison, and should include a thorough search for evidence and photographs - on location and at time of detention - of individual(s) with the evidence (contraband, illegal weapons, IED making materials, etc.). Exploitation activities will be conducted IAW ROE/security agreement and ATP 3-90.15. An OC/T is required to cover down on TSE/SSE operations.

6. **NTC HUMINT OC/T Responsibilities.** An NTC HUMINT qualified OC/T will maintain oversight of HUMINT operations at Fort Irwin to facilitate protection of HUMINT tradecraft and legal execution of RTU interrogation/MSO activities while coaching and mentoring RTUs on current HUMINT TTPs as needed. While at NTC, the Bronco Team (Brigade Staff Trainers) will issue ICF to the RTU. An OC/T will only exercise command and control over training elements for safety reasons if witnessing an unsafe act or to prevent injury or death.

7. **RTU Responsibilities.** The RTU is responsible for maintaining OPSEC and INFOSEC of HUMINT operations as well as accountability of all associated personnel and equipment. The RTU must maintain overall security of classified equipment and information. The RTU will exercise command and control of attached and organic HCT teams and will determine allocations, command, and support relationships of their teams. The RTU will submit all Concept of Operations (CONOP) for the employment of CATR/TTL equipment ISO HUMINT operations to 52ID G2 for technical approval. The RTU will submit a memorandum signed by the first O-6 in the chain of command certifying that personnel expected to employ, supervise, or manage ICF have conducted ICF training online. Additionally, the RTU ICF Class-A Agent, Approving Officer, and Custodian will be identified in additional duty memoranda signed by the first O-6 in the chain of command. The RTU will identify at least one Soldier in MOS 35M or 351M to serve as Sub-Technical Control Authority (TCA) in a memorandum signed by RTU command for the purpose of Interrogation Plan (IP) approvals. Submit all signed memoranda to 52ID G2X.

## **2-4 Detainee Operations**

1. **Overview.** Detainees on the division and brigade "Detain, Suspect, Protect" (DSP) list must be reported immediately. Detainees are processed according to the ROE defined in the 52ID OPORD. These processing times and responsible agencies differ according to the NTC scenario for each rotation. Brigade specific DSP lists will be forwarded to the 52ID G2 for review. Detainees on the list must be transferred to the Division MPs within 24hrs. A 24hr extension may be requested to hold an EPW/Detainee for up to a maximum of 48hrs.

2. **Simulation of binding or blindfolding.** Player units will at no time physically bind, muffle, or blindfold detainees; although they may simulate these measures by displaying the physical means.

a. Simulate hand-cuffs, flex-cuffs, zip-strips, rope, etc. by placing the means of binding in the detainees hands. The detainee is required to maintain the bindings in his hands and to act as if his hands are physically bound until removed.

b. Blindfolding a detainee is simulated by loosely tying a blindfold or gag around the detainees neck, or a similar device inside the role-player's shirt. The role-player must act accordingly. BLUEFOR must carefully help move the role-player as if he could not see or walk.

3. **Evidence collection** will be conducted IAW ROE / SOFA and applicable regulations. A minimum of one OC/T is required to cover down on the operation. Legal and HUMINT OC/T coverage is recommended.

4. **Personnel searches** may only be conducted in the presence of an OC/T. Any searches conducted without OC/T coverage will be immediately stopped, and the personnel being searched will be permitted to break contact as a result of improperly initiating search procedures. The unit will not be able to exploit information found on an individual searched without OC/T coverage.

5. **Gender.** Items that (in the opinion of the OC/T) would have been discovered during a physical search are immediately forfeited. A rotational unit Soldier may search a role-player of a different gender ONLY if the following conditions are met.

- a. The Soldier conducting the search will clearly describe the search procedures, pointing out where he/she would search.
- b. The Safe Bag. One 'Safe bag' is authorized for OPFOR and Role Players. This bag is constructed using a zip lock sandwich bag with 100 MPH tape on the front and back near the opening. Bag will include SAFE BAG in 1in block lettering. On one of the sides of the owner annotates:

Name: Last, First, MI  
Troop/ Town  
Date

The Safe Bag will contain only the following items:

Medication  
Military, civilian identification (non-role)  
Wallet

The Safe Bag MAY NOT CONTAIN:

Role ID card  
Grids to caches  
Government cell phones  
Personal cell phones. All cell phones are in play and may be confiscated and exploited by BLUEFOR. Personal cell phones found on OPFOR/COB personnel will be turned over to Town OIC or OPFOR/ COB OC/T. The OC/T Team 07 with consultation from Team 09 will determine the intelligence value of the cell phone based on the role of the OPFOR/ COB player.

6. Items of intelligence value. (Associated with the training scenario) Must not be carried within or with personal items like wallets or photographs, or hidden in areas that may not be searched due to the restrictions of the training environment.

7. Identification documents. Those associated with the detainee (whether real or related to the training scenario) must be forwarded with the detainee at every level.

8. Sensitive items. Those found in the possession of a detainee will remain in control of the detainee until turned over to an OC/T or OPFOR LNO. If the detention occurred within or near a town, the local law-enforcement which is usually comprised of OPFOR leadership can accept responsibility for the items.

9. Vehicle Capture Procedures. Soldiers may not block a vehicle's path with their bodies to capture it. Soldiers who attempt to do so become casualties IAW their TESS casualty card. Catastrophic or safety killed vehicles, bunkers or fighting positions are completely destroyed and are of no intelligence value.

10. Combat Vehicle Search Procedures. Prior to any information being exploited, the capturing Soldier must first inform their OC/T of their intent to search the vehicle to the nearest covering OC/T. Once this has occurred, the OC/T, accompanied by the senior Soldier from the captured vehicle, will observe the inspection of the combat vehicle. On tracked vehicles, the inspection will entail the OC/T and the capturing Soldier mounting the vehicle and looking in the turret without entering the turret.

11. Other Vehicle Search Procedures. COB equipment or vehicles may be searched at any time, provided an OC/T or OPFOR/COB OC/T is present. BLUEFOR will not drive any COB vehicles. There are no safe areas in these vehicles, however TA-50, sensitive items, protective masks, TESS, and other accountable/personal property including pogeys, bait, tobacco, and any other item purchased by the OPFOR/COB will not be confiscated. If the BLUEFOR unit requests to impound the vehicle to a designated area, the driver of the detained vehicle will remain with the vehicle and drive it to the rotational unit's detention holding area. The vehicle will remain with the driver throughout the detention process until BHO

to MP's at echelons above the BCT. If detention occurs in vicinity of a town, the vehicle and keys may be turned over to the OPFOR/COB town leadership. If the vehicle being detained becomes inoperable for maintenance reasons, then the OC/T on the ground will contact an OPFOR/COB LNO to facilitate recovery of the vehicle by OPFOR/COB maintenance support assets. BLUEFOR may continue to evacuate the detained driver after he hands the vehicle over to the responding OPFOR/COB maintenance support assets. If a vehicle is damaged or destroyed by BLUEFOR or OPFOR actions, the BLUEFOR must replicate towing of the vehicle by show the OC/T the resources necessary and display the method they will use to tow the damaged vehicle.

12. **Intelligence Provided.** The OC/T will determine if any maps or overlays are reasonably available (visible) and direct the vehicle Soldier to provide it to the capturing Soldier. Radio frequencies set on any vehicle radio will always be considered reasonably available. Material provided can be copied on site, but will be returned to the senior Soldier of the captured vehicle.

13. **Quarantine and Return of Captured Equipment.** All captured equipment will be evacuated to the rotational unit's detention/holding area until they are processed and handed over to MP's at echelons above the BCT and/or released. Following BHO of the vehicle to MP's at echelons above the BCT, the vehicle will not reenter the area of operations for a minimum of six hours. All vehicles reentering the AO after the six hour period will do so competitively.

14. **Overview.** Detainees on the Division and Brigade "Detain, Suspect, Protect" (DSP) list must be reported immediately and processed to Division MP's within 24 hours from the time of detention. Brigade specific DSP lists will be forwarded to the 52ID G2 for review. Exploitation of all detainees at the DCP will be conducted by qualified HUMINT personnel, the brigade Tactical HUMINT Team (THT), IAW FM 2-22.3, FM 27-10, JP 3-63 and DODD 2310.01E.

15. **Movement of detainees** requires OC/T supervision or OPFOR/COB OC/T escort. Detainees mistreated by the rotational unit, to include failure to provide for basic needs and safety (food, water, and shelter), will be assessed as casualties and removed from the area.

16. All potential violations of the Geneva Convention, International Law, or 52ID directives, or any detention conducted without appropriate justification, will be investigated under the provisions of AR 15-6.

#### 17. Processing and Evacuation of Detainees.

A Minimum of two copies of DA Form 2823 (Sworn Statement) completed by Soldiers who participated in the detention:

- Apprehension Form

- DA Form 4137 (Evidence Document)

- Sworn statements from the detainee or witnesses (local nationals)

- DD Form 2708; Medical Documentation

- Pictorial evidence collected by the capture unit

- Explosives residue tests conducted

- DD Form 2745, Capture Tag.

18. **Detainee Review Board (DRB).** All BCTs are required to conduct a DRB for each detainee in-processed through their DCP/DHA-A. A DRB can review several detainee packets at a single board. The results of this board, with disposition determination, will be reported at 0800 daily during FOF. The report can be submitted in memorandum format or briefed via the CPOF BUA. If a memorandum is submitted it will be forwarded to the attention of the 52ID G3 and the PMO. A written request to extend the 24 hr detention timeline can be submitted and will be considered for approval if a valid justification is provided.

19. **Evidence Collection.** A minimum of one OC/T is required to cover down on the operation.

## **2-5 Imagery Intelligence (IMINT)**

1. The 3rd MI Center, 2nd MI Battalion, provides the primary instructors and technical and tactical advisors on Geospatial Intelligence (GEOINT). The National Reconnaissance Office (NRO) handles all national systems (e.g. satellites) used for collection. The 743rd and 513th MI Battalions provides Advanced Geospatial Intelligence (AGI) and National Geospatial Intelligence Agency (NGA) information and reach-back support during deployment.

2. AGI/MASINT Reporting and Dissemination Service (AMRDS). AMRDS is a website used to request and obtain MASINT/AGI products. The site is employed by 3d MI, NASIC, 743d MI BN, 513th MI BDE, and many others to disseminate regular imagery products and AGI products via JWICs and SIPRNET. Prior to requesting products, BCTs must obtain a customer account.

## **2-6 Technical Intelligence (Weapons Intelligence Teams [WIT])**

When programmed in the rotation replication of WIT reporting will provide feedback to each unit IED event in which the unit deploys the team. This analysis can be used to target specific IED makers within the scenario. See chapter 5-3 for more detailed explanation of reporting process.

## **2-7 Biometrics/Forensics**

1. Biometrics Automated Tool Set (BATS). The BATS database consolidates biometric data and biographical information of persons of interest into a searchable data base. BATS data is used in support of threat analysis, tactical operations, force protection, detainee operations, population control, base access, IED forensics operations, Special Operations, and local hire screening / intelligence. RTU may draw BAT computers.

2. The SEEK device is a portable biometrics tool used to obtain information during operations. The SEEK must be loaded or updated prior to all operations with the current “watch list”. Users can enroll, match or verify with the three primary biometrics; iris, finger and face.



## Chapter 3 Maneuver

- 3-1 Direct Fire Engagements
- 3-2 Penalty and Safety Kills
- 3-3 Fighting Positions and Bunker Positions
- 3-4 Dismounted Operations
- 3-5 Sniper Weapons Systems and Non-standard systems
- 3-6 Special Operations Forces
- 3-7 Urban Operations
- 3-8 Pyrotechnics and Munitions Replication
- 3-9 Searches/Destruction of Caches, Bunkers, and Buildings
- 3-10 Non-Standard Tactical Vehicles

### CHAPTER 3 – MANEUVER

#### 3-1 Direct Fire Engagements

1. TESS outcomes have precedence when determining the results of actions on the NTC battlefield. The following assessments apply:

- a. TESS rules the battlefield!
- b. Vehicles without TESS require a waiver signed by Commander, Ops Grp NLT than RSOI 3.
- c. If TESS become non-operational during a battle, OC/Ts will adjudicate as necessary.
- d. If TESS become non-operational between operations, the vehicle or Soldier cannot participate in any future operations until the TESS is fixed/replaced.
- e. OC/Ts will overrule TESS outcomes when TESS sensors are obscured.
- f. TESS does not adequately replicate fragmentation or ricochet behavior, or TESS clearly does not replicate battlefield conditions.
- g. No vehicle may be exempted from TESS engagement outcomes unless overruled by an OC/T.

2. BDA Assessment: Table 3-1 provides the categories of vehicle BDA.

Table 3-1 AWES-RF/TESS II BDA Assessment /Combat Vehicle Kill Indicator		
BDA Category	Battle Damage Assessment	Notification
Near Miss	Vehicle received ineffective fire	CVKI flashes 2 times
Mobility	Vehicle may not move further. If moving at the time, the driver will bring the vehicle to a safe halt immediately. The vehicle may continue to fire and communicate.	CVKI flashes 4 times.
Firepower	Vehicle may not continue to fire. The TESS transmitter will be disabled. Vehicle may continue to move and communicate.	CVKI flashes 4 times
Catastrophic	Vehicle is unsalvageable. All functions cease immediately. Note; Vehicles which are mobility kills and subsequently receive a firepower kill (or vice-versa) automatically become catastrophic kills.	CVKI Flash continuously and intercom announcement

<b>Penalty Kill</b>	<b>Failure to take the directed action for mobility kills will be detected by the NTC-IS and the vehicle will automatically receive a catastrophic kill as a penalty. This action will be recorded on the vehicle VDD.</b>	<b>CVKI flash continuously; requires OC/T to explain to the crew and chain of command.</b>
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**3. Vehicle Direct Fire BDA.** OC/T on the ground must move to the vehicle and inspect the VDD to ensure proper adjudication of each vehicle. The codes for each weapon system can be found in Table 3-2, TESS VDD Codes.

<b>Table 3-2, TESS VDD Codes</b>					
<b>Code</b>	<b>Weapon</b>				
<b>00</b>	<b>Controller Gun</b>	<b>13</b>	<b>155mm Howitzer</b>	<b>22</b>	<b>25mm M2/3 Bradley</b>
<b>01</b>	<b>Maverick Missile</b>	<b>13</b>	<b>122mm Howitzer</b>	<b>22</b>	<b>ZSU 23-4</b>
<b>02</b>	<b>Hellfire Missile</b>	<b>13</b>	<b>122mm Rocket BM21</b>	<b>23</b>	<b>20mm Vulcan</b>
<b>03</b>	<b>AT-3 (Sagger) Missile</b>	<b>13</b>	<b>152mm Howitzer</b>	<b>23</b>	<b>30mm BMP2</b>
<b>04</b>	<b>60mm, 81mm, 4.2in Mortar</b>	<b>14</b>	<b>2.75in Rocket</b>	<b>24</b>	<b>M2, M85 .50 cal Machine Gun</b>
<b>05</b>	<b>M15 AT Mine</b>	<b>14</b>	<b>57mm Rocket</b>	<b>24</b>	<b>12.7mm Machine Gun</b>
<b>07</b>	<b>TOW Missile</b>	<b>14</b>	<b>73mm Cannon BMP1</b>	<b>25</b>	<b>SA-9</b>
<b>07</b>	<b>AT-5 (Spandrel) Missile</b>	<b>15</b>	<b>VIPER LAW</b>	<b>25</b>	<b>SA-13</b>
<b>07</b>	<b>AT-8 (Songster) Missile</b>	<b>16</b>	<b>120mm M1A1/2 Tank</b>	<b>25</b>	<b>Chaparral</b>
<b>08</b>	<b>Dragon / Missile</b>	<b>17</b>	<b>90mm Recoilless</b>	<b>25</b>	<b>ASET SA-8</b>
<b>09</b>	<b>Javelin Missile</b>	<b>18</b>	<b>105mm, 152mm Howitzer</b>	<b>25</b>	<b>ASET SA-9</b>
<b>10</b>	<b>M21 AT Mine</b>	<b>18</b>	<b>203mm Howitzer</b>	<b>26</b>	<b>Stinger</b>
<b>10</b>	<b>125mm T72, T80 Tank</b>	<b>19</b>	<b>40mm Grenade</b>	<b>27</b>	<b>M16A1, M60MG, M240MG</b>
<b>11</b>	<b>M18 Claymore Mine</b>	<b>20</b>	<b>Rockeye CBU</b>	<b>33</b>	<b>SA-14</b>
<b>11</b>	<b>M16A1-AP</b>	<b>21</b>	<b>30mm A10 GAU-8</b>	<b>34</b>	<b>ZSU 23-4 Radar Mode</b>
<b>12</b>	<b>105mm M1, M60 Tank</b>	<b>21</b>	<b>30mm AH-64</b>	<b>Codes subject to change due to TESS updates</b>	

#### **4. Special Instructions.**

**a. Second Lives.** Commanders, primary staff officers, platoon leaders, and Network Operations Warrant Officers are authorized second lives. The leader must transfer to another vehicle if their assigned vehicle is assessed as damaged or destroyed. Limit one (1) life per battle with OC/T approval.

**b.** The dismounted portion of infantry/ engineer squads and other vehicle occupants will be allowed to continue the battle if their IWS/MIK were not activated.

c. **Assessing OPFOR.** OC/T will explain to the OPFOR crew or Palehorse OC/T why the intrusion and notify the critter team TAF, who will inform the DTOC and Blackhorse TAF.

d. **Vehicle TESS Exceptions.** Not all vehicles associated with role-players, particularly some media vehicles, have TESS. Role-player vehicles without instrumentation remain subject to battlefield effects (as determined by the OC/T). The occupants within the vehicle will wear, at a minimum, the TESS torso harness. Any effects on the personal TESS will occur against the vehicle as well.

e. **Contractor Vehicles.** All Contractor vehicles that are not part of role-play will obtain a decal at the IP checkpoint prior to entering the training area. All contractors whether a role player or not must pass through BLUEFOR Traffic Control Points. OC/Ts who witness a contractor attempting to bypass a TCP will stop the contractor vehicle and re-direct them through the TCP.

5. **Assessing Casualties.** OC/T issues the casualty cards based on events or attacks. Driver and TC will be assessed as RTD and will remain with the vehicle. As a minimum OC/Ts must annotate OC/Ts call sign, injury by type and point of injury time, detailed instructions are found in Chapter 8.

6. **Physical Capture.** When a BLUEFOR Soldier intends to detain a role-player, that Soldier must inform an OC/T of the intent to detain and the planned method; provide the necessary force (number of Soldiers) required, and provide the necessary equipment (flex-cuffs, rope, zip-strips, etc.). Once the BLUEFOR Soldier demonstrates the ability to detain, an OC/T will facilitate the detention by placing his hand on the shoulder of the detainee and stating, "You are now detained". The role-player will replicate the restrictions and not attempt to escape, unless directed to do so by an OC/T. Further discussion in Chapter 2-5.

7. **Recovery and Reconstitution.** The 07 of the affected team will use their discretion to authorize immediate resurrection. Further discussion of Reconstitution is in Chapter 7.

a. **BLUEFOR.** OC/Ts will control resurrection of BLUEFOR systems. The 07 of the affected OC/T team on the ground will make final determination.

b. **OPFOR.** OPFOR/COB OC/Ts and/or their TAF will coordinate resurrections prior to entering the close fight, by exception. DTOC will approve all requests.

### **3-2. Penalty and Safety Kills.**

1. **Penalty kills** are assessed by the OC/T on the ground. The three categories:

a. **TESS Not-To-Standard, Charging and Safety Infractions** are assessed by the OC/T on the ground. Cases of suspected cheating will be reported through both the RTU chain of command and OC/T channels.

b. **A BDA limitation violation** occurs when a vehicle continues to shoot, move or communicate after being assessed FIREPOWER, MOBILITY, or COMMO Kill, respectively. CTC-IS assesses this penalty automatically when properly functioning.

d. **A boundary violation** may be assessed as a penalty kill. Additional guidance is in Annex C, Implementing Directives, Chapter C-2 Maneuver.

e. **Berm Rule** prevents firing from a position that allows the laser to fire but does not replicate the tracking of the missile or space necessary for ordnance to clear. Not replicating the tracking of the missile is cheating and will result in a penalty kill of the vehicle with loss of all ammunition on the vehicle.

2. **3/5/10/50M "Safety Kill" Rule and Accidental Charging.** OC/Ts may assess casualties for safety violations or unsafe acts. OC/T assess casualties based upon the severity of the safety violation. Due to safety considerations, close combat is not permitted. Accidental situations will occur when forces come into close proximity. These point blank engagements will be assessed by OC/Ts. Rules follow:

a. Immediate Action. When a target appears at less than the prescribed separation distance, vehicle drivers will stop immediately and their TCs will cross their arms over their face to signify that they are engaging. The vehicle gunner will traverse the turret and/or weapon system at least 90 degrees away from the target being engaged and fire to emit a signature. Crew must clear personnel within 50 meters of the MGSS and/or ATWESS blast area before firing. Dismounted Soldiers will halt and cross their arms to signify that they are engaging.

b. Assessment. OC/Ts will make an evaluation based on the weapon systems involved and assess vehicles and/or personnel on either side as appropriate. The killing vehicle(s) or personnel will be directed to expend rounds in a safe direction to account for the kill(s).

Table 3-3 3/5/10/50M Safety Kill Rule	
Range	Who
Within 3m	No firing blanks inside buildings or caves
Within 5m	No dismounts firing blanks in the open
Within 10m	No vehicle with 10m of subterranean entrances/exits to prevent exhaust from entering the cave.
Within 50m	No vehicle engagements, specifically with MGSS or ATWSS. Vehicles will not maneuver within 50m of enemy dismounts.

3. Stealth Kills. BLUEFOR and OPFOR Soldiers under OC/T supervision can make kills of vehicle crews or sleeping dismounted Soldiers. Rules follow:

a. Preparation. An OC/T must be present before the unit (OPFOR or BLUEFOR) executes the silent kill. The Soldier informs the OC/T that he intends to make a silent kill and identifies the vehicle crew or personnel. The OC/T confirms that the Soldier has the appropriate weapon(s), such as a bayonet, and method.

b. Execution. The Soldier, under the control of the OC/T, will then move to the vehicle/ personnel until he is within five meters. At no time will the Soldier make physical contact with any Soldier or Vehicle during an attempted silent kill.

c. Assessment. If successful, the OC/T will awaken the victim, and assess him as a KIA. Soldiers killed in this way may not use any of the vehicle or other radios to communicate their situation. If the “killer” is compromised during his attempt, the OC/T will assess casualties as necessary.

### **3-3 Fighting Positions and Bunker Positions.**

1. Fighting Positions. If in a fighting position when destroyed, crews will pull out of vehicle fighting positions with turret raised over back deck.

a. Camouflage Nets. Camouflage nets may not obscure an operational and capable TESS system.

b. Intentional. Using inadequate cover to defeat the TESS laser is not authorized: such as, brush, smoke, and dirt berms of insufficient dimensions.

c. Ricochet and Fragmentation Effects. An OC/T’s assessment will be made when direct fire weapons are shooting at concealed, but either uncovered or partially covered infantry.

2. Bunker Engagements. Bunkers must be built to standard in accordance with applicable TMs. Direct fire against bunkers will be assessed in one of two ways:

a. TVC available, Tactical Vehicle Systems (TVS) kits will be mounted on the bunker. OC/T will check TVS TESS prior to LD time to confirm it is operational. The TESS will assess kills.

b. TVS Unavailable, the results will be determined using Table 3-4.

c. Bunkers not equipped with MITs or IPPD are assessed on the first shot, provided the bunker is within range and can be engaged with a weapon system; ex. Javelin within line of sight and verified by OC/T

Table 3-3 Bunker Engagement Results		
Range	Elevation	Rds to Destroy
2000m or less	Bunker level w/tank	1
2000m to 2500m	Bunker level w/tank	2
2000m or less	Bunker higher than tank	2
2000m to 2500m	Bunker higher than tank	3

### **3-4 Dismounted Operations**

1. All personnel will wear an Individual Weapon System (IWS) with associated harness, halo, and Small Arms Transmitter (SAT). When a soldier is assessed as a fatality, the weapon will not function until the soldier re-associates the weapon with a harness.

2. Every squad and each separate dismounted element will have a minimum of one operational Man Instrumented Kit (MIK). Personnel without a MIK must remain within 300 meters of a vehicle DCI, MIK, or an OC/T.

3. Initial Position Locator (PL) Lost Condition. When the PL is lost on any dismounted patrol element, accompanying OC/Ts or OPFOR /COB OC/Ts will report locations every 15 minutes or 400 meters of movement. This will allow the symbol to be player positioned for AAR purposes.

#### **4. Uniform.**

a. RTU Commander determines the uniform for Soldiers. Normally RTU Soldiers wear the following: Duty Uniform (ACUs/DCUs/BDUs/Nomex, Service Uniform), ACH, Approved Ballistic Eye Protection, IBA w/plates, Fire Resistant Gloves and Earplugs/Ear Protection

b. OPFOR, Host Nation and Guerilla forces will wear uniforms IAW the 52<sup>nd</sup> ID OPORD. OPFOR Soldiers will wear appropriate PPE, harness and halo while engaging in combat.

c. Civilians on the Battlefield will wear a variety of clothing consistent with the scenario. Civilians will wear TESS torso harnesses without a halo. Civilians will not carry weapons.

d. Insurgent personnel may remove their halo when blending in with population and out of contact with RTU. If carrying a weapon, the insurgent will don his halo to allow for accurate and fair TESS play.

5. Soldiers issued MIK harnesses that become casualties, will exchange them for IWS harnesses with Soldiers who have not been hit. All dismounted infantry elements must keep their MIK with them at all times, regardless of the casualties they suffer.

6. Exceptions to MIK requirement for OPFOR units will be made by DTOC. The senior team trainer will make exceptions for BLUEFOR units.

7. Minimum manning of dismounted OPs is two Soldiers.

8. OC/T will adjudicate all non-standard weapons to 50% of their maximum effective range.

9. MEDEVAC. Adequate means of life support, consisting of either available Air MEDEVAC, or a minimum of one wheeled and/or tracked vehicle will accompany dismounted elements operating more than five kilometers from friendly mounted units. If operating within five kilometers of friendly mounted elements, a dismounted element will ensure it has radio communications with the mounted element. If

communication is lost between the dismounted and mounted elements, the dismounted element must return to their assembly area. OC/Ts have the ability to stop a dismounted operation if the unit preparation and lack of logistical support places undo risk to life, limb, or eyesight to the RTU Soldiers.

### **3-5 Sniper Weapons Systems (SWS) and Non-standard weapons systems**

1. RTU elements may have a wide variety of SWS at their disposal that are organic to their unit. Due to the limitations of the TESS system, weapon transmitters are not available for all SWS.

2. If the RTU wishes to use the M107, .300 Win mag., or any other organic SWS without a TESS transmitter, the RTU and OC/T will take the following actions:

- a. The SWS operator will designate his target to the OC/T.
- b. The OC/T will identify and confirm the target.
- c. The spotter or another member of the Sniper Observer (SO) position will remove the BFA from their M4 and fire one blank round.
- d. The Palehorse OC/T will then adjudicate the shot. This process will be repeated until the engagement is complete. The spotter or another SO position member will not engage targets with his weapon until he has replaced his BFA.
- e. Replicating the shot in the target area is an essential step to the adjudication. The OC/T in the SO position will relay target description to the OC/T in the target area who will then complete the adjudication once a report is heard from the spotter's or another SO position member's weapon.

\*At no time will the SWS operator fire blank .50 cal from the M107 or any other .50 cal SWS.

3. RTU elements wishing to use non-standard weapons during rotation must notify NTC NLT D-120 so that the appropriate TESS equipment can be modified for use on the weapon or a training aid can be devised to replicate the weapons signature. Weapons that fire the 40mm grenade will not be used during force-on-force because there is no accurate way to replicate their effects. Additionally, sub-machine guns and pistols will not be used during force on force but they may be utilized during UTM engagements.

4. OC/Ts will adjudicate at a range of 50% of the weapons maximum effective range. This replicates the lack of accuracy due to weather and shooter skill.

5. Recoilless Rifles are replicated like a Javelin. The OC/T drops one grenade simulator for first round fired and then every third round for signature. OC/T will be present in order to ensure the firing Soldier was properly aiming and available ammunition is on-hand. Sandbags filled to 1/3 full will replicate 84mm rds.

### **3-6 Special Operations Forces (SOF)**

1. The integration and interoperability of SOF and Conventional Forces is of paramount importance within the contemporary operating environment. Each force has its own unique capabilities which, when combined, can achieve objectives not otherwise attainable. SOF OC/Ts should coach their elements towards working with conventional forces on a daily basis whether it is operationally or in the sharing of information. USSOCOM Publication 3-33 v. 3, *Multi-Service Tactics, Techniques, and Procedures for Conventional Forces and Special Operations Forces Integration and Interoperability*, is a great tool to help point the SOF RTU in the right direction.

2. The Commander Operations Group (COG) is the approving authority for all SOF operations at the NTC and the only authority who may grant exceptions to the standards outlined in this chapter.

3. Foreign SOF may participate in training at the NTC; a sponsoring U.S. SOF unit must accompany them. Any foreign unit training at the NTC requires HQDA, G-3/5/7, approval. AR 350-50, Combat Training Center Program provides guidance for foreign unit participation.

4. Special Operation Forces (SOF) will operate under direct 52ID control. Liaison teams with maneuver elements allow training in coordinating force protection, CSAR, or infiltration/extraction type missions.

5. SOF OC/T act as the outgoing SOF element and perform RIP TOA with their element prior to TD01.

6. Uniforms: At no time will members of the SOF RTU wear MODs or flight suits anywhere within the Fort Irwin Cantonment Area (Main Post) prior to, during or after rotation. The COG reserves authority to grant relaxed grooming standards before, during or after rotations. If the RTU has a preexisting policy of relaxed grooming standards signed by the first O6 in their COC, a copy of the policy must be provided.

7. Rotational SOF elements are authorized to operate Indigenous Operating Vehicles (IOV) in civilian attire while in the box in support of the SOF Commander's training objectives. If the IOV is a contracted vehicle and therefore unable to be instrumented with TESS, the occupants of the vehicle will operate it with the windows down and will wear the TESS torso harness. A SOF OC/T must ride in the back seat of the vehicle to adjudicate additional battlefield effects as they arise.

### **3-7 Urban Operations (UO)**

1. Rooftop Operations. Personnel are allowed onto the roofs of buildings for sniper employment and OPs under at the discretion of the OC/T team on the ground. Air insertions onto buildings are discussed in Chapter 9, Aviation.

2. There are no open fires (to include cooking fires, warming fires, and candles) allowed within 25 meters of a building or in the buildings themselves.

3. Flame Producing Pyrotechnics. No flame producing booby traps of any type will be installed in buildings. All other booby traps will be dismantled when the element vacates the building. Anytime a booby trap is utilized in a building, a means to extinguish any possible fire will be present.

4. Effects. Weapons effects will be assessed against structures IAW a realistic outcome based on the weapon system and construction of the structure as follows:

<b>Table 3-5a Weapons Effect Adjudication</b>				
<b>Distance</b>	<b>5.56mm</b>	<b>7.62mm</b>	<b>.50cal</b>	<b>M203/MK-19</b>
Less than 25m	Will penetrate Wood Paneling, Sheetrock, Plaster	Will penetrate 13in of wood; 2 in of concrete; 5 in of dry/loose sand	Will penetrate double sandbag, triple bricks; 18in of reinforced concrete; vehicle bodies; all wooden structures	2in of hardened steel; double sandbags; double cinder blocks; 12in of wood.
Less than 50m	Will <b>NOT</b> penetrate one thickness of sandbags, ammo cans or cinder blocks filled with sand, or one thickness of bricks	Will <b>NOT</b> penetrate one thickness of sandbags; 55 gallon drum filled with sand		

### **7. Building Damage.**

a. Assessment of building damage and casualties according to the following:

**VBIED: Building loss within 25m and Casualties within 35m**

**Military Ordnance: Building loss within 15m and Casualties with 20m**

**HME: Building loss within 15m and Casualties within 20m**

**Improvised Mines: Building loss within 20m and Casualties within 15m**

b. Building Repair. Destroyed buildings will be marked with orange tape across all apertures (doors/windows). Player units (this includes BLUEFOR and COBs) can repair and/or reconstruct a building, if physical means are present. OC/T Team 07s retain final approval authority.



c. **Clearing Operations.** If dismounted personnel are utilized to clear buildings, an OC/T must be present for the mission. Eye protection is required at all times during UO. Soldiers not wearing eye protection in a UO environment will be immediately safety killed. The minimum distance for combatants engaging one another within the same structure is 3m.

8. **Demolitions and Dynamic Entry.** All units are required to conduct reconnaissance of the proposed target and gather the critical information to calculate the amount of explosives needed to destroy the target. Units must use the appropriate formulas IAW FM 3-34.19, to include Minimum Safe Distance (MSD) calculations. OC/T's verify demolition calculations and placement of charges. Demolitions Effects Simulators (DES) are the preferred training aid at the NTC because of they produce sufficient visual and sound effects to enhance battlefield realism.

9. Each town is allowed one "off-limits" structure that is exempt from BLUFOR searches. This area will be one building, structure, or Anteon building; it must be a stand-alone structure. It cannot be a room or floor within a two-story building or attached to another structure. No weapons of any kind that are "in play" will be stored in the area designated as "off-limits". The "off-limit" area is manned with a minimum a two-person radio watch. The town OIC will coordinate with the town OC/T and inform him/her of the location of the "off limit" area. The area will be clearly marked with a VS-17 panel with the word "off limit area" typed on paper, laminated, and taped to the VS-17 panel.

10. Tracked vehicles are authorized to maneuver in urban areas and engage targets. The following restrictions apply:

- a. Pivot/Neutral steering is unauthorized within towns and on hardball road networks.
- b. The minimum distance between vehicles and personnel outside of buildings is 5m. An OC/T must be present with any tracked vehicles operating within 1000 meters of an urban area.
- c. No physical contact between vehicles and any structures is authorized.
- d. Units must ensure vehicles do not drive over subterranean structures.

11. **Subterranean Operations.** Subterranean Training Sites on Fort Irwin: Numerous underground tunnels can also be found vicinity the Town of Medina Jabal/Ertebat Shar; NV 367118. Use of simulated pyrotechnics and demolition in the complex would cause severe overpressure, see section 3-7 for more information. Table 3-6 lists training complexes considered to be impervious to normal tube launched artillery.

**Table 3-6b**  
**Subterranean Training Sites representing solid construction dug into granite**

Complex Name	Location	Complex Name	Location
Ghar Al Raid/Haji Ghar	NV139151	Ghar Ismok La/Ne Nam Ghar	NV376975
Albai/Alpine Ghar	NV248272	Ghar Tassa Bihar	NV570003
Ghar Bruno	NV 370221	Ghar Tassa Al Arozz/Brenj Kasa Ghar	NV259151
Ghar Wadi Khafi/Pot Dara Ghar	NV430080		

\* The Challenger Buried CONNEX in Training Area LF16, Grid NV433326 represents a Subterranean Command Post of earthen construction. Demolitions and live fire training is prohibited. A collapse is likely with the use of grenades and even small amounts demolitions. The subterranean environment is susceptible to cave-in with heavy volumes of tube launch artillery > 155mm.

### **3-8 Pyrotechnics and Munitions Replication**

1. **Pyrotechnics.** Pyrotechnics include standard smoke, booby traps, flares, etc.; to include, ATWESS and HOFFMAN/MGSS.



a. Booby Traps. Only NTC approved pyrotechnics are authorized for use by the RTU. All pyrotechnics to be used by the Rotational Unit must be approved by an OC/T prior to it leaving the RUBA.

b. Subterranean: The only pyrotechnic booby trap authorized is the M117 booby trap simulator. All other booby traps are to be non-lethal and approved by an OC/T. No use of CS gas or smoke is permitted inside or within 10 meters of a cave or tunnel complex. If smoke or CS gas enters the cave due to wind directions and drifting the cave must be evacuated immediately. These gases in confined areas can displace oxygen rendering all gas masks (except respirators with oxygen tanks) useless inside. Rotational units may clear tunnels with smoke by showing an OC/T that they have the capability. The unit must still maneuver within throwing distance of the cave entrance with an OC/T present. The rotational player will then expend the smoke grenade by throwing it a safe distance away from the cave complex. Only after this step is executed, will the OC/T adjudicate at his/her discretion.

c. Replicate BLUEFOR ADA missiles with a WHITE star cluster; OPFOR with a GREEN star cluster. OC/Ts must ensure projectiles travel away from the air space corridor. Never discharge MGSS, ATWESS or star cluster within 500m of aircraft. Reference CH 6, ADA for a more detailed discussion.

d. The following restrictions are in effect for Smoke and Flares:

- (1.) Red Smoke/Red Star Clusters: Real world emergencies.
- (2.) CS smoke/grenade: CBRN effects.
- (3.) Purple smoke: Insertion of SCATMINE minefields.
- (4.) Black Smoke: 90049004Catastrophic and Mobility Killed Vehicles.
- (5.) Soldiers will not possess CS or simulators.

2. Hand Grenades. MRE hand grenades replicate all hand grenades during force-on-force training.

a. Production. OC/Ts verify successful completion of the supply requisition process before allowing the unit to begin construction of MRE hand grenades. MRE Grenades are physically produced at the company level. Each MRE hand grenade will consist of an MRE bag filled one quarter full with loose sand and taped shut. An unbroken chem-lite will be taped to the top to replicate the hand grenade pin. Table 3-6 lists the colors used to distinguish grenades:

Table 3-7 MRE Hand Grenades by color and type			
Chem-lite Color	Type	Range	Effects
Blue	Concussion (Mk3A2)	2-5m	Effected personnel cannot react for 5 sec; Can damage equipment; No damage to structures
Yellow/Green	HE/FRAG (M67)	5-15m	Kills personnel within 5m; Effects on personnel to 15m
Red	Stun (M84)	2m	Stunned personnel cannot react for 5 sec; No damage to structures, vehicles or equipment
White	Incendiary (AN-M14 TH3)	Impact; 40 sec	Destroys shelters, vehicles and equipment; no direct effect on personnel

b. Use of Projectiles. Absolutely no object will be thrown or fired at an opposing player. Any other type of projectile must be pre-approved by an OC/T and must meet training requirements. For further guidance reference Chapter 5, Paragraph 5-2, Training Demolitions.

(1.) Execution. To ensure proper effects are replicated, grenade throwers will display the grenade to be employed to an OC/T or OPFOR/COB LNO. If an OC/T or OPFOR/COB LNO is not present, or the grenade is not shown beforehand allowing proper identification, then the grenade will default to a fragmentary grenade.

(2.) Arming. To arm the grenade, the Soldier will break the chem-light (to replicate pulling the pin) and lob the grenade at the intended target. Grenades are employed in accordance with the tactical situation, but are not to be thrown at a high velocity at personnel. Soldiers will yell 'frag out', prior to employing a grenade.

(3.) Incoming grenades may not be picked up and thrown back. Expended grenades are policed up by OC/Ts to ensure they are not reused.

3. Direct Fire Signature Requirements. All weapon systems will emit a "signature" to replicate the ammunition discharge when firing. Vehicles not emitting a signature may be assessed as a Penalty Kill.

a. A MGSS, ATWESS, FLASHWESS, or blank round must be fired during direct fire engagements. If the system runs out of signature rounds or is non-operational, it may not fire.

b. Crews may only load simulator ammunition equal to the actual carrying capacity: ex, 17 rounds (M1A1) or 18 rounds (M1A2/SEP) into the MGSS replicates the number of rounds in the ready rack. Once expended the crew must reload the MGSS to replicate cross leveling from the semi-ready rack.

c. Vehicular mounted machine guns, which emit a TESS signature without firing blanks (example, the T80 coaxial machine gun), must discharge a MGSS for every 100 machine gun rounds fired.

d. When the MGSS rack is expended on vehicles in contact, the vehicle will immediately move to cover and reload. Defensive fire to provide protection while actively seeking cover is authorized.

#### 4. Missiles:

a. AT Weapons Back blast. AT weapons fired from inside buildings must meet the back blast and clearance requirements listed in FM 90-10-A. Soldiers who are within the back blast area, or in an area that does not meet the clearance requirements when the weapon is fired, will be assessed as casualties IAW the TESS card given to them by a OC/T.

b. Javelin Anti-tank Guided Missile. The Javelin missile will be replicated by the Field Tactical Trainer (FTT), the Command Launch Unit (CLU) and the Simulated Battery Coolant Unit (SBCU).

(1.) Javelin is equipped with an Anti-Tank Launch Effects Simulator (ALES).

(2.) Signature. A hand grenade simulator will be thrown for the first and every third Javelin round fired, within 50m of the gunner to allow engaged unit to acquire the signature.

(3.) Ground to Air engagement signature. OC/T's will replicate BLUEFOR with a WHITE star cluster for the first and every fourth Javelin round fired; OPFOR with a GREEN star cluster for the first and every fourth Javelin round fired. Never fire within 500m of aircraft.

(4.) Units receive credit for one Simulated Battery Coolant Unit (SBCU) per round (Field Tactical Trainer and/or SR). Javelin gunners may carry one additional SBCU as a spare. Expended spare SBCUs will be collected by OC/Ts and re-issued after verification of appropriate documentation.

(5.) Additional rounds. Replicated by a 21.6 pound sandbag with lot number. Lot number ensures proper procurement through supply channels. Care needs to be taken to ensure FTTs are programmed to reflect accurate round counts. The FTT counts as a single round.

c. TOW 2b Top Attack Adjudication. Increased range and capability will require more OC/T manual adjudication. With the inclusion of the TOW 2B and TOW 2B Aero (wireless top attack missile), OC/Ts will need to adjudicate based on munitions, range, and type of target engaged. For engagements where top attack mode is utilized (standard mode for TOW 2b), OC/Ts will verify all systems operated properly.

5. Once the signature for the screen is established, residual WP burning on the ground will remain in play for 10 minutes following the final round being fired for the smoke fire mission. The OC/T on site will track the time. If dismounted Soldiers pass through the smoke screen, defined by the smoke cloud and direction of drift, they will be assessed as casualties. Wheeled vehicles driving through the area will be assessed as mobility kills. If the vehicle does not “button up” or have the ability to do so, then all personnel inside the vehicle will be assessed. Tracked vehicles may pass through the WP area without penalty. Any exposed personnel within an unbuttoned-up vehicle will be assessed as casualties.

### **3-9 Searches/Destruction of Caches, Bunkers, and Buildings**

1. Caches are subject to search, capture, and destruction by BLUEFOR.
2. If the capturing unit desires to destroy a supply stockpile/cache; they must show the OC/T the resources necessary to accomplish the destruction. The OC/T marks the supplies as destroyed and notifies DTOC to arrange for evacuation of the notionally destroyed supplies.
3. If the capturing unit desires to evacuate and retain/exploit accountable property, only simulated weapons and ammunition, or documents of intelligence value may be taken. Items will not be taken from a cache without an OC/T's knowledge.
4. Off limits areas will be clearly identified by the town OIC and communicated to OC/Ts.
5. Safe Areas. Infiltration and ex-filtration from FICA will be conducted using organic vehicles and will be competitive. If a BLUFOR unit is in pursuit of a guerilla element enroute to FICA and correctly reports the guerilla actions to its higher headquarters prior to the guerillas entering FICA, a 1/3 attrition will be applied to the guerilla element. The 1/3 attrition is attributed to action by friendly adjacent units and will be reported to the rotational unit by the DTOC. During the rotation (RSOI-1 through TD 14) the area between the “light line” and the LSA/RUBA is competitive including the trail leading from the Regimental motor-pools to Garlic Springs (Vic NU326986). This is further described/defined as Barstow Road SW from the “light line” to the intersection of Barstow Road and Outer Loop South to 5<sup>th</sup> Street and then South again to the Draw Yard. A “line in the sand” extends from vicinity NV28850245 to NU29000130 to NV27500100. Guerillas must be northwest of this line to be considered in a “safe area”. Guerillas may be engaged anywhere south of the previously mentioned “line in the sand”. The guerilla forces will not be pursued into FICA.

### **3-10 Non-Standard Tactical Vehicles (NSTV)**

1. The SOF RTU may utilize NSTVs while conducting operations during the rotation. If the NSTV is not equipped with a compatible TESS system, all occupants will wear the TESS torso harness with the windows down. RTU personnel are authorized to conduct live-fire from NSTVs with the appropriate Deliberate Risk Assessment Worksheet and Safety Waiver approval prior to conducting of the training.
2. RTUs are authorized to operate CCMs and ATVs at the NTC during rotation. These vehicles will abide by the speed limits for wheeled vehicles outlined in Chapter 15. All CCM and ATV operators will be licensed at home station and a memorandum certifying their training will be forwarded to Ops Grp Plans. Operators must also be certified to operate their CCM and ATV during hours of limited visibility with NOD's. Operators will wear gloves, protective eyewear, and ballistic helmet. (D.O.T. approved protective helmets are also authorized).

## **Chapter 4**

### **Fire Support**

- 4-1 Mission Command**
- 4-2 FA Organization**
- 4-3 Fire Control**
- 4-4 Weapons Locating Radars**
- 4-5 OPFOR Artillery Replication**
- 4-6 Laser Operations**
- 4-7 Precision Munitions**
- 4-8 Artillery/Mortar Safety**
- 4-9 Manual Artillery Assessment Tables**
- 4-10 Crater Analysis**
- 4-11 Artillery/Rocket Delivered Scatterable Mines.**

#### **4-1 Mission Command**

1. **Command.** The field artillery headquarters for all NTC rotational units is the 52ID DIVARTY / X Corps Artillery Headquarters. The Senior Fire Support Combat Trainer (Wolf 07) is the 52ID DIVARTY Commander, X Corps Artillery FSCoord, and the force field artillery commander, who serves as the fire support coordinator (FSCoord) for the force commander. Wolf 07 retains approval authority on all fire support matters at NTC as the senior fire support combat trainer. Warrior 27 serves as the 52ID Division Fire Support Officer.

2. The Commander, 52ID with the assistance of the DTOC, controls field artillery echelons above brigade.

#### **4-2 FA Organization**

Rotational maneuver brigades will deploy with their organic field artillery battalion and organic mortars. Units may not add additional fire support assets without the approval of the Commander, Operations Group.

#### **4-3 Fire Control**

1. **BLUFOR.** The BCT/RCT FSE will maintain FM voice and digital communications with 52ID/X Corps FSE at all times. In order for OC/Ts to place a unit into a Red Indirect status, the following must occur:

An OC/T must be present in order to fire. Prior to firing a mission or subsequent corrections, the FDC must provide the OC/T with the artillery mission card listing for replication and casualty assessment during force on force

Target number	Target location and altitude
Pieces to fire	Special instructions
Type of projectile	Charge
Distribution (Sheaf Type)	
Number of rounds/rockets	Fuse time setting when applicable- (LFX only)
	Range to fuse function (ILL) (LFX only)
Target description	Range to impact (ILL) (LFX only)
Type of fuze	Max ORD (LFX only)

2. During FOF, the mission will be replicated as requested, regardless of possible fratricide.

3. **Weapon and Ammunition Information.** Ammunition Information and Muzzle Velocities will be applied at all times in order to conduct Fire For Effect (FFE) missions during Force on Force. Muzzle Velocities can be derived by any means during FOF, as specified in TC 3-09.81, Chapter 4 (Muzzle Velocity Management). This includes Calibration, Subsequent-Lot Inference, Predictive Muzzle Velocity

## Technique and Estimating Shooting Strength (Ch 4, Section III).

### 4-4 Weapons Locating Radars

1. **Initialization Data.** Actual radars and the controlling FA headquarters of notional radars must provide the following initialization data for all zone data to the 52ID Fires Brigade Counterfire Officer (Wolf TAFF). The grid location, azimuth of search with left and right sector limits, mask angle, and target block must all be submitted along with the grids and activation times of any zones that will be put in the system. Updates are provided as needed. As with fire missions, operating data, and execution performance (survey accuracy, procedures, screening crests, etc.) is provided to the TAFF.

2. **Acquisitions.** Actual radars and the controlling headquarters of notional radars that are ready to observe will receive hostile fire unit locations and impact predict locations for enemy fire missions which occur during cueing periods and are within the provided radar search sectors.

3. When the OPFOR has the systems to acquire the radar, acquisition is determined by duration of radiation and type of radar site. If the radar system radiates in excess of the maximums shown in Table 4-3-1 without displacing, OC/Ts will report through enemy fire support channels.

Table 4-3-1 Radiation Maximums		
Type of Site	Cumulative Radiation	Continuous Radiation
Opt. Radar Site	15 min	2 min
Opt. Screening Crest (only)	8 min	2 min
Other Site	2 min	2 min

### 4-5 OPFOR Artillery Replication

1. **Wolf TAFF personnel support:** During the Force on Force portion of NTC Rotations (typically RSOI5-TD10), the 11<sup>th</sup> Armored Cavalry Regiment provides 24 hour coverage (at a minimum 1xSoldier with a Secret or above clearance per 12 hour shift) to assist in data entry, processing OPFOR fire missions, movement orders, ammunition resupply and radar operations in the Wolf TAFF. Wolf TAFF provides the workspace, RCS radio, computers and necessary on the job training.
2. **OPFOR radar:** OPFOR vismod radar replicates either 1L219 or 1L220 radar systems as determined by the CBI. The system's range is determined by an average of the ranges for the types of munitions available to the rotational training unit to account for challenges in the CT-OIS system (I.E At this time the CT-OIS can only track 1 x max range per system, regardless of round type). This results in the 1L219 having a range of 22 KM and the 1L220 having a range of 30 KM.
  - i. Queuing schedules will replicate actual radar queuing schedules of the radar (either 1L219 or 1L220) as determined by the CBI.
  - ii. Positioning and radar deployment orders (RDOs) are determined by the Blackhorse Fires element IAW Blackhorse SOP and sent to the Wolf TAFF for input into CT-OIS. To acquire rounds the radar must not be masked by terrain (I.E. the radar will not acquire rounds if it is positioned behind Tiefort Mountain).
  - iii. Reconstitution for OPFOR radar occurs automatically at the start of each phase. During open phases, destroyed OPFOR radar is reconstituted after a 48 hour period (accounting for the time needed to assess the original radar as destroyed and the orders process and movement time for a new radar to be assigned) has elapsed or

earlier per W07 assessment that training value would be maximized through an improvement in OPFOR counterfire capabilities.

**b. Constructive asset emplacement/displacement times and movement:**

- i. 9A51/ Prima emplacement/displacement times are 3 minutes each.
- ii. 2S19 emplacement/displacement times are 6 minutes each.
- iii. 2A65 emplacement/displacement times are 10 minutes each.
- iv. These times account for real world challenges such as crew proficiency, terrain, fatigue etc. Wolf 07 retains approval to lengthen or reduce the emplacement/displacement times depending on RTU performance, battlefield conditions and other variables.
- v. Constructive batteries move at a rate of 20 KPH. Unless a specific route is directed, the operator moves the unit along the most direct route possible terrain permitting.

**c. Constructive artillery ammunition resupply:**

- i. All guns/launchers start each phase with 50 rounds.
- ii. Guns/launchers cannot exceed haul capacity of 50 rounds (I.E. no gun can have greater than 50 rounds on hand)
- iii. Ammunition cannot be “stored on the ground.” Resupply will fill a gun/launcher to its haul capacity and excess rounds will not be allowed.
- iv. One daily resupply of 50 rounds per gun/launcher is authorized– 45 minutes from request to rounds on gun/launcher.
- v. One additional emergency resupply of 50 rounds per gun/launcher is authorized per day. Wolf 07 is the approval authority for emergency resupply missions IOT facilitate training without desynching the rotational scenario – 45 minutes from approval to rounds on gun/launcher.
- vi. Constructive guns/launchers do not have to displace to a Refuel Rearm Resupply Point (R3P) IOT to be resupplied.
- vii. Start of each training day (0001) and start of each phase all guns/launchers revert to 50 rounds. Wolf 07 retains authority to reconstitute OPFOR artillery assets and ammunition during “open phase” battles IOT generate sustained training opportunities throughout the phase.
- viii. Resupply is by battery and ammunition can be shifted between guns/batteries. Transferred ammo is moved at the rate of 20 KPH.
- ix. Ammunition on destroyed guns/launchers is also destroyed.
- x. Special munitions are not included in the ammunition count.

**d. Constructive Artillery Positioning:**

- i. OPFOR constructive artillery must be positioned within the CT-OIS system's "Magic Box" (the CT-OIS's digital map), and be positioned in locations that an artillery unit could realistically occupy based on terrain considerations and the position/boundaries of the OPFOR unit involved.
- ii. Constructive OPFOR units locations (eight digit grid and description of the vehicle/unit) will be relayed through OC/T channels to live rotational units meeting the requirements in the following table:

Table 4-8, Observed Constructive Artillery Table		
	DAY	NIGHT
Unaided Observer	1.5 km	.5 km
Observer w/bino/map	5 km	3 km
Aided Observer	5 km	3 km
LRAS	10 km	7.5 km

**e. OPFOR Fire Marking and Special Munitions**

- i. Fire markers are positioned based off of rotational trends and in support of key RTU missions. If fire markers are unable to mark RTU missions on OPFOR units, the missions will be sent to Pale Horse OC/Ts for marking. Fire markers will mark OPFOR missions on the RTU if available and if unavailable the missions will be sent to the appropriate critter team for marking. Wolf TAFF will attempt to facilitate OPFOR fire plans and smoke missions if requested, but these plans / missions must be communicated in advance to the Wolf TAFF in order to allocate fire markers appropriately.
  - ii. Special munitions, to include FASCAM must be requested through the DTOC and strike warn given IOT facilitate fire marking in a timely manner. If the strike war is not given to standard, special missions will be fired and marked as quickly as marking is available.
- f. OPFOR BDA: The Wolf TAFF gives Blackhorse 27 a 24 hour BDA rollup at the start of each training day for the last 24 hour period.

9.

**4-6 Laser Operations**

1. Force on Force Operations. Eyesafe lasers are the only laser range-finders/designators allowed to actually laze or designate in Force on Force Operations. Use of any other laser during Force on Force device is unauthorized unless approved by 52ID.

2. Laser Capabilities and Restrictions. An OC/T must be present and operators must receive RED DIRECT FOR LASING through the maneuver chain of command prior to conducting any actual laser operations. OC/T has to make sure the RTU is qualified and certified within the last six month (Laser Safety Test).

**4-7 Precision Munitions**

Rotational units are authorized to fire the following munitions provided the following conditions are

met:

- a. M982 Excalibur GPS Guided Munition and M1156 Precision Guidance Kit (PGK). M777A2 and M109A6 MTOE Units are authorized to utilize the M982 Excalibur GPS Guided Artillery Round during Force on Force Operations. Prior to execution, units must possess required equipment, load proper CRYPTO, and demonstrate correct procedures to employ precision/near precision munitions in order to receive credit.
- b. M31 and M31A1 Guided MLRS Rocket (GMLRS). Units are authorized to utilize the M31 and M31A1 GMLRS Rocket during Force on Force operations. Units must possess and demonstrate the capability to fire these rounds prior to receiving credit. Observers must be able to demonstrate the capability to determine a mensurated grid prior to the mission being sent to the Launcher. Units that do not possess the M270A1 Launcher or M142 (HIMARS) may request GS support through the 52ID HQ,. MLRS and GMLRS support will be granted on a case by case basis.
- c. ATACMS BLOCK I, BLOCK IA, BLOCK II and M48/M57 ATACMS QUICK REACTIONARY UNITARY. Units are authorized to utilize the ATACMS family of munitions provided they possess the capability to fire them from either the M270A1 or the M142. Units may utilize the BLOCK IA ATACMS from non-GPS aided systems (M270), but they will only achieve BLOCK I accuracy. All ATACMS fires must be approved through 52<sup>nd</sup> ID

#### 4-8 Artillery/Mortar Safety

1. Certification. Unit commanders are responsible for Artillery/Mortar safety certification. Commanders will ensure that crews are certified in accordance with AR 385-63. Commanders will also ensure that a minimum of two safety certified personnel are present throughout the duration of the live fire and that safety personnel understand and follow both the NTC EXOP and the appropriate weapon systems technical manuals. Rotational artillery units will provide a Safety Certification Letter by RSOI2, signed by the Fires BN CDR, to the Wolf Team (W32/05) prior to being cleared to conduct live fire or calibration.

2. OC/T will assess Howitzer Direct Fire Engagements when not equipped with TESS. They will observe whether howitzer sections conduct direct fire procedures IAW ATP 3-09.50. In general, a section must fire one round long, and one round short to establish the range. OC/Ts will adjudicate kills based on crew drill, accuracy of crew's range, munition used, and target vehicle.

#### 4-9 Manual Artillery Assessment Tables

Area Weapons Effects Simulator (AWES) is the primary method for assessing indirect fire engagements. However, in the case of AWES malfunction or the requirement to assess vehicles and personnel which are not fitted with TESS. OC/Ts will assess casualties by applying reasonable judgment if the impact of the indirect fires is not obstructed by a building or other structure. When time allows, OC/Ts should use JWS to accurately assess BDA.

#### 4-10 Crater Analysis

Procedure. Units must perform or possess the following in order to properly conduct and receive credit for its selected procedure: Conduct the analysis in accordance with CATS individual task 061-306-6004: Perform Crater and Shell Fragment Analysis Units must request to perform a Crater Analysis to their corresponding OC/T or OC/T team. Units must perform any of the crater analysis techniques in the presence of an OC/T. Possess all the required equipment to perform any of the crater analysis techniques, such as declinated compass or aiming circle, stakes, wire or 550 cord, and curvature template.

#### 4-11 Artillery/Rocket Delivered Scatterable Mines.



**1. Replication. All FASCAMs will be marked to their actual size in the following manner:**

- (1.) RTU will request a STRIKEWARN for a pre-approved FASCAM through DTOC 60 minutes prior to intended employment.**
- (2.) DTOC announces a 30 minute STRIKEWARN across OPS CMD, RCS 100.**
- (3.) Final tasking for marking responsibility is given on OPS CMD, RCS 100; to include, target number, center grid, attitude and dimensions. The designated team will confirm.**
- (4.) Tasked OC/T confirms link-up with fire marker at FASCAM location to Warrior TOC on OPS O&I, RCS 103.**
- (5.) Wolf TAFF announces when the shot on FASCAM once RTU FA unit begins firing the mission. Wolf TAFF fires a smoke mission in CTC-IS to replicate the initial volley of mines being emplaced.**
- (3.) Fire marker pops a purple smoke canister and 5 grenade simulators.**
- (4.) Fire marker emplaces center marking pole at the center grid**
- (5.) For 200 X 800 = the two corner points that define the closest corner to the enemy will be emplaced first. For 400 X 400 = the three corner points that define the closest corner to the enemy will be emplaced first.**
- (6.) OC/T distributes a ground signature of approximately 500 Blue/Red wooden blocks.**
- (7.) After 15 minutes from the initial mark, the FASCAM becomes active. Wolf TAFF fires FASCAM mission in CTC-IS activating AWES for adjudication.**
- (8.) Fire marker removes the barber poles and drops a purple smoke and 5 grenade simulators replicating the remaining second 50% of the FASCAM landing.**

**2. Removal. At the timed completion of the FASCAM, the fire marker will confirm the FASCAM is inactive through WOLF TAF prior to marking with smoke and grenade simulators. The OC/T will remove the blocks.**

## **Chapter 5 Engineer**

- 5-1 Obstacles**
- 5-2 Training Demolition**
- 5-3 Improvised Explosive Devices (IEDs)**
- 5-4 EOD/WIT Tactical Site Exploitation**
- 5-5 Conventional Minefields**
- 5-6 SCATMINE**
- 5-7 Reduction Drills**
- 5-8 Digging**
- 5-9 MSR Restrictions**
- 5-10 Marking of Excavation Sites**
- 5-11 Environmental Clean-Up Team**
- 5-12 Road Craters**
- 5-13 Wet Gap Crossing**
- 5-14 Unexploded Ordnance (UXO)**
- 5-15 Counter RCIED Electronic Warfare Devices (CREW)**
- 5-16 Robots**
- 5-17 Road Culverts**

### **CHAPTER 5 – ENGINEER:**

#### **5-1 Obstacles**

- 1. Tracking.** Units will provide their OC/Ts with locations of all obstacles and survivability positions. OC/Ts will use this information to ensure that all obstacles are correctly entered into the CTC-IS computer system and to track post mission battlefield restoration.
- 2. Restriction.** Units will not construct inherently dangerous obstacles (e.g., head high, single strand barbed wire, tangle foot).
- 3. Restoration.** Battlefield restoration is an emplacing unit responsibility, defined as the clean-up or fill-in of all obstacles and survivability positions that they constructed. Restoration will begin after “continue the mission,” during the transition from Force on Force, as directed by the DTOC. During Force on Force, units may complete restoration prior to the next mission if the obstacle no longer serves a tactical need. OC/Ts will enforce and verify that all obstacles emplaced and earthworks constructed are policed prior to the unit reporting for their next mission. OC/Ts will report completion of battlefield restoration to Sidewinder 07 and Sidewinder TAFF. Sidewinder TAFF will report completion of battlefield restoration to the 52<sup>nd</sup> ID DTOC.
- 4. Material.** Units will return all obstacle materials to storage configuration (e.g. all mines disarmed and stored in containers if available) and all wire banded and palletized.

#### **5-2 Training Demolition**

- 1. Preference.** Live explosives are the preferred training aid at the National Training Center. When live explosives cannot be used or is not appropriate, demolition effects simulators (DES) will be used. It produces sufficient visual and sound effects to enhance battlefield realism. DES will be constructed IAW FM 3-34.214 to replicate C4, Bangalore Torpedoes, Cratering Charges, and Brazier Breaches. MDI, detonation cord, blasting caps, and fuse igniters can be used during force-on-force operations to create urban breaching charges. Units will calculate Net Explosive Weight (NEW) and observe the surface danger areas IAW FM 3-34.214
- 2. Handling.** Units will handle training demolitions in the same manner as live demolition material.

3. Resupply. Units must reorder expended demolition materials through the Class V resupply system in order to receive demolitions for future missions.

### **5-3 Improvised Explosive Devices (IEDs)**

1. Continuous and innovative procedures are used to develop IEDs by terrorist and enemy forces in the world today. NTC attempts to keep up with those changes and replicate recent insurgent TTP's. The types of IEDs at the NTC are: Command wire (CWIED), Remote Controlled (RCIED), Victim Operated (VOIED), Vehicle Borne IEDs (VBIED), Suicide Vest (SVEST), Deep Buried (DBIED), and Explosively Formed Penetrators (EFP).

2. Force-on-Force Simulation. The OPFOR / paramilitary forces will simulate the five types of IEDs at NTC by using the following:

a. Replication of VBIEDs utilizes some form of signature device to indicate an IED detonation and a vehicle. The minimum requirement is that there at least is an ignition system connected to explosives with a triggering device.

b. Suicide Bomber IED (SBIED) are replicated by any type of container with an audible signature device attached to the simulated explosives. When the buzzer sounds the IED has detonated.

c. Military Munitions IED are replicated by military ordnance, most often a mortar or artillery projectile of 120mm or larger, with a functional initiation system attached to a signature device.

d. Unknown Bulk Explosives (UBE)/Homemade Explosives (HME) are made in containers that prevent easy identification contents. Container examples include, but are not limited to 5gal fuel container, propane tanks, PVC pipes, or boxes. These devices will include simulated explosives and a functional initiating system attached to a signature device.

e. Explosively Formed Penetrator (EFP will be replicated by any shaped charge forming platter with simulated explosives and initiation system.

f. RKG-3. When the pin is pulled and the grenade is thrown, a four-paneled drogue parachute is deployed by a spring. This parachute stabilizes the grenade in flight and ensures that the grenade strikes the target at a 90-degree angle, maximizing the effect of the shaped charge.

3. To simulate the reduction, the rotational unit must demonstrate the capability to transport a complete system to the IED by trained operators. Once charge placement is confirmed, the IED is removed and the rotational unit primes the charge. Firing procedures are explained in Chapter 5-14.

4. Exploitation. After the initiation of an IED, a residue kit will be emplaced to facilitate the gathering of forensic evidence. A Pale Horse OC/T must ensure that the post blast evidence matches the IED that was emplaced.

a. Command Detonated IED's wire will be left in place.

b. RCIEDs: At the point of detonation; a disassembled trigger device similar to the model used to initiate the device and the munitions used will be left in place.

### **5-4 EOD/WIT Tactical Site Exploitation**

1. Procedures for Employment. The OPFOR will place a functional and exploitable target (Complete IED, HME, CACHE, etc.) after an IED event. These components are to be returned to the Terrorist Explosive Network shop at the end of every rotation.

2. Biometric Intelligence Analysis Reports (BIAR). Once the evidence makes it to the weapons intelligence team lead, the WIT team then has 6 hours to produce a respective BIAR match. The WIT team lead will ensure both the EOD commander and BCT S2 receive a copy of the report.

## **5-5 Conventional Minefields**

1. OPFOR Mines. Anti-tank mines - The OPFOR uses three types of mine replicators: the TM-89 mine shell with MES insert (primary); the M21 plastic shell without fuse, painted tan in color; and the M15 metal mine painted tan in color. All three replicate the TM-89 mine and are used in all OPFOR conventional minefields.

2. Employment. The TM-89 shell, M21 shell, or M15 metal mines replicate OPFOR minefields. OC/Ts will assess a vehicle as a catastrophic kill if the vehicle drives over or straddles the mine and a mobility kill if the vehicle moves within one meter of the mine. Any troops in the open within 25 meters of a mine blast will be assessed as a casualty. OC/Ts will remove any mines that have been detonated.

3. Anti-personnel mines - The OPFOR uses a replica of the OZM-3 AP mine. The OZM-3 is detonated by a variety of fuses including tripwire and electrical command. When triggered the mine explodes approximately 1.5 meters off the ground. The fragmentation results in a casualty radius of 25 meters.

## **5-6 SCATMINE**

1. Authority. Emplacement and execution authority for all scatterable munitions have either been delegated to/or elevated to the 52ID DIV CDR.

2. Marking. All RTU SCATMINE minefields will be marked IAW ATP 3-90.8 Table E-4.

3. Rotational Unit Responsibilities.

a. Reporting. A SCATMINEWARN will be sent to the DTOC a minimum of 60 minutes prior to execution of a scatterable minefield as a final request for release of emplacement authority. Failure to meet the 60 minute lead time requirement may result in delays in receiving execution authority.

b. 48 Hour Duration. On an exceptional basis, both BLUEFOR and OPFOR units may request and be granted authority to emplace 48-hour duration scatterable mines for any/all employment systems. 48-hour duration scatterable mines remain in effect until self-destruction and are not normally subject to suspension of battlefield effects.

c. Tracking. Units may only SCATMINEWARN the number of available loads they have for that particular system. Example – if the BCT can fire 2 ADAM or RAAM targets, then they may only have 2 open SCATMINEWARN targets at any given time.

3. Replication. A purple smoke and 5 hand grenade simulators should be dropped one three occasions per minefield: 1) during initial marking, 2) designate the minefield as active and 3) when the minefield self-detonates at expiration. One hand grenade simulator should be dropped when vehicles enter the minefield to replicate the mines detonating. 5 hand grenade simulators should be dropped to replicate the minefield self-detonating at completion time. There is a doctrinal safety zone which units should recognize, but will not be marked. Specific replication guidance per munition is listed in the sections below.

Table 5-6a SCATMINE SD Windows	
SD Time	SD Window Begins
4 hours	3 hours 12 minutes
48 hours	38 hours 24 minutes
5 days	4 days
15 days	12 days

e. Number of mines. OC/T will emplace number of mines consistent with type of minefield being employed.

e. Non-AWES Adjudication. If AWES is not available at the time the mission is shot, manual adjudication will be conducted throughout the duration of the minefield.

**5. Artillery/Rocket Delivered Scatterable Mines.**

Table 5-6b SCATMINES BY TYPE	
Type	Number of blocks per
Field Artillery	500 blocks
Volcano	100 per rack
MOPMS	21 blocks

a. Replication. All FASCAMs will be marked to their actual size in the following manner:

- (1.) RTU will request a STRIKEWARN for a pre-approved FASCAM through DTOC 60 minutes prior to intended employment.
- (2.) DTOC announces a 30 minute STRIKEWARN across OPS CMD, RCS 100.
- (3.) Final tasking for marking responsibility is given on OPS CMD, RCS 100; to include, target number, center grid, attitude and dimensions. The designated team will confirm.
- (4.) Tasked OC/T confirms link-up with fire marker at FASCAM location to Warrior TOC on OPS O&I, RCS 103.
- (5.) Wolf TAFF announces when the shot on FASCAM once RTU FA unit begins firing the mission. Wolf TAFF fires a smoke mission in CTC-IS to replicate the initial volley of mines being emplaced.
- (3.) Fire marker pops a purple smoke canister and 5 grenade simulators.
- (4.) Fire marker emplaces center marking pole at the center grid
- (5.) For 200 X 800 = the two corner points that define the closest corner to the enemy will be emplaced first. For 400 X 400 = the three corner points that define the closest corner to the enemy will be emplaced first.
- (6.) OC/T distributes a ground signature of approximately 500 Blue/Red wooden blocks.
- (7.) After 15 minutes from the initial mark, the FASCAM becomes active. Wolf TAFF fires FASCAM mission in CTC-IS activating AWES for adjudication.
- (8.) Fire marker removes the barber poles and drops a purple smoke and 5 grenade simulators replicating the remaining second 50% of the FASCAM landing.

b. Removal. At the timed completion of the FASCAM, the fire marker will confirm the FASCAM is inactive through WOLF TAF prior to marking with smoke and grenade simulators. The OC/T will remove the blocks.

**6. Volcano/UMZ.** The OPFOR UMZ dispenses the PTM-3 AT mine and PFM AP mine. While neither the Volcano AT mine nor the PTM-3 have anti-handling devices, both are magnetic fused and therefore would detonate if moved. Therefore the mines cannot be lifted out of the way. The OPFOR UMZ minefield is dispensed in a manner similar to the BLUEFOR Volcano minefield.

a. BLUEFOR units must process requests for Volcano canisters IAW Chapter 8. After the 581 is confirmed, the unit may upload the initial Volcano canisters on the M139 dispenser. Units need requisite number of "ready" M89 canisters uploaded on the M139 dispensers and proper systems checks conducted.

b. The correct number of empty honeycombs with a properly processed and verified DA Form 581 constitutes a Volcano reload, and must be on-hand prior to a unit conducting reload operations. The unit must download the entire load of "expended" M89 canisters into the honeycombs prior to up-loading the same canisters, now "ready" on to the M139 dispensers. The empty honeycombs replicate "fired" canisters and must be backhauled to the brigade ATP.

c. All ground Volcano minefields will be marked to either 120m x 277m, 120m x 1110m, or 555m x 440m (ATM 3-90.8 Figures E-4, E-5, and E-6).

d. Air Volcano Force-on-Force Replication will be the same as FASCAM described above with two exceptions.

(1.) All Air Volcano minefields will be marked to either 140m x 278m, 140m x 1115m, or 460m x 557m (ATP 3-90.8 Figures E-4, E-5, and E-7).

(2.) Air volcanos are emplaced quickly. Adjudication begins after the delivering aircraft completes its pass or passes and the corner that faces the general direction of the enemy is marked:

140m x 278m and 140m x 1115m = the corner points on the long edge facing the enemy side will be emplaced first.

460 x 557m = the three corner points closest to the enemy will be emplaced first.

e. Pyrotechnics. A purple smoke and 5 hand grenade simulators should be dropped for each pass during emplacement. Additional markings IAW para 5-6, 2a of this document.

f. Logistical requirements/restrictions. The unit must bring a full load of M-89 training canisters per Volcano system. Units will still draw their first Volcano load in theater. The unit must fly missions with the bottom two racks (Rack 1 and 2) loaded with 40 M-89 canister each for a total of 80 canisters. Emergency jettison squibs must be installed prior to aircraft flight. The aircraft DCU must pass a canister bit test prior to the execution of each mission. The PIC must show the OC/T that the aircraft can carry the load of mines and the proper fuel on board IAW the PPC for the mission. Ingress speed is limited to -10 performance planning for the current conditions prior to launch.

7. Ground Volcano/UMZ Force-on-Force Simulation. The Volcano/UMZ mines will be dispensed by hand from the dispensing vehicle or supporting vehicle(s) trailing the dispenser done by the Emplacing Unit. The OC/T mark when the Volcano/UMZ begins dispensing and a second hand grenade simulator when dispensing is complete. Once the VOLCANO/UMZ has run the centerline, the vehicle(s) dispensing the blue/red blocks are not subject to assessment while dispensing the blocks. Mines (blocks) must be recovered during battlefield restoration, or after the minefield expires. The controlling OC/T adjudicates all mine effects. Additional information on marking can be found in Chapter 5, paragraph 5-6 of this document.

#### 8. Modular Pack Mine System (MOPMS).

a. Replication. After the fire marker marks the site, the OC/T places the 21 blue blocks scattered out to 35 meters from the container in a 180-degree semi-circle. OC/Ts will mark the minefield initiation with one ground burst simulator. The minefield becomes active once the wooden blocks are dispensed. Vehicles and personnel become casualties if they disturb or influence the mines using non-doctrinal breach methods. The controlling OC/T adjudicates all mine effects.

b. Logistics Requirements. Emplacing unit must have the appropriate batteries for the MOPMS dispenser and the RCU (if used). Once a battery is used to dispense mines, the battery used in the container cannot be used again. The unit must provide 21 2"x4"x4" wooden blocks for each MOPMS container prior to departing the DSA. The unit recovers the mines and MOPMS container upon self-destruction of the mines or continue the mission. After a MOPMS is expended, the unit must backhaul the trainer to the battalion LRP where it will be tagged by an OC/T provided that the DA Form 581 is at the LRP with the MOPMS annotated.

9. Spider – Network Munitions System. The munitions system consists of four major components: the remote control unit (RCU), remote control unit transceiver (RCUT), repeater, and munitions control unit (MCU).

a. The Spider Training, Dispensing Set consists of the M-92 Miniature Grenade Training Simulator (MGTS) and MCUT. The inert M68 claymore practice kit replicates anti-personnel mines.

b. Assessments. OC/Ts will adjudicate based off of the number of munitions attached to the MCU that is fired. An MCU with six M18 claymores attached will produce lethal effects out to 100 meters from the M18 Claymore across a frontage of 225 meters. An individual M18 Claymore attached to an MCU will provide lethal effects out to 100 meters across a frontage of 37 meters. OC/Ts will assess personnel in the open from 0 to 50 meters from the detonated M18 at 25% KIA and 50% WIA. OC/Ts will assess personnel in the open from 51 to 100 meters with 25% WIA. OC/Ts must take into account terrain, available cover, and orientation of the M18 Claymores when assessing casualties. If the MCU only has the six Miniature Grenade Launchers (MGL) attached the effects for each MCU that is fired are 10% KIA and 25% WIA to all personnel in the open within a 32m diameter of the MCU. Again, OC/Ts on the ground will use their judgment to assess casualties based off of terrain and available cover. Each 40mm grenade fired from the MGL has a kill radius of 6 meters and casualty producing radius of 20 meters.

c. Logistics Requirements. Units draw Division authorized quantities of Spider munitions components from TASC per each engineer company. Additionally, units are authorized to use any Spider systems that were issued at home station. Emplacing units must have the appropriate batteries for the RCU and MCU. After a Spider munitions system is expended the MCU must be recovered and the attached munitions must be backhauled to the battalion LRP where it will be tagged by an OC/T, provided that the DA Form 581 is at the LRP with the munitions annotated. If the unit has additional munitions on hand the RCU and MCUs are reusable.

10. Hornet - OC/T will observe the operator emplace the XM97 Wide Area Munition (WAM) trainer. OC/T will report the 8 digit grid location of the XM97 WAM trainer to the TAFF. TAFF will program a 100m radius "MILES kill area" around the munition. When an enemy vehicle enters the kill zone, CTC-IS will register a catastrophic kill on the first enemy vehicle. OC/T will replicate a signature with a star cluster and adjudicate. OC/T may adjudicate additional mobility kills on surrounding vehicles based on spacing and vehicle type.

11. Selectable Lightweight Attack Munition (SLAM) - OC/T will observe the operator emplace the M320A1 Selectable Lightweight Attack (SLAM) training kit. When used in command detonation mode, OC/T will observe operator fire the munition and will adjudicate appropriately. When utilized as a mine, OC/T will observe the signature from the training kit and adjudicate.

## **5-7 Reduction Drills**

1. RF Signal. During force-on-force, coordinate through the Sidewinder TAFF to turn off the RF signature prior to attempting to reduce a replicated minefield.

2. Explosive Breaching. MICLIC must be fully operational; electronically as well as hydraulically. The "Smokey Sam" sub caliber device will be fired to replicate the launching of the rocket and an OC/T will detonate a hand grenade simulator to simulate line charge detonation. If a sub-caliber device cannot be used, and the unit is not at fault, an OC/T will fire a star cluster ten seconds after the rocket arm is raised to firing elevation to simulate rocket launch and detonate a second grenade simulator to simulate detonation of the line charge. Unprotected personnel within 200 meters of the line charge when detonated will be assessed as casualties. Once the 'Smokey Sam' has been fired, OC/Ts will adjudicate effects for the MICLIC charge. After the 62 meter standoff is taken into account, OC/Ts will remove any destroyed mines in the 14m x 100m path credited to the line charge. Any mines left in the lane by the OC/T must be removed using appropriate proofing/reduction techniques.

a. Smokey Sam Procedures. Smoky Sam sub-caliber devices will be transported inside their inner packing (e.g., foam containers) or they will be unpacked and placed in storage containers so they do not roll or bounce around. Units must comply with these transportation guidelines to prevent broken fins, damaged igniters, moisture on the base of the rocket and damage to the frame. No spark or flame-producing items will be used within 50 feet of the Smoky Sam sub-caliber device. Do not store Smoky Sam sub-caliber devices with flammable or combustible material.

b. Train-up. Units must conform to the following train-up procedures before employment of Smoky Sam Sub-caliber device in force-on-force operations:

- (1.) Inspect the Smoky Sam sub-caliber device for damage (nicks, cuts, dents, moisture).
- (2.) All components of the MICLIC launcher must be present regardless if mounted on a trailer or AVLM.
- (3.) Operator's manual (-10) with all current changes must be available.
- (4.) PMCS must be completed to -10/-20 standards and a DA Form 5988E or 2404 properly filled out.
- (5.) All MICLIC crews must know misfire procedures and safe distance requirements.
- (6.) Units must conduct a training/verification firing, with all MICLIC crews present, prior to first force-on-force mission.
- (7.) Unit will notify OC/T of scheduled training and verification firings.
- (8.) Surface danger zones (SDZs) must be calculated as if firing a live MICLIC rocket and line charge.

c. Lack of preparation/training on the Smoky Sam sub-caliber device may result in a higher misfire rate. Execution steps are:

- (1.) Employment/Safety during Firing.
- (2.) Units will implement live rocket and line charge MICLIC safety procedures during employment.
- (3.) Units will prepare Smoky Sam sub-caliber devices at the engineer assault position.
- (4.) Units will not fire the Smoky Sam sub-caliber device if damage to the rocket occurs during transportation.
- (5.) Units must clear SDZ of dismounts prior to firing; the OC/T will confirm prior to initiation.
- (6.) The unit OC/T will detonate a grenade sim to provide ground signature of rocket launch.

3. Mechanical. Units may use any type blade asset to reduce anti-tank ditches and berms or move other physical obstacles. Units may not use the "bull through" or "push through" technique, such as pushing a non-mission capable or destroyed vehicle, to breach minefields. The unit must execute proper doctrinal reduction/clearing techniques to establish a bypass at a safe distance from the destroyed vehicle to allow for continued use of the lane. The OC/T on the ground will detonate hand grenade simulators to replicate mine detonation. If the main gun of the tank is not traversed to the side during plowing or rolling, and a mine is encountered by the tank, the tank will be assessed as a firepower kill upon completion of the breach

a. Plow. The plow must maintain enough spoil to prevent blade to mine contact. If inappropriate spoil (up to the top of the moldboards on a tank) allows a mine to contact the blade, the blade is destroyed and the vehicle can no longer be used for breaching operations. If the vehicle continues and comes in contact with another mine, an OC/T will manually assess the vehicle as a Catastrophic Kill. Additionally, if the blade comes completely off the ground and a mine passes under, the vehicle will be assessed as a Catastrophic Kill. These rules apply to Mine Clearing Blade (MCB) on a tank, Assault Breacher Vehicle, ACE, D-7 Dozer, Deuce, and Stryker Mine Clearing Blade.

b. M1 Tank Mine Roller (MCR) and Light Weight Mine Roller (LWMR). Each roller bank can withstand two mine strikes. The second mine strike on the same roller bank will destroy it. If the vehicle continues and a third mine is encountered on the side of the destroyed bank, then the vehicle is assessed as a



catastrophic kill. If a mine passes through the roller banks without a “dog bone” assembly, the vehicle will be assessed catastrophic.

4. Manual reduction. When grappling, if a grappling hook hits a TM-89 or OZM-3 mine, OC/Ts will assess the mine as destroyed along with the grappling hook and a portion of the grappling hook line; due to anti-handling devices. Every time a TM 89 mine is moved using the “lasso” technique 15 feet of rope will be destroyed. When using explosives, at least a 1 pound charge, must be placed next to but not touching the mines. OC/Ts will assess casualties when soldiers fail to take appropriate safeguards against the TM-89/TM 89 MES mines’ anti-handling characteristics.

#### **5-8 Digging**

1. Before placing any blade in the ground, RTU must give their OC/T on the ground the 10 digit grids, direction, equipment type and depth. The OC/T will verify with their TAFF the dig area and gain approval for digging. Once approval is granted, the TAFF will contact the OC/T with the dig classification of free dig, no dig, or restricted dig and give the OC/T any other special instructions. RTU will follow all restrictions and or special instructions from the OC/T once the approval from the TAFF was granted.

2. No Dig areas prohibit digging due to the high risk of uncovering unexploded ordnance, hazardous materials or archaeological sites. These areas are marked as “No Dig” on the overprinted NTC map and “No Dig” signs are posted in the training area. All units (Training and tenant) will ensure all digging or excavation equipment is equipped with the Proximity Warning Unit (PWU) to alert the operators when they are operating in the vicinity of buried cable or utilities. Fiber optics run along all MSRs and enters each FOB from the MSRs at a 90 degree angle.

3. Restricted dig areas are former impact areas or portions of former impact areas that have been cleared and are authorized for excavation under a FORSCOM waiver. The following restrictions apply:

a. The surface area will be inspected for unexploded ordnance before the start of digging.  
b. All personnel involved in digging operations that are not in a combat engineer vehicle or armored combat earth-mover (ACE) will wear eye protection, body armor, and ballistic helmet. Armored vehicles will remain hatches closed during digging operations.

c. Safety Observer. A safety observer will be present, but in a safe location during all digging operations. The observer will receive EOD training on identification of unexploded ordnance.

d. No digging will occur from sunset to sunrise.

e. All engineer equipment (all models of Dozers, ACEs, HMEEs, DEUCES, SEEs, Scrapers, Bucket Loaders), can dig in restricted dig areas in hours of daylight as long as the operator and observers wear flak vest and Kevlar helmets. In the event that unexploded ordnance is observed, digging operations at that site will cease until the area is cleared by EOD.

4. Paleontology. While conducting digging activities/operations on Fort Irwin, all personnel involved in these activities will immediately stop digging and notify Range Control to prevent inadvertent destruction of cultural or paleontological resources:

a. Change in Soil Color / Composition. Stop digging if an abrupt change in soil color or soil texture, can indicate an archaeological site.

b. Evidence of Human Activity. Stop digging if bones or bone fragments, pottery shards or any type of woven material such as baskets or cloth, any type of arrowhead, spear point, or other tools or implements that appear to be handmade, any fossils or any metal objects or military paraphernalia are found.

## **5-9 MSR Restrictions**

1. The following MSRs must remain open for safety/evacuation purposes and will be specified in the 52ID Deployment Order: RTE Ia Drang (East Range Road), RTE Bull Run (Barstow Road), RTE Long Island (Langford Lake Road / Red Pass Road), RTE San Juan (Silver Lakes Road), RTE Osan (Goldstone Road) and RTE A Shau to RTE Saigon to RTE El Caney. Fiber Optic cable runs along all MSRs and units are not authorized to dig or excavate within 50 meters of the road on either side to include tank trails. Barstow Road is further restricted that units may only dig up to the edges of the two tank trails which parallel each side of the main road.

2. To replicate an antivehicle ditch crossing a road during tactical operations, units will use signs stating the MSR is off limits to all but O/C-Ts and emergency vehicles. Signs will be emplaced by accompanying O/C-T or Dragon Team if in LFX. If wire/mine obstacles are used across an MSR then the restricted choke points will be clearly marked for day and night, (chem-lights on concertina at a minimum) with warning / check points signs clearly posted 300 meters either side of the checkpoint.

3. All tactical vehicles and contractors not serving as role players will turn off their headlights at the light line. Contractors within the scenario will use lights in accordance with the tactical scenario.

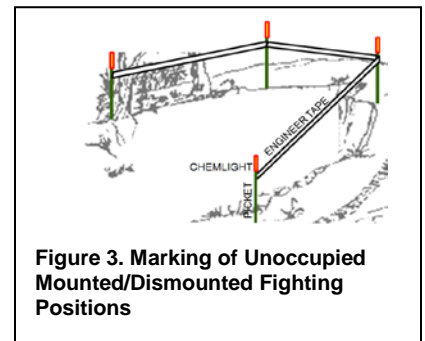
4. TCPs in Vicinity of Light Line. TCPs in vicinity of the light line on Barstow Road (MSR Bull Run) are prohibited within 500m of the light-line/Barstow Road intersection.

## **5-10 Marking of Excavation Sites**

1. All combat vehicles carry survivability position marking material including a minimum of four U-shaped pickets, white engineer tape, and chem-lights. Leaders must ensure personnel marking hasty or deliberate fighting positions have night vision capability before marking their Soldiers' position. Leaders can use luminous tape, infrared chemical lights or regular chemical lights to mark fighting positions to prevent fratricide based on unit SOP. See Figures 3 for pictures of marking unoccupied fighting positions.

a. Mounted Fighting Positions. All unoccupied survivability positions and excavations will be marked with a U-shaped picket at each of the four corners. White engineer tape will mark the two sides and the front edges leaving the entrance open. Chem-lights will be placed on all four pickets during limited visibility. Marking is not required for occupied Mounted fighting positions.

b. Dismounted Individual Fighting Positions. Leaders must check all dismounted fighting positions for survivability and ensure positions are safe, ensuring the positions are not placed near vehicle perimeters and/or adjacent to an improved trail. All unoccupied survivability positions and excavations will be marked with U-shaped pickets on all four corners. White engineer tape will mark the two sides and the front edges leaving the entrance open. Chem-lights will be placed on the pickets during limited visibility.



2. Antivehicle Ditch Marking. Antivehicle ditches will be marked with U-shaped pickets and white engineer tape along the entire length of the ditch (enemy side). During limited visibility, chem-lights will be placed a maximum of 25 meters along the enemy side of the antivehicle ditch. To replicate an antivehicle ditch crossing a MSR/ASR during tactical operations, units will use orange traffic cones evenly spaced two meters apart extending across the width of the road.

## **5-11 Environmental Clean-Up Team (ECT)**

1. The ECT white cell will not augment the rotational unit with survivability or battlefield restoration effort, without specific approval from 52ID DTOC. ECT vehicles will display placards stating "ENVIRONMENTAL TEAM". The ECT will maintain continuous communications with Range Operations.

2. **Procedures for Employment.** The ECT will make runs as necessary to dispose of contaminated soil using the BLUEFOR MSR. After coordinating with 52ID DTOC, Range Operations will dispatch the ECT for routine spills as required. Range Operations & ECT will maintain a log of reported and completed spills.

3. The ECT will avoid entering areas where tactical actions are in progress to the extent possible. The ECT will not be dispatched to these areas without DTOC approval. If this is unavoidable, DTOC will assign escort responsibility to a specific OC/T team. If engaged during the conduct of a clean-up mission, the ECT will insert yellow keys and continue clean-up. At no time will the ECT actively participate in combat operations or attempt to influence tactical situations.

#### **5-12 Road Craters**

1. **Replication.** Once execute, mark the perimeter of the crater with four orange road cones, at the corner points, with engineer tape between cones. A tripod of three U-shaped pickets wrapped in engineer tape marks the center of the crater. A sign indicating a road crater can be hung at the site. Warning signs will be visible in both daylight and hours of limited visibility. Upon completion of the road crater the grid location and MSR/ASR that the crater is located on must be called up to the DTOC to ensure that OC/Ts and contractors circulating the battlefield are aware of the location.

2. **Reduction.** In the case of simulated RCs (RC with perimeter marked with four orange road cones and center with U-shape picket tripods), blade assets, any vehicle with a front blade, and tracked vehicles move to the edge of the obstacle and replicate reduction by continuously moving forward and backward for five (blade asset) or ten (other vehicle) minutes. A squad must be on site for 30 minutes with at least 6 each.

#### **5-13 Wet Gap Crossing and Road Culverts**

1. There are no notional wet gap crossings at NTC.

2. **General.** All culverts inside of the training area are in play and usable by the OPFOR for the emplacement of IEDs. BLUEFOR may use any non-permanent means, to exclude padlocks, to prevent the tampering of the Culvert Protection Systems (CPS).

#### **5-14 Unexploded Ordnance (UXO)**

1. **General.** The NTC has both real world and training unexploded ordnance on the battlefield. To ensure the safety of everyone and proper training for the rotational unit the following procedures are in place. For safety purposes, soldiers will consider all UXO found on the NTC battlefield as live. Any soldier spotting an UXO will perform the following measures:

a. Prepare a standard UXO Spot Report (Ref STP 21-1-SMCT) and forward the report to Range Support IOT request Fort Irwin EOD support.

b. Mark all UXO using the NATO UXO markers or, as an alternative, with pickets or stakes. Place chem. lights and engineer tape three (3) feet off the ground so that they are visible from all approach routes.

c. **EOD Support.** The rotational EOD unit in support of the BCT will respond to all requests for EOD support in the training areas. The post EOD unit will not be contacted until after the rotation ends, unless immediate danger to RTU TAA, personnel or equipment cannot be mitigated.

2. **Live Ordnance:** If the EOD unit determines that the ordnance encountered is live, the rotational unit will construct protective works if required. The RTU will conduct UXO Spot Report (Ref STP 21-1-SMCT) to Range Support IOT request Fort Irwin EOD support. The rotational EOD/EN units are authorized to utilize live Class V demolition materials. The steps are as follows:

a. SDZ & TCP. The rotational unit will clear the SDZ for the explosives being utilized in the destruction. The unit will set up TCPs to stop all traffic into the SDZ; this includes OC/T vehicles and contractors.

b. After the SDZ and TCPs are established, the rotational unit calls their chain of command to go red direct. This request must go all the way to the DTOC for approval. The rotational BCT does not have the authority to authorize red direct for live demolitions. Simultaneously the demolition qualified OC/T calls ZULU TAC to request red direct status. If ZULU TAC is not operational then qualified OC/T will contact Sidewinder TAFF and DTOC to go red direct.

c. Upon receipt of red direct from their chain of command and final approval of the Engineer OC/T on the site; the rotational unit may detonate the explosives.

d. After the detonation and verification of the disposal by the RTU and the Engineer OC/T, the rotational unit will call their chain of command with a green and clear and the Engineer OC/T will call Sidewinder TAFF/DTOC with green and clear.

3. Scrap. EOD Companies will remove scrap ordnance out of the immediate area to eliminate the confusion of whether it is live or not.

#### **5-15 Counter RCIED Electronic Warfare Devices (CREW)**

TSD/CI2C personnel assist the unit in installation and training of Dukes devices during RSOI. If the CREW device is not functioning properly or the IED is not on the same frequency as the CREW then the IED may detonate. Vehicles will be able to use their SINCGAR radios in the Frequency Hop (FH) mode.

#### **5-16 Robots**

1. Robots are not simulated.

2. Assessment of Robots near IED blasts is IAW Table 5-16.

<b>Table 5-16. IED Assessment Table for Robots</b>	
<b>Detonation within 5m</b>	<b>CAT Kill</b>
<b>Detonation 5 - 15m</b>	<b>Mobility Kill</b>
<b>Detonation 15-25m</b>	<b>Loss of function, retain mobility</b>

## **Chapter 6**

### **Air Defense**

- 6-1 Command and Control**
- 6-2 Aircraft**
- 6-3 Air Defense**
- 6-4 Adjudication and BDA Assessment**

#### **Chapter 6 – Air Defense:**

##### **6-1 Command and Control**

- 1. Airspace Control Plan:** The Airspace Control Cell in the DTOC is responsible for developing a complete Airspace Control Plan. The Airspace Control Order (ACO) and Air Tasking Order (ATO) will be published at 2100L hours daily and distributed to all agencies. The Special Instructions (SPINS) will be published once on RSOI 3 and be updated as required. The ACO will be distributed daily via TAIS and posted on the Warrior Portal.
- 2. BLUEFOR.** BLUEFOR Air Defense assets are available when requested by a Request for Forces (RFF) memorandum. The request will be sent for Air Defense Assets through Rotational Units Chain of Command. These assets will normally consist of one Notional Sentinel Radar System, as well as 12 Avenger Systems totaling six Notional Engagement Teams.
- 3. OPFOR.** OPFOR Air Defense assets, if any, will be outlined in the OPORD received during RSOI. A Request for Forces (RFF) memorandum will need to be sent for Air Defense Assets through the Rotational Units Chain of Command.
- 4. RCS 369** serves as net control station for all air to ground and ground to air engagements. All ADA and Eagle OC/T monitor RCS 265 to ensure rapid communication of engagements.

##### **6-2 Aircraft**

- 1. Rotary Wing.** Types of BLUEFOR RW are based on FORSCOM Reg 350-50-1 and approved troop list. All BLUEFOR RW must be TESS instrumented.
- 2. Fixed Wing.** BLUEFOR fixed wing aircraft support is based upon availability. All services routinely support blue forces with CAS, to include IC assets through the GREEN FLAG-West program at Nellis AFB.
- 3. Unmanned Aerial Systems (UAS).** UAS are not TESS instrumented. UAS coordination measures will be included in the daily ACO.
- 4. All aircraft** will follow ACO as described further in Chapter 9-13.

##### **6-3 Air Defense**

- 1. Active Air Defense.** A valid engagement is determined when the gunners acquire, track and properly fire a functioning weapon system at target within range. ADA aircraft engagements must be monitored by an ADA OC/T to provide feedback to the TAF for firing credit.
  - a. MANPADS Stinger and Avenger Stinger Weapon Systems** fire a BLUE marked ATWESS. OC/T's will replicate BLUEFOR with a WHITE star cluster; OPFOR with a GREEN star cluster. Ensure rocket goes up and away from the air corridor. Never fire within 500m of aircraft.
  - b. If aircraft is within 500m,** notify the trail OC/T. At night, replicate with flashing white light at ground.

c. Max effective range of the MANPAD Stinger TESS is 5000 meters for fixed wing, 3750 meters for rotary, and 500 meters for UAS.

2. Passive Air Defense. Passive air defense measures such as obscuration, dispersion, and other limiting measures must be considered during assessment of BDA during notional air attacks.

3. RTU Early Warning is provided predominately by the unit's organic early warning systems (i.e., Sentinel radar). This cell in coordination with W16 will replicate the early warning functions of Division through theater. Under these circumstances, primary means of transmitting early warning to the BCT is the digital Sensor Broadcast Net with FM transmission being the alternate. If the unit does not have organic radar, early warning will be transmitted over the FM Division Early Warning (DEW) net in the format listed below:

**Division Early Warning Format**

Type of Threat: RW, FW, UAS or TBM

Friendly/Hostile/Unknown

Location (4 digit grid)

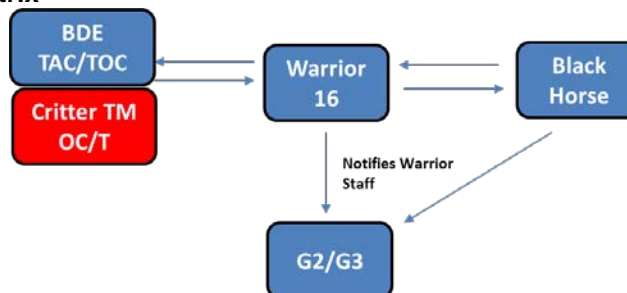
Heading

4. Radar used to acquire aircraft for early warning purposes and that are operating in the competitive zone are required to have TESS instrumentation IAW with Chapter 4.

**6-4 Adjudication and BDA Assessment**

1. Adjudication. W16, tracks FW, RW and UAS movement across the battlefield using AMDWS and CTC-OIS. W16 will template the weapon system ranges based on the engagement rings and the real time aircraft location. This will facilitate rapid adjudication of ground to air engagements. For all BLUEFOR engagements the BDE TAC/TOC will contact W16 using the appropriate engagement report. W16 will then notify Pale Horse, Sundance, or Raven through RCS or manually of pending engagements or outcomes of engagements (BDA).

**ADA Adjudication Matrix**



**ADA Engagement Request Format**

★ Example Request	
Type of Aircraft:	RW Trk# 77062
Type of Engagement:	Avenger 2
Amount of Rounds:	2
Grid of Fire Unit:	11 S NV 25086 98280
Azimuth to Target:	015
Elevation of Target:	3300
Grid of Target:	11 S NV 2480 0520
Time of Engagement:	0409

**2. Ground to air and air to ground engagements by ADA and rotary wing aircraft are completely instrumented through the CTC-IS. However, adjudication of ground to air and air to ground engagements by ADA and Fixed Wing aircraft are not automated. These engagements are assessed IAW guidelines listed below. Once the adjudication process is complete, the OC/T at the Ground Control Station will notify the mission commander/Aircraft Commander (AC) of the adjudication results:**

**a. Ground to Air. CAS and rotary wing aircraft without TESS become casualties based on the quality and/or quantity of fire directed at them relative to the aircraft tactics used. Warrior 16 / Eagle 7T / Raven 03 / Raven 07 will assess all engagements and coordinate adjudication.**

**b. Engaging UAS. The OC/Ts on the ground and the AC (Airspace Control) (Warrior 16) will adjudicate all air defense (AD) engagements against UAS systems. AD weapon system status, AD weapons location, distance to target, AV altitude, and environmental conditions (day/night, illumination, ceiling, etc.) will be considered when making assessments. A probability kill (PK) table accounting for the capabilities and limitations of all UASs will be maintained and utilized by the Air Defense Control Cell to adjudicate all engagements.**

**c. Combined Arms For Air Defense (CAFAD). U.S. Army units' employment of CAFADs represents the unit using its organic assets as protection against air attack. CAFAD engagements (5.56mm through 120mm) of rotary wing aircraft are adjudicated with TESS and recorded in the Tactical Analysis Facility (TAFOC/Ts will adjudicate CAFAD effects using the following criteria (High and Low Probability of Hit):**

**(1.) High probability of hit. One-half or more of the small arms available to the CO/TM or MRC must engage to constitute a valid engagement. OC/Ts and TAFs will notify Warrior 16 of valid ADA engagements.**

**(2.) Low Probability of Hit. Low probability of hit occurs when a CO/TM whose fires are not massed and at a distance greater than max effective range of the weapon system.**

**3. Air to Ground. Valid air to ground engagements are adjudicated by Raven 07, in coordination with Warrior 16 and the 549 CTS GREEN FLAG-West supervisor. The Ravens will recommend to Warrior 16 appropriate BDA for each strike and Warrior 16 will coordinate with OC/T teams. Team 07s have final say in what vehicles are destroyed.**

**4. UAS ADA Assessments. UASs destroyed by BLUEFOR ADA (or other weapons) fire will be reconstituted based on remaining CBI lives and mission flight time remaining. UASs that were adjudicated as damaged or destroyed will immediately return to the L/R site. A dying breath report may be sent that states the UAS was shot down. No further spot reports derived from UAS imagery will be sent from the UAS crew. All Remote Video Terminals (RVTs) being used by other OPFOR units will be shut down to simulate loss of link. If sufficient flight time and UAS Lives remain, the UAS may then return to its mission. The purpose of this is to prevent loss/waste of UAS flight time and training while realistically simulating the time needed for OPFOR to launch a second UAS, if one is available.**

## Chapter 7 Reconstitution

- 7-1 Personnel Reconstitution
- 7-2 Vehicle Reconstitution

### CHAPTER 7: Reconstitution

#### 7-1 Personnel Reconstitution

1. **Personnel Reconstitution.** Unless otherwise directed by 52ID, all Battle Phases will start with **INDIVIDUAL RECONSTITUTION**. Continue Mission (CTM) Instructions for each battle phase will further define details for reconstitution. The standards for personnel reconstitution are as follows:

Table 7-1 Personnel Reconstitution				
Casualty Type	EVAC Req't	Reconstitution Process	OC/T Validation Process	Hours Out of Combat
WIA	Role I or Role II	Appropriate treatment; BN must submit DCIPs or DA 1156 for all casualties to BDE S1	TM 24 OC/T validates treatment complete; TM 17/28/08 and Bronco OC/T validates DCIP or 1156 complete	Based on unit actions to complete treatment
DOW	BDE MACP (BSA)	Unit completes MACP process; BN must submit DCIPs or DA 1156 for all casualties to BDE S1; BDE S1 sends report to DIV	GM10B MA Trainer validates MACP process complete; TM 17/28/08 and Bronco OC/T validates DCIP or 1156 complete	IAW Continue Mission Instructions; Normally 2 hours after completion of process
KIA	BDE MACP (BSA)	Unit completes MACP process; BN must submit DCIPs or DA 1156 for all casualties to BDE S1; BDE S1 sends report to DIV	GM10B MA Trainer validates MACP process complete; TM 17/28/08 and Bronco OC/T validates DCIP or 1156 complete	IAW Continue Mission Instructions; Normally 2 hours after completion of process

2. **Reconstitution Point.** Each Brigade Combat Team is required to establish a Reconstitution Point (Personnel Holding Area). The Reconstitution Point will consist of all applicable life support requirements. This will include, at a minimum, two general purpose (medium) tents or equivalent, climate control (air conditioning/heat as appropriate, water trailer with ice, latrines, Class I (ration cycle as per BCT), and cots. The BCT will man the reconstitution point 24 hours a day in order to maintain accountability of Soldiers awaiting reconstitution and coordinate for the return of these Soldiers to their unit. The reconstitution point NCO logs Soldiers into the reconstitution point and maintains 100% accountability for Soldiers in the reconstitution point: minimum information to include name, rank, SSN, unit, date/time of arrival, and then shares the information with a Bronco Sustainment or Goldminer Team member. In order to maintain positive control, Soldiers will be ordered that their place of duty is within the boundaries of the reconstitution point. The supervising Bronco Team member will issue the reconstitution time once process is complete.

3. **Types of Reconstitution.** There are several types of reconstitution that can occur at NTC

a. **Individual Reconstitution.** Individual Reconstitution is the standard unless otherwise directed by Headquarters, 52ID.



(1) A DA Form 1156, Casualty Feeder Report will be completed on all casualties, including RTDs and collected by the S1/4 IAW their SOP. Units will submit all completed DA Form 1156s to their higher headquarters.

(2) Non-US Military Deaths. The BCT must transport the remains of any non-US Military personnel killed (DOW or KIA) due to US action to the Brigade MACP. Once the MACP Trainer has verified that the proper paperwork is done, the non-US Military personnel will be released.

b. Individual Modified Reconstitution. Units will be notified when Individual Modified Reconstitution is in effect. This method stops medical evacuation at the Level I facility (BAS). Soldiers will be immediately resurrected and returned through the personnel system (CTCP or BCT personnel section). Transportation from AXP/BCT personnel section back to their unit is the parent unit responsibility.

c. UNIT/TF Reconstitution. The senior OC/T (COG during FoF) may designate a unit, or a portion thereof, be reconstituted based on reporting and requests with no evacuation of casualties. Unit reconstitution procedures involve the processing of all requests for replacements. Casualties remain with their unit, and are re-keyed resurrected by the unit OC/T upon completion of proper request procedures. Unit reconstitution procedures are as follows: S-1 provides complete unit battle roster identifying the status of each individual from the unit (i.e., PFD, WIA, KIA, and MIA for those individuals of whom the status is unknown). An appropriate DA Form 1156, casualty feeder card will be attached to the roster. After verifying the DA Form 1156 and the status of all unit members is verified, the S-1 or representative will forward these forms to the OC/T conducting reconstitution. The unit will complete all specific requirements identified by the senior OC/T (i.e., new equipment PMCS receipt, inventories, personnel in processing, in-briefs, etc.). Based upon completion of these requirements the senior OC/T will determine the unit reconstitution time.

d. Immediate Reconstitution. All personnel immediately resurrected. The unit will begin consolidating forces as required in preparation for its follow-on mission. No reports to OC/Ts are required.

4. Unit Coordinating Instructions. All Soldiers evacuated back to the BSA/Mortuary Affairs Collection Point/Level II Medical Treatment Facility (MTF) will have appropriate cold weather gear, sleeping bag, personal hygiene items, and at least 2 MREs. The unit will have to coordinate for the Soldiers that were evacuated to Level II MTF as part of a CASEVAC operation.

5. Personnel Reconstitution during LFX Operations. No change to casualty evacuation process during LFX Operations. Casualties assessed during LFX operations will be RTD immediately following treatment at Role II to maximize training during LFX Operations. This process may be modified at any time during LFX operations based on unit training objectives. The COG is the approving authority of all personnel reconstitution during LFX Operations.

## **7-2 Vehicle/Equipment Reconstitution.**

1. Vehicle/Equipment Reconstitution. Reconstitution is a result of extraordinary actions taken by a commander to restore a unit to a desired level of combat effectiveness. Timely reconstitution sustains the fight designed to preserve the initiative. Possible reconstitution actions include cross-leveling or replacing vehicles, supplies and equipment; and conducting essential training. Command priorities allocate resources and preserve unit cohesiveness. Periodically, as directed in the 52ID OPORD, selected equipment may not be immediately available. Such equipment, if destroyed, may be unavailable for up to 24 hours. In order to model this loss of time, vehicles and equipment will be out of play for a minimum period of time, based on the training requirements, before they are reconstituted and can be used by the unit.

2. Low-Density Equipment Reconstitution. Reconstitution of Low-Density Equipment will follow the same procedures as all other equipment, except that the equipment will be out of play for no less than 12 hours. For the purpose of this paragraph, Low-Density Equipment is defined as a special-purpose vehicle/equipment in which the BCT possesses FIVE or LESS of overall. Examples: Shadow UAV, UAS Ground Control Station (GCS), JNN, PROPHET. On a case-by-case basis, Team 07s may authorize accelerated reconstitution if significant training value would be lost by following the 12 hour standard.

a. Individual Catastrophic Reconstitution (Red Card). Unit is responsible to follow all steps from the OPERATION GROUP VEHICLE CATASTROPHIC CARD IOT successfully complete the reconstitution process. The Unit Maintenance Collection point (UMCP) is the single point at which all catastrophic vehicles are reconstituted. A catastrophic vehicle represents a “burning hulk” that is unsalvageable and/or too great a cost to recover or repair. It should not have recovery assets deployed in support of it. If a unit desires to execute a catastrophic recovery using high lift assets, a low boy or HET, the Team 07 is the approving authority for that training objective and risk associated with the operation. All catastrophic vehicles must move to the UMCP on a non-contested move, supervised by an OC/T. If the vehicle is still on the battlefield at SOBE, the vehicle and personnel will attend Unit AAR. The vehicle can be moved to the UMCP from the AAR site upon ROBE.

b. Individual Damaged Reconstitution (Green card). Damaged equipment is categorized as Mobility, Firepower or Communication. Unit is responsible to follow all steps from the OPERATION GROUP EQUIPMENT DAMAGE CARD IOT successfully complete the reconstitution process. Maintenance shop must show necessary mechanic, tools, parts and POL to complete job and once all paperwork, mechanics, tools, parts and POL is verified and correct, equipment is reconstituted in base of repair time.

c. Immediate Reconstitution. All damaged equipment or personnel return immediately to their duty location as if there was no damage.

OPERATION GROUP VEHICLE CATASTROPHIC CARD				
UNIT:	Bumper#:	O/C:	MIN TIME	MIN TIME
EVENT		DTG	TEAM	OPS GRP
Vehicle Destroyed			0.0 hours	0.0 hours
Vehicle Arrived to UMCP			0.0 hours	0.0 hours
UMCP start vehicle inspection process/ECOD			2.0 hours	2.0 hours
UMCP create DA Form 2404 and submit to S4			1.0 hours	1.0 hours
S4 submit DA Form 1348-1 and DA Form 3590 to BDE S4			1.0 hours	1.0 hours
BDE S4 provide doc number and reviewed packet to DIV S4			2.0 hours	2.0 hours
DIV approved reconstitution			2.0 hours	2.0 hours
New vehicle arrived to UMCP			8.0 hours	2.0 hours

OPERATION GROUP EQUIPMENT DAMAGED CARD		
UNIT:	Bumper#:	O/C:
FAULT	PART REQUIRED	Repair Time
Flat/destroyed tire	Tire	1.0 hours
Vehicle fuel tank destroyed	Fuel tank assembly	2.0 hours
Oil cooler damaged	Oil cooler assembly	3.0 hours
Chassis wiring harness damaged	Chassis wiring harness	4.0 hours
Antenna destroyed	Antenna and antenna base	2.0 hours
Barrel inoperable	Replace or repair barrel	2.0 hours
Trigger well assembly	Trigger assembly	2.0 hours
Fault:		
DAMAGE DTG:		
REPAIR BY:		
REPAIR START:		
REPAIR COMPLETE:		

## **Chapter 8 Sustainment**

- 8-1 Personnel**
- 8-2 Unit Ministry Team**
- 8-3 TESS Casualty Assessment**
- 8-4 Causality Evacuation**
- 8-5 Medical Echelons**
- 8-6 Material Readiness Reporting**
- 8-7 Transportation**
- 8-8 Class of Supplies**
- 8-9 Ammunition**
- 8-10 Aviation FARP and Ammunition Operations**
- 8-11 Tactical Convoy Operations**

### **CHAPTER 8 - SUSTAINMENT:**

#### **8-1 Personnel**

Each unit will provide a battle roster to their OC/T counterpart on RSOI 1 before deployment from LSA Warrior. Each TF will also provide a daily strength report showing personnel strength figures of their subordinate units to their OC/T by total officers, warrant officers and enlisted Soldiers. In addition rotating units will provide a 100% accountability report to the 52ID DTOC every morning at 0600. This is especially important during live fire exercises.

#### **8-2 Unit Ministry Team**

1. Chaplains and Chaplain Assistants are full participants during the brigade's training mission.
2. The BCT UMT presents digital copies of all religious support plans at the in-brief on RSOI 1. UMTs furnish subsequent changes to their basic plan to the UMT Trainers throughout the brigade mission.
3. OC/Ts will not get involved with the content of religious worship services, however; OC/Ts provide feedback on whether UMTs conduct worship services in a professional manner and take into consideration the tactical environment.
4. The installation Chaplain's Office does not conduct direct ecclesiastical support. RTU Soldiers are welcome to attend worship services at the Installation.
5. During real world emergencies, UMTs can use the most expedient and mission safe routes to bring ministry. The Fort Irwin Chaplain's Office is responsible for the care and ministry to real world emergencies.

#### **8-3 Casualties Assessment**

1. Casualty cards are issued during RSOI and maintained in the Soldier's left shoulder sleeve pocket. GTA series TESS cards are not used at the NTC. After a direct fire engagement OC/T will fill-in cards based type, precedence and time of point of injury for combat injuries. Team 07s are the only authorized OC/T to modify the severity of evacuation categories (upgrade to KIA or downgrade) in order to meet training objectives. RTD cards issued at the direction of Team 07s will be issued at the POI (Point of Injury).

2. OC/T must record the time of injury, arrival at Role I and arrival at Role II on the casualty card. If a Soldier's card is lost or misplaced at the POI, OC/Ts will reissue a new card of the same type and the Soldier will continue to move through the MEDEVAC/CASEVAC system. Lost/misplaced cards without documentation (TC3 card, SF 600, etc.) result in an automatic Died of Wounds (DOW) due to inability to properly treat injuries and document care. Below are the types of TESS Casualties.

a. Wounded in Action (WIA) cards specify the type of wound, evacuation category, and status as ambulatory or litter. OC/Ts have an additional task of indicating, based on the tactical scenario, whether the injury is blast-related or ballistic, as well as whether the casualty also requires a Military Acute Concussion Evaluation (MACE) or CBRN-E treatment. The RTU is responsible for rendering treatment appropriate to the wound description, and meeting the evacuation time standards. OC/Ts will utilize the back of the TESS card to indicate phase, time of injury and treatment at each echelon of care, and if/where the casualty was RTD or DOW. "Return to Duty" assessments are reported as "Routine" to Warrior TOC, and their unit will process their DA 1156 according to unit SOP.

b. Killed In Action (KIA) cards will be issued based on Team 07 guidance for a battle period. This card will only be issued at time of incident. The unit is responsible for transporting casualties with KIA cards to the Brigade MACP. At no time will these casualties be transported to Role 2 or with Soldiers WIA.

c. DOW. The only personnel authorized to pronounce death are credentialed medical providers (MD/DO, not PAs) A soldier is DOW (died of wounds): if he is assessed as a casualty, is carrying a card indicating a Casualty Precedence Level (Urgent, Priority, or Routine) and one or more of the following is true:

- (1) Does not receive the appropriate treatment at any level of care (DOW-Treatment)
- (2) Is not evacuated to the appropriate level of care in the required amount of time. (DOW-Time)
- (3) Is not properly evacuated. (DOW Transport)
- (4) Is missing their MILES card and any documentation of wounds between Role I and Role II.

d. ROE/Safety Violation. Units will process casualties that have been issued penalty casualty cards as indicated on the card, the same as they would a standard casualty card.

3. Casualty Precedence. All casualty evacuation times are based on precedence. Time starts at the point of injury and is dependent on care provided. Times are not cumulative.

TABLE 8-1, Time Table Assuming Proper Tx		
Patient Cat	POI to Role I	Role I to Role II
URGENT	1 hr	2 hr
PRIORITY	4 hr	4 hr
ROUTINE	12 hr	

#### 4. Mild Traumatic Brain Injury (mTBI).

a. The following events will require screening for mTBI utilizing the MACE:

- (1.) Any service member in a vehicle associated with a blast event, collision, or rollover.
- (2.) Any service member within 50 meters of a blast (inside or outside)
- (3.) Any direct blow to the head or witnesses loss of consciousness.
- (4.) Command-directed or exposure to multiple blast events.

b. OC/T Reporting: Teams will report daily status consisting of the following to Warrior TOC: number of mandatory events, number of Soldiers requiring exams, number of MACE conducted, number of MACE conducted to standard

5. Unit medics fill out TC3 Card, at each echelon of care, IAW ATP 4-02.2, Medical Evacuation.

6. RTU medics are only authorized to give IVs to Soldiers who are part of their Brigade Combat Team.

### 8-4 Casualty Evacuation

1. Required Equipment. When casualties are evacuated to the medical treatment facility, they must bring as a minimum, their LBE, ACH, protective mask, JSList gear, MILES, MRE and sleeping bag. All sensitive items remain with the parent unit.

2. **MEDEVAC Platforms.** For medical evacuation (MEDEVAC) ground/air ambulance platforms (M997s, M113s, M1133s, HAGA, or UH/HH-60), casualties are loaded and secured IAW FM 4-02.2. Special care is required to ensure correct loading by patient precedence.

Table 8-3			
MEDEVAC Platform	Maximum Litter	Maximum Ambulatory	Mixed Category
M996 Wheeled Ambulance	2	6	1 litter + 3 ambulatory
MaxxPro Ambulance MRAP	2	3	
RG33 MRAP HAGA	3	6	1 litter + 3 ambulatory
Caiman MTV Ambulance	4	6	2 litter + 3 ambulatory
M1133 Stryker Ambulance	4	6	
M997 Wheeled Ambulance	4	8	2 litter + 4 ambulatory
M113 Tracked Ambulance	4	10	
UH/HH-60 w/ hoist	3	4	4 litter + 1 ambulatory
UH/HH-60 w/o hoist	6	7	4 litter + 1 ambulatory

3. **CASEVAC Platforms.** For non-medical military vehicles or casualty evacuation (CASEVAC) vehicles or aircraft, casualties are loaded and secured using the correct casualty precedence and equipment (IAW FM 4-02.2). Once loaded and secured, the casualties will arise from the litters and ride seated on the non-standard vehicle, utilizing vehicles seats and benches, proper eye protection, and ACH. Units will not exceed the casualty carrying capacity of the evacuation vehicle. The chart below outlines capacities for commonly used military vehicles:

Table 8-4			
CASEVAC Platform	Maximum Litter	Maximum Ambulatory	Mixed Category
M998 (4-person)	3	4	
M998 (2-person)	5	0	
M1081 LMTV	7	12	
Trk Cgo 2.5 or 5 Ton	12	16	
HEMTT Cargo	16		
UH-60 Black Hawk	3	10	1 litter + 6 ambulatory
CH-47 Chinook	24	31	4 litter + 25 ambulatory 8 litter + 19 ambulatory 12 litter + 16 ambulatory 16 litter + 10 ambulatory 20 litter + 4 ambulatory
C-130 Hercules	70	85	

Table 8-5 CH 47 Casualty Transportation Limits w/ Litter Support Kit	
Ambulatory	Litter
31	0
25	4
19	8
16	12
10	16
4	20
1	24

Table 8-6 UH 60 Casualty Transportation Limitation	
Ambulatory	Litter
10	0
6	1
0	3

4. Litters, litter straps, and all equipment required to properly transport the casualty must accompany casualties throughout evacuation.

5. Air CASEVAC Load/Unload Procedures. The first patient is properly secured to the litter, loaded aboard the aircraft, and properly secured to the aircraft floor. Once an OC/T verifies proper completion of procedures, the Soldier is released and seated in a troop seat. Remaining casualties are carried on litters to the cabin door inside of the rotor system for a UH-60 or to the ramp of the CH-47 under the crew chief's direction. These casualties occupy troop seats and comply with all loading instructions from the aircrew. During unloading procedures, the casualties exit the aircraft and remain within the rotor system abeam of the cabin door with the UH-60 (and at the ramp for the CH-47). At this location, litter patients are properly configured on a litter prior to movement away from the aircraft. All litters and all equipment required to properly transport the casualty will accompany casualties through the evacuation.

## **8-5 Medical Echelons**

1. (Role I) Medical Care. The first level of medical care includes the following:

a. Self-aid/Buddy aid require no special training.

b. Combat Lifesaver (CLS) must be certified and possess CLS bag. Combat Lifesaver Operations. During RSOI Companies must provide their OC/Ts with a list of current combat lifesavers prior to departing from LSA Warrior. OC/Ts inspect the combat lifesaver bags to ensure contents are current and to-standard. The current combat lifesaver bag inventory is located on <http://www.usamma.army.mil>

c. Combat Medics must be trained and certified to Emergency Medical Technician (EMT) level.

d. Treatment teams consist of a physician or a physician's assistant, a minimum of three appropriate combat medics (68Ws) and the appropriate medical sets, kits, and outfits organic to a treatment squad. Must possess a minimum of one x Trauma MES and one x Sick call MES or 1 x Tactical combat medical care MES. Like-elements provide this echelon of care at ambulance exchange points augmented with treatment teams, chemical casualty decon sites, and brigade support medical companies (BSMC) or area support medical companies (ASMC).

2. (Role II) Medical Care. At the NTC, in order for a Medical Treatment Facility (MTF) to be considered at Role II this facility must duplicate Role I capabilities and expands services available by having operational x-ray, lab, dental and patient hold capabilities. The Role II medical treatment facility will typically be the 'end' destination of all TESS casualties here at the NTC unless an Echelon III MTF is established for a rotation. Once casualties receive proper treatment from the Role II MTF and evacuation assets have been allocated for movement to LSA Warrior, they will be processed back into the brigade by the BCT S-1 section, or sent to the MACP.

3. SOF qualified medics must be one of the following; Special Forces Medic (MOS 18D); Special Operations Independent Duty Corpsman (NEC 8403); or Air Force PJ (AFSC 1T2X1), who must have attended the Special Operations Medical Training Branch and are working within USASOC, MARSOC, NAVSOC, or AFSOC. SOF medics may treat TESS casualties as outlined below:

a. Urgent. If properly supplied, SOF RTU medical personnel may provide treatment to an urgent patient for a period of up to 12 hours.

b. Priority. SOF RTU medical personnel may provide care to a priority patient for a period of up to 24 hours.

c. Routine. SOF medic can sustain the casualty for a period of up to 36 hours. Depending on the severity of the injury, casualties with routine injuries may RTD after treatment by a qualified SF medic. The OC/T will inform the medic if the routine casualty requires Level 2 treatment at the time of injury.

## 8-6 Material Readiness Reporting

1. Units report readiness status IAW unit SOP. TF/Separate Companies provide a daily updated copy of the DA Form 2406/026 to their respective OC/Ts. Brigade Maintenance Meetings. Units report their readiness status IAW unit SOP. The unit motor officer or representative provides current combat system maintenance status to the Logistics Trainer Team at the Brigade maintenance meeting.

2. Vehicle Evacuation from the NTC Training Area must meet one of the following criteria:

- a. Non-repairable at the Field maintenance level and requires Sustainment level maintenance.
- b. The required part(s) to fix the vehicle are not available and/or have an ESD that exceeds the estimated remainder of the campaign.
- c. Vehicle is found by an ECOD to be uneconomically repairable.
- d. Vehicle is damaged in an accident/rollover that prohibits its further operation.
- e. Vehicle type is affected by a Safety of Use Message (SOUM), and condemned from use, until an action that cannot occur in a field environment takes place.

3. RFI. Units submit a 52ID / X Corps RFI through the G3 for approval (Goldminer 07). The RFI must include an evacuation plan, maintenance plan to include the higher source of maintenance's accepting job order number, or estimated receipt date of necessary repair parts with valid status.

## 8-7 Transportation

1. Movement of Supplies: All notional supplies are transported on unit vehicles. The amount and type of supplies cannot exceed the weight or size capacity of these trucks. Table 8-7 specifies vehicle capacities.

Table 8-7 Vehicle Cargo Carrying Capabilities					
VEHICLE	NOMENCLATURE	OFF/ON PAYLD	TOWED LBS.	CREW/PASS	CAP. CUB FT.
M1078	LMTV	5,000 LBS.	12,000 LBS.	3/12	576
M1083	MTV	10,000 LBS.	21,000 LBS.	3/12	576
M1075	Palletized Load System	33,000 LBS.	87,000 LBS.	2	1,280
M1120	Load Handling System	22,000 LBS.	71,000 LBS.	2	1,280
M1070 w/ M1000 (trailer)	Heavy Equipment Transport	140,000 LBS.	230,000 (GCWR)	2/4	N/A
M1152	TRK, UTL 5/4T	2,500 LBS.	3,400	1/9	215
M830 M923/4/5	TRK, CGO 5T LWB 6X6	10,000 LBS.	15,000	2/20	411
M830 M927	TRK, CGO 5T XL WB 8X8	10,000 LBS.	15,000	2/0	597
M871	SEMITRAILER LOWBED 22 1/2'	30,000 LBS.	N/A	N/A	855
M977	TRK, CGO HEMTT 10T 8X8	20,000 LBS.	20,000	2/0	540
M978	TRK, TNK HEMTT 2500 GAL. 8X8	2,500 GAL.	20,000	2/0	N/A
	TRLR, CGO 3/4T	1,500 LBS.	N/A	N/A	175
	TRLR, CGO 1 1/2T	3,000 LBS.	N/A	N/A	283
	TRLR, CGO 2T	4,000 LBS.	N/A	N/A	N/A
M35	TRK, CGO 2 1/2T	8,000 LBS.	15,000	2/20	408
	TRK, CGO 5T	10,000 LBS.	15,000	2/20	580
	TRK, DUMP 5T	10,000 LBS.	15,000	2/15	135

## **8-8 Class of Supplies**

1. **Class I.** Units provide a listing of all ration breakdowns and the total number of rations per breakdown on a daily basis: water, ice, dry rations and wet rations. Units drawing rations from TISA should have a designated representative from the Class I breakpoint.
2. **Class III.** Units provide a listing of basic load Class III (Bulk) items for each of its fuel assets. The unit's POL representative ensures each fuel vehicle has the proper safety gear: gloves, apron, goggles and spill kit. The CL III (P) forecasted to the Supply Branch NLT D-60. It is maintained by individual units and any replenishment will be requested through the BDE's GSO in the rear, who collects requests to be filled by the HAZMART and shipped to the Forward DSU for distribution. Forward Support Companies or Logistic Support Teams will be responsible for maintaining and the distribution of CL III (P) to their respective maneuver battalion(s). A designated OC/T is provided with fuel accountability twice a day, once in the morning and once in the evening. No later than RSOI 4, unit POL representatives provide a Fuel Filter Effectiveness Test (FFET) to their designated OC/T prior to deploying to the box. No 'over the top' fuel transfers between vehicles or fuel trailers is authorized at NTC in order to avoid unnecessary fuel spills in the training area.
3. **Class IV.** Data pertaining to the total Class IV item, barrier and survivability material, allocated and issued by unit to the S-4 OC/T.
4. **Class V.** The Required Supply Rate (RSR) of ammunition is established by maneuver commanders NLT D-90 and submitted to Commander, NTC Material Management Center, however, requests for changes may be requested after the rotation starts. The RSRs are compared with available theater stocks and a Controlled Supply Rate (CSR) is determined and provided to maneuver commanders. Prior to the start of each mission, the TF S-4 or his representative provides data pertaining to the total amount, by type, of ammunition allocated, issued and the location of the ammunition to the appropriate OC/T. Ammunition may be stockpiled/cached in defensive positions. Appropriate numbers of vehicles/trips are used to emplace this ammunition and the stocks are subject to direct and indirect fire. The OC/T on the ground makes the call if the ammunition is effected based on location, efforts to safeguard it, and strike of incoming rounds. The stockpiled ammunition is represented by either "paper" ammunition or by pre-stocked MGSS and ATWESS rounds. NOTE: Appropriate flares and chaff rounds are ordered and received as paper ammunition in order to benefit from an aircraft's flare/chaff dispenser.
5. **Class VII (Operational Readiness Float at the NTC).** If a Brigade Combat Team brings one or more combat platforms to be used as an ORF, the weapon system MUST be instrumented with TESS prior to the system maneuvering in the rotational unit's area of operations. Units include these platforms in their TESS request prior to arrival for RSOI operations.
6. **Class VIII.** Units provide a complete listing of all Class VIII items on hand, by medical chest, and orders to the medical OC/T as required. Combat lifesavers must receive Class VIII resupply through normal channels. Class VIII is utilized to treat all casualties. There is no simulation of treatment, except when a procedure could put a Soldier in danger. Rotational units should request/issue Class VIII medical supplies throughout the rotation identically to real-world operations.
7. **Class IX.** BN TFs/Separate Companies provide a daily status of requisition initiated to their respective OC/Ts in a format that breaks down information by company team, by priority (02/03, 05/06, 12/13). Additionally, GCSS-Army CL IX reports may be required by respective OC/Ts. The tech supply provides a daily status of all requisitions processed and passed to their respective OC/T in a format that breaks down information by CO/TM by priority.

## **8-9 Ammunition**

1. Rotational units are issued three types of ammunition: simulators, replicators, and paper ammunition. Blank ammunition simulates live rounds and is issued IAW the unit's basic load or pre-established issue plan. While in LSA Warrior, units are authorized to have .50 caliber, below blank ammunition distributed, and uploaded. Units are also authorized to upload paper ammunition and



replicators within LSA Warrior. All MGSS charges and ATWESS rounds remain outside the LSA in the ASP or a Field ASP until the unit departs, at which time they can be issued to the unit. At no time are units allowed to setup an ATHP to store ammunition inside LSA Warrior. At no time are units allowed to have live ammunition in LSA Warrior.

2. BLUFOR and COEFOR units are never authorized to use Chemical Smoke (CS), artillery, hand grenade simulators, Red Smoke and Red Star Clusters. Red pyro is only carried by OC/Ts in case of an emergency.

3. Simulators and Direct/Indirect Fire Cue (DIFCUE). Simulators are ordered IAW unit SOP and handling instructions outlined in the following paragraphs of the EXOP.

4. Anti-Tank Weapon Effects System Simulator (ATWESS) replicate AT-4, DRAGON, TOW, Javelin, and STINGER missiles. Units are responsible for requesting the appropriate amount of rounds by type and nomenclature using DA 581 through the Brigade Ammunition Officer. Units have the responsibility of color coding the ATWESS rounds in the Field Ammunition Storage Point (Field ASP) prior to issue or transport to their units.

RED	TOW/HELLFIRE Missiles/Javelin
YELLOW	AT-4 Missiles
BLUE	Stinger Missiles

4. One MGSS charge represents one main gun tank round.

5. Ammunition replicators are issued by the NTC for use during Force-on-Force.

6. Mines may be shifted IAW the brigade's main effort within the ammunition handling instructions outlined in Ch. 5. All mines will be disarmed and repacked in their original storage containers prior to movement. Currently, conventional anti-personnel mines are not issued to units.

7. Demolition. The amount of inert demolitions available to each engineer unit approximates an offensive basic load. BLUFOR units use these items exclusively to replicate breaching charges during offensive missions in Force-on-Force.

a. The items include: C4, shape charges, cratering charges, det cord, electric and non-electric blasting caps, time fuse, igniters and Bangalore torpedo sets. Live non-electric blasting caps, det cord, time fuse, and fuse igniters are used in Demolitions Effects Simulators (DES). These items must be built by rotational units and must be drawn from the rotational unit field ASP.

b. At the completion of a breach, the OC/T on site recovers the inert demolitions used and maintains the demolitions until the rotational unit requisitions and is resupplied with demolitions. The OC/T then reconstitutes the demolitions.

c. At the infantry platoon/company level, TOW, Javelin, recoilless rifle and mortar rounds are replicated with a simulated round of comparable size and weight requested and received through Class V channels. The weight of each mortar round is replicated with sandbags as outlined below:

60mm Mortar:	4.5 pounds = ¼ full sandbag
Recoilless Rifle Round:	8 pounds = 1/3 full sandbag
81 mm Mortar:	9.5 pounds = ½ full sandbag
AT-4 (Viper):	15 pounds = ¾ full sandbag
Javelin:	21.6 pounds = 1 full sandbag

d. MRE hand grenades. MRE hand grenades are made by the rotational unit and issued based on DA 581 requests.

(1) Blue Chem-Lite – Concussion Grenade (MK3A2).

(2) Yellow/Green Chem-Lite – High-Explosive/Fragmentary Grenade (M67).

- (3) Red Chem-Lite – Stun Grenade (M84).**
- (4) White Chem-Lite – Incendiary Grenade (AN-M14 TH3).**

**e. Satchel charges are permissible at the NTC. The OC/T on site determines the effects of the satchel charge. The charge damages or destroys bunkers, aircraft, and personnel. The 10 meter rule applies in the emplacement of the satchel charge.**

**8. Paper Ammunition. Paper ammunition placards are used for those ammunition types not simulated or replicated by other methods. Units follow the same request and handling procedures for paper ammunition as those required for other ammunition types. The following types of paper ammunition are issued:**

**25mm BRADLEY  
60mm HE / WP / ILL  
81mm HE / WP / ILL  
120mm Mortar HE / WP / ILL  
155mm Artillery: HE (M107, M795)/ WP (M825, M110) / ILL/ IR ILL/ HERA/ / ICM (HE, DP, BB)  
RAAM (L, S), MACS (231, 232, 232A1), GB, WB, RB, Excalibur, Primers, Fuses  
105mm Artillery: HE (M1, M760)/ SMK/ HERA/ IR ILL/ ILL/ HEP/ ICM/ APERS-T  
Launch Pod Munition Type: JED / JEH / JTB / JEL / JEE / JEN / JTC / JTG  
2.75 in Rockets  
30mm  
Chaff/Flares  
Hellfire Missiles**

**9. Firing. When a crew fires a weapon system, the appropriate number of paper ammunition placards are returned to the unit OC/T. OC/Ts ensure the amount of ammunition represented by the placards on hand matches the number of TESS rounds available to fire.**

**10. Resupply. Paper ammunition is issued at two locations during the rotation. First, the Forward Support Company Observer/Controller in LSA Warrior issues it during initial upload, after the DA581s have been validated. Second, the Goldminer ATHP trainer at the ATHP site issues paper ammunition once DA581s and transportation hauling capabilities are validated. Paper ammunition is regenerated through the FSC OC/Ts back to the Goldminer ATHP trainer. Ammunition resupply times to the ATHP is minimum duration of eight hours and a maximum of 12 hours.**

**11. Paper Ammunition Transfer. In order to transfer paper ammunition, the ammunition placard is physically transported to the gaining unit IAW proper handling procedures. OC/Ts ensure the losing vehicles MILES ammo count reflects the transfer of ammunition. The gaining vehicle's count is not increased until the ammunition placard is on-hand.**

**12. Engineer Ammunition for Counter-Mobility: All CL V engineer counter-mobility replication devices used during STX and/or Force-on-Force operations are requested by brigade through the TAS-C. All CL V replication devices capable for coordination and pick-up will be conducted NLT RSOI 4. Replication devices capable for coordination and pick-up are as follows: M139 Volcano Mine Dispenser and M131 Modular Pack Mine System.**

**13. Engineer Ammunition for Mobility: All CL V engineer mobility simulation devices used during STX and/or Force-on-Force operations are requested by brigade through NTC. All CL V simulation devices will be coordinated NLT RSOI 4 for pick-up at rotational unit field ASP. Simulation devices capable for coordination and pick-up are as follows: M58 Mine Clearing Line Charge (Empty Tub) and Smokey Sam Simulator**

**14. Ammunition Handling. Individual TESS gear will not be removed in order to handle ammunition. The following paragraphs outline the minimum requirements a unit is expected to follow in conducting resupply operations at the NTC.**

a. Corps Storage Area (CSA). NTC's ASP is the CSA for the theater. The CSA issues Class V. The CSA has no transportation capability in Theater but does possess MHE.

b. Controlled Supply Rate (CSR). Class V drawn from the CSA is the total amount of Class V available for the exercise. CSRs are determined as per the 52ID OPORD. Rotational Units request ammunition through NTC Support Brigade during the Logistics Recon. Requests for additional Class V during rotation go through the BAO to the Corps (NTC) ASP. Additional Class V must be approved by 52 ID.

c. Units transport all Class V drawn from the CSA. The CSA verifies vehicles meet DD Form 626 standards prior to loading. Vehicles will not be loaded beyond their capacity in weight/cube of simulators, replicators or paper ammunition. Any vehicle not meeting DD Form 626 standard is not permitted to transport munitions of any type. CLV accountability will be maintained as per all applicable Army regulations across all echelons.

d. Verification of Simulated, Replicated, and Paper CL V. Once ammunition is transported from the CSA to the ATHP or throughput to a supported unit, the OC/T on site collects or marks off the number of boxes/rounds transferred to their units from the placards. When units transfer all of the Class V from a pallet, the unit repositions the pallet(s) within the cargo vehicle to make room for material or equipment for backhaul. Pallet(s) are returned to the ATHP during the next established pickup.

e. All ammunition will be handled by enough personnel to move it, for example, one Soldier can safety lift only one tank main gun or TOW round and is allowed to lift one MGSS or ATWESS charge. A single Soldier may not carry more than the following number of ATWESS charge(s): one TOW, two AT-4s, or two stingers. This limit includes the loading of ATWESS in the weapon systems, if applicable.

**Table 8-8 Vehicle Mine Carrying Capabilities**

	5/4 Ton	2 1/2 Ton	5 Ton	10 Ton	22 Ton
M21	27	54	111	12	203
M15	551	104	204	108	712

**Table 8-9 Ammunition Transportation Capabilities**

**Pallets - Full Weight and Cube**

Nomenclature	5 Ton	HEMTT	Low Boy	PLS	S & P Tlr
120mm Tank	4	8	14	10	16
155mm Arty	12	27	30	37	56
155mm Propellant	T4	7	14	16	16
155mm Copperhead	6	8	14	12	16
105mm Arty	4	8	14	10	10
40mm MK 19	6	8	14	10	10
TOW	4	6	6	8	8
Dragon	4	6	6	8	8
Stinger	4	6	6	8	8
AT-4/Viper	4	8	14	10	16
25mm	4	6	8	16	16
M21 Mine	4	8	14	10	16

**Table 8-10 Ammunition Transportation Capabilities**

M15 Mine	4	8	14	10	16
MOPMS / APOBS (# mines)	61	94	308	110	148
Hornet (#mines)	5	8	27	9	13
Hellfire	4	3	8	10	12
2.75in Rocket	4	7	8	10	12
5.56mm	4	8	14	10	16
7.62mm	4	8	14	10	16
.50 cal	3	6	12	10	14
Rkt Mtr MICLIC	4	10	18	10	18
MICLIC	0	3	5	4	6
60mm Mortar	4	8	14	10	14
81mm Mortar	4	8	14	10	16
120mm Mortar	5	10	14	10	14
Volcano Honeycomb	4	8	14	8	16

<b>Table 8-11 Vehicle Stinger Missile Carrying Capacities</b>	
# of Missiles	M998
M998	6
M113	6
M35	39
M923	42
M978	72
M101/M105	18/22

<b>Table 8-12 Ammunition Transportation Capabilities</b>			
<b>120mm Mortar Box Ammunition</b>			
<b>Nomenclature</b>	<b>Capacity</b>	<b>Boxes</b>	<b>Rounds</b>
Trailer 3/4 Ton	1,500 lbs	18	37
Trailer 1 1/2 Ton	3,000 lbs	37	75
Trailer M997 10 Ton	20,000 lbs	250	500
Trailer 22 Ton	30,000 lbs	375	750
M998 5/4 Ton	2,500 lbs	31	62
Truck 2 1/2 Ton	5,000 lbs	62	125
Truck 5 Ton	10,000 lbs	125	250

**16. Excess Simulated, Replicated, and Paper CL V.** OC/Ts confiscate excess ammunition carried by vehicles and individuals. Vehicles and individuals are assessed as SBD and casualties as necessary for carrying excess ammunition. Ammunition exceeding the carrying capacity of a vehicle or convoy is confiscated by OC/Ts. Class V confiscated from the convoy is redesignated at its origin; units are then required to send appropriate vehicles back to recover the Class V.

**17. Transportation.** All ammunition, simulators and paper, is treated as if it had the same weight and mass as the rounds it represents. For example, one MGSS charge equals the weight of one take main gun/howitzer round. Ammunition beyond the capability of the aircraft or vehicle will be confiscated by an OC/T and the vehicle or aircraft assessed as a maintenance loss due to overloading. NTC EAB units are exempt from this requirement when transporting simulators, replicators or paper ammunition from the FASP to the BSB ATHP.

**18. Blank vs. Live.** Blank and live ammunition will be separated by the maximum extent possible. Blank and live ammunition will NOT be stored on the same pallet. Blank and live ammunition may be stored on the same PLS flat-rack, but will be separated by space and/or a physical barrier. Blank and live ammunition may be transported on the same vehicle, but must be separated prior to issue.

**19. 52ID Fires Brigade** determines the Field Artillery Unit Basic Loads (UBL) and Controlled Supply Rates (CSR) UBL. The proponent for field artillery ammunition placards is the Field Artillery Training Team. The CSR and UBL will be issued on ammunition placards.

a. Ammunition for immediate consumption must be requested from the 52ID Fires Brigade.

b. Vehicles may carry the number of complete 155mm rounds indicated. Self-Propelled Howitzers may carry a 10% overage of fuses, primers, and propellants.

M1096A	37
M548	96
M992	90
M35 series	48
M813/M913 series	100
M985	200
M1074/5/6	176
Ammunition Trailer	8

c. Ammo vehicles must be physically present to receive their placard. Once ammunition arrives at battery position, one of the battery OC/Ts inspects the placard and deducts the quantity of ammunition delivered. The placard remains with the ammunition vehicle.

d. Ammunition transfer rate for 155mm is one complete round per man per minute if done manually and eight rounds per minute if done using Material Handling Equipment (e.g. fork lift or vehicle crane). Ammunition transfer rate for 105mm ammunition is three rounds per man per minute if done manually and 30 rounds per minute if done using Material Handling Equipment (e.g. fork lift or vehicle crane). All MHE equipment operators must be licensed and present with the MHE during ammunition transfer.

e. Times. Since the ATHP may not be open continuously, the brigade should coordinate ammunition pick-up times. The FA battalion requests ATHP appointments from the supported brigade if the artillery is DS or reinforcing. If the artillery is GS or GSR, the ATHP appointments are scheduled through the 52ID Fires Brigade.

f. Firing. Batteries may fire only those projectile, fuse and propellant charges they have on hand. Batteries track ammunition internally IAW unit SOP; their counts are checked for accuracy by battery OC/Ts.

20. MLRS. MLRS ammunition is issued on a placard indicating the number of launch pod containers (LPCs). In the event the unit does not have extra LPCs in order to train reload operations, the transfer rate for MLRS is 12 minutes per LPC to the launcher and 10 minutes per LPC to the HEMMT or Trailer.

21. Aerial Ammunition Transport. Personnel trained to load and handle hazardous cargo must be on hand to perform prescribed duties. The cargo to be transported, shipping equipment and helicopters must be present at the pickup and drop sites.

a. Capability. Simulated loads will not exceed aircraft or environmental load limitations.

b. At the transfer point, Maneuver team OC/Ts issue paper cards to represent individual rounds. This issue is based on the amount of ammunition replicated by both shipping documents and pallets.

c. The LSA Warrior transportation elements off load all of the pallets. The FSC assets load them.

d. If internally loaded, missiles and rockets can be transported using non-shipping containers weights.

e. If slung under the aircraft, ammunition must be calculated as being in their shipping crates. Should ammunition be transported without shipping crates it will be considered unserviceable due to shock and vibration.

22. During backhaul, task force support units will retain pallets after issuing the ammunition. Once the ammunition is issued, the task force trucks may stack pallets using the same criteria as the LSA Warrior. Distribution platoons must backhaul residue and exchange the containers with the new load from the FASP.

23. Force on Force before LFX. If Force-on-Force comes before Live Fire, support units must carry enough pallets to replicate the ammunition carried on the support trucks, that is anything above the amount carried in combat vehicles.

#### **8-10 Aviation FARP and Ammunition Operations**

1. Aviation FARPS at NTC are temporary and do not require a site plan; a risk assessment is still required. All standards within DA PAM 385-65 apply.

2. Paper Ammunition or Replicated Load Method will be designated prior to each rotation to simulate the supply, transportation, and time requirements to support an aviation task force is paper ammunition.

a. Paper Ammunition Method:

(1) Tracking. Hellfire missiles, 2.75-inch rockets, OH-58D .50 caliber machine gun, and 30mm are notional and tracked on an 8x10 inch Ammunition Loading card. This card represents the actual weight and dimensions of the ammunition when planning and transporting large caliber ammunition. Small arms for M-249, M-240, M-4/M-16, and .50 cal MGs are replicated using actual blank ammunition.

(2) Ammunition Breakdown Time: Ammunition other than actual blank ammo will follow the below prescribed breakdown times prior to being able to use the Paper ammunition. To determine the total time to breakdown a given load of ammunition, multiply the ammunition time factor by the amounts of ammunition, then divide by the total number of personnel available. For example, if 10 Hellfires were transported, five personnel could break them down in the less than 2 minutes. All break down times will be DOUBLED with the absence of a forklift or suitable mechanical lifting boom.

Table 8-10, Figure 1 Aviation Ammunition Breakdown Times			
	Hellfire	Rockets	Cannon
Breakdown Time	1 min/1 missile	1 min/ 4 rounds	1 min/ 100 rounds

(3) Attack Aircraft Re-Arming Time  
Table: Table 8-10, Figure 2 prescribes the necessary time an attack aircraft must remain on the ground versus the number of dedicated re-arming personnel. PAX must be standing outside the aircraft, not engaged in refueling. The time will begin while the aircraft is in re-fuel. An additional five minutes per aircraft penalty will be added if all of the personnel effecting re-arming are not certified; such as armament MOS, attack aircraft crew chief or rated pilot. Time requirements are for the desired ammunition loads only. Aircraft found to be in violation of the below table will be assessed as destroyed due to a notional re-arming incident. Table 8-10 Figure 2 is applicable per each aircraft.

Table 8-10, Figure 2 Aviation Ammunition Loading Times				
	HELLFIRE	Rocket Pods	30MM/.50cal	30MM w/ side loader
1 PAX	N/A	20-40 min	N/A	20 min
2 PAX	10-20 min	10-20 min	30 min	15 min
3 PAX	5-10 min	5-10 min	25 min	15 min

(4) Air Volcano ammunition breakdown. Air Volcano ammunition will be broken down at the rate of 1 Man Hour/ 40 Canisters. For example, four Soldiers break down 160 canisters in 1 hour. Air Volcano load times are listed in Table 8-10, Figure 3 for broken down load

Table 8-10, Figure 3. Volcano Load/Unloading Time		
Team	Canister Upload (160)	Empty Canister Download
6 PAX	6 Min	4 Min
4 PAX	10 Min	5 Min
2 PAX	15 Min	8 Min

b. Replicated Load Method: This method uses inert Hellfire missiles, 2.75" rockets, 30 mm, along with sand-filled shipping crates to replicate the transportation requirements and reload times.

(1) The unit will sign for replicated Class V hellfires, 2.75" rockets, and 30MM. Sand filled crates will be used to replicate the size and weight of the actual ammunition shipping crates. The crates will be organized in pallets at the Division ASP. The unit will then transport the crates as they would in actual combat.

(2) Aircraft will execute rearming operations by landing at the FARP, arming the aircraft with the replicated ammunition, and immediately de-arming. Only the Aviation RTU Commander or Eagle 07 may approve aircraft flying with replicated ammunition. The FARP OC/T will adjudicate appropriately, adding only the amount of ammunition loaded to the aircraft's TESS system.

(3) Units are responsible for rebuilding the pallets after change of mission and placing them in their original condition at the end of rotation.

#### **8-11 Tactical Convoy Operations**

1. Use of MSRs. The hardball surface of Barstow road and the cantonment area are off limits to all tactical convoys. All other MSRs and ASRs to include all paved roads, unimproved roads, and tank trails are available for use by rotational units. Further restrictions will be specified in the 52ID deployment order.

2. Convoy speed limits posted in Chapter 14-9 must be adhered.

3. Tactical Convoy Operations. All movements within and outside of the brigade sector are considered tactical movements, and must be tracked at the appropriate echelon.

## **Chapter 9 Aviation**

- 9-1 General**
- 9-2 Radio Procedures**
- 9-3 TESS**
- 9-4 Direct Fire Engagements and Battle Damage Assessments**
- 9-5 Casualty Operations**
- 9-6 Aviation CBRN**
- 9-7 Personnel Recovery Training**
- 9-8 UAS Employment**
- 9-9 Air Assault and Air Movement Operations**
- 9-10 Missions in Support of Special Operations**
- 9-11 Airborne Operations**
- 9-12 Fixed Wing Aircraft**
- 9-13 Airspace Control**
- 9-14 Close Air Support (CAS)**

### **CHAPTER 9 – AVIATION:**

#### **9-1 General**

1. All assembly areas on the NTC reservation are to be considered tactical and are considered to be forward of the light line. All assembly areas are subject to enemy actions consistent with OPFOR doctrine and tactics used against such areas.

2. Aircraft Markings: All aircraft will be marked in white chalk with 2 inch thick numbers that are 30 by 30 inches. These numbers will be designated by the aviation OC/T team. For UH-60 aircraft, the numbers will be placed midway on both sides of the tail boom. Chalk numbers will be placed on both AH-64 engine nacelles. For CH-47 aircraft, the number will be placed on both sides of the aft pylon. OC/T aircraft are painted OD green and orange and do not have chalk markings.

3. Aircraft and Vehicle Survival Equipment. All aircraft and vehicles will have as a minimum, two quarts of water, one MRE, and one blanket or poncho liner for every person on board. A cold/hot weather survival kit can be used in lieu of the above listed items. One kit will be on board for every two personnel. Attack helicopters will have one quart of water and a survival vest per crewmember due to space limitations.

#### **9-2 Radio Procedures**

1. Desert Radio. BLUEFOR aircraft flight follow with Desert Radio and will include the covering Eagle OC/T aircraft in their flight. Eagle OC/Ts will provide position reporting for BLUEFOR aircraft on a case-by-case basis, e.g., during mission profile in areas with limited communication capabilities. OPFOR/Admin aircraft will flight follow with Desert Radio via pre-coordinated discrete frequencies. During any live fire portion of the rotation, aircraft will flight follow with “Zulu Tac” prior to conducting operations north of Phase Line Dragon. This ensures the aircrews have the timeliest information during the live fire event.

2. DTOC, Eagle TAF, and Desert Radio will monitor and track all aircraft missions.

3. Lost Commo. Aircraft operating without OC/T escort (normally single ship) will return along their ingress route until commo with Desert Radio is established or the aircraft arrives at its point of departure. Single aircraft operating with OC/T escort should signal the OC/T, land, and conduct operations IAW OC/T guidance. Flights operating with OC/T escort must maintain communications with their OC/T through at least one aircraft. If commo with the OC/T is lost, the flight must reestablish commo with the OC/T.

4. All AC and ATC procedural requirements must be in place prior to launch. UAS operators will maintain radio communications with Desert Radio and/or Air Traffic Control personnel and report IAW established AC measures. If radio communications is not established by the unit, the OC/T must contact



Desert Radio to ensure procedural control is maintained to coordinate local airspace. RTU PACE (Primary, Alternate, Contingency, and Emergency) plan must include the NTC-authorized field phone.

5. Aircraft Communication Requirements. OPFOR aircraft will maintain contact with the Eagle TAFF or OPFOR/COB LNO during all operations in the maneuver box. Additionally, positive communications with Desert Radio shall be maintained at all times.

6. IFF/SIF Requirements. All rotary wing aircraft, including every aircraft in multi-ship formations, will squawk Mode 3 code 4000, at all times while they are conducting flight operations. In addition, all aircraft will install the current "A" / "B" Mode 4 IFF codes. The unit is responsible for bringing this COMSEC on a Simple Key Loader (SKL) from their "home station - Combat Aviation Brigade S6."

### **9-3 TESS**

1. TESS/AGES Equipment. All aircraft must have an operational TESS/AGES system installed in order to operate in the designated maneuver area forward of the NTC Light Lines (the "box"). TESS will remain "ON" at all times, except during required maintenance operations, or bonafide emergencies. Aircraft will have all required ASE equipment installed and operational in order to receive credit for the reduced vulnerability capability of TESS/AGES-II. All personnel must wear an individual TESS system to include HALO (HALO and IWS harness are not required on crew members during flight) when inside the designated maneuver area to include assembly areas or logistic bases. The TESS harness is not required while conducting pre-flight or maintenance on the aircraft; upon leaving the aircraft the harness must be worn. Damage to contracted equipment by removal and re-installation of rotational unit, may result in financial charges to the unit.

2. Aircraft Instrumentation. All aircraft must have an operational TESS B or Man worn Instrumentation Kit (MIK) installed to operate in the maneuver area. These devices provide the NTC with the position location and other required data during the rotation. All aircraft with the Counter Missile Warning System (CMWS) will ensure it is operational. TESS Coordination Meeting. The unit will coordinate a meeting between the Aviation RTU TESS representative and WTA personnel to outline the schedule for the WTA contractor to install aircraft TESS and instrumentation. The unit will provide the contractor with the priority of installation for each aircraft to facilitate force package build up. All TESS and instrumentation is contractor installed, but the unit has supervisory and accountability responsibility for all equipment. No removal of TESS is authorized by the rotational unit. UH-60 /CH-47 must draw an additional TESS harness for every M-240H weapon system in order to pair the weapon with the harness. Installation. Units will sign for the tracking equipment and be responsible to meet prearranged installation and de-installation appointments with the civilian contractor. Scheduled conflicts will be resolved by the Senior Aviation Trainer. TESS Bs will not be taken off Fort Irwin/NTC without the approval of the Senior Aviation Trainer. If an aircraft must leave the reservation, the unit must coordinate with the Senior Aviation Trainer so that arrangements can be made for removal and/or reinstallation of the TESS B. The TESS B will be deactivated prior to departing the NTC reservation.

### **9-4 Direct Fire Engagements and Battle Damage Assessments**

1. To adjudicate Rotary Wing Air to Ground engagements, the Eagle OC/T provides the Eagle TAFF with the engagement information. The Eagle TAFF verifies OPFOR at BLUEFOR passed grid and verifies with Blackhorse TAFF. Probability of Kill (PK) is 80% for Hellfire on all vehicles, 75% for Rockets on trucks and unarmored vehicles with 75% mobility kills only for BMP/OSVs. The Eagle OC/T will contact the Palehorse OC on the ground for adjudication purposes. If the Palehorse OC is not available, the Eagle TAFF will analyze the engagement and inform the Blackhorse TAFF of the number of vehicles to be black boxed based on PK. Eagle TAFF will then call the covering Eagle OC/T with the adjudicated BDA. The covering Eagle OC/T then provides the BLUEFOR aircrew(s) with their BDA. To avoid compromising both BLUEFOR and OPFOR positions, Eagle OC/Ts will fly out to OPFOR vehicles to verify BDA only if unable to make contact with the covering ground OC/T.

2. To adjudicate Ground to Air engagements, reference the Chapter 6, ADA.

3. Eagle TAFF will report directly to Eagle or Palehorse OC/T any confirmed direct fire engagements from rotary wing aircraft. Raven OC/T will report any rotary wing engaged by fixed wing platforms.

4. Maneuver Area Boundaries. All aircraft will abide by the maneuver area boundaries and published ACO. Aircraft flying out of the designated boundaries or flying in unauthorized areas will receive a warning. If corrective action is not taken or violation occurs again, the aircraft will be assessed by the aviation OC/T as being damaged-not repairable by friendly or OPFOR fire from adjacent notional units.

5. Aircraft Recovery (TESS kill): The covering OC/T will verify the kill code to ensure it was a valid engagement and provide guidance on how to proceed. If part of a formation flight, the aircraft will continue on until it arrives at the next intended landing point. The OC/T will pass instructions to the aircrew for landing or recovery and any permissible radio and/or electronic notifications. The crew will take actions IAW OC/T guidance. Aircraft assessed as damaged flyable may self-recover, but must consider the damage to the aircraft and the injuries to personnel. Chapter 7-2, 2, discusses Reconstitution.

6. Aircraft and Equipment Reconstitution will be accomplished as follows.

a. Damaged Aircraft and Equipment. A damaged aircraft or ground equipment item will remain damaged until the appropriate personnel, equipment, and simulated parts have been assembled and the maintenance allocation chart (MAC). Damage caused by enemy action is based on either the damage card for ground equipment or the subjective evaluation by the aviation OC/T for aircraft. While in this “damaged” status, real world maintenance can be performed to include test flights. The requirement for simulating repairs can only be waived by the Senior Aviation Trainer (E07).

b. Damaged-Not Repairable Aircraft and Equipment. A damaged not repairable aircraft or ground equipment item will remain damaged not repairable after change of mission for the brigade/regiment IAW Chapter 7-2, Reconstitution. Any damaged aircraft or equipment cannot be reconstituted unless the RTU has shown they can effectively recover the aircraft or equipment.

7. Downed Aircraft must be recovered for it to go through reconstitution. One of the following methods may recover the aircraft:

a. Self-Recovery. For damaged-repairable the aircraft can self-recover after the appropriate simulated maintenance actions are completed. This requires the unit to conduct a proper battle damage assessment and have the required parts, personnel, and tools available to execute the required maintenance repairs.

b. Air Extraction. For damaged-repairable or damaged-not repairable, the unit may decide to recover the aircraft using an UMARK. For this option, the Downed Aircraft Recovery Team (DART) will rig and simulate hookup and sling operations. The recovery aircraft must be on scene or coordinated for.

c. Ground Recovery. The appropriate ground vehicle must be used when executing this means of recovery. The DART must simulate the rigging and loading of the damaged aircraft. The recovery vehicle will then return the simulated aircraft back to the FOB or TAA.

d. Destroy Aircraft. The unit must gain the appropriate approval authority to destroy the aircraft in place.

#### **9-5 Casualty Operations.**

All casualties will be assessed IAW Chapter 8-3.

a. If shot down, the aircrew may be directed to escape or evade capture by Eagle 07. Crewmembers need to maintain positive control of sensitive items and equipment. An OC/T must be present, before the crew attempts to start evading.

b. Aircrews may be extracted by sister aircraft. Aircrew injuries are the first priority in considering demonstrated means of extraction. The OC/T must observe the downed crew attached to the recovery aircraft before giving credit. At no time will an aircraft take off with a crewmember secured to the outside of an aircraft.

c. A Personnel Recovery (PR) team may recover the aircrew members by any vehicle (aircraft or ground vehicle). Isolated personnel/crew members will be evacuated as directed by the on-scene OC/T. If the OC/T directs the crew members to remain with the aircraft and not be evacuated, only the crewmember's casualty cards will be evacuated. The recovery vehicle must account for the weight and space required to transport the injured crewmembers.

d. Personnel Reconstitution. Personnel assessed as casualties will comply with the conditions stated on their individual TESS casualty card IAW with Chapter 7 and 8. The Senior Aviation Trainer may authorize a second life IAW with Chapter 3-1, 4, a.

#### **9-6 Aviation CBRN**

1. General. All helicopters, crews, and passengers are susceptible to the effects of chemical agents. Units should employ appropriate MOPP levels, place M9 paper on external portions of the aircraft, conduct CBRN surveys, use the M256 chemical detection kit, and observe the indicators for chemical use by the OPFOR.

2. Contamination. Should a helicopter enter a contaminated area, an aviation OC/T will assess casualties based on exposure duration, concentration, characteristics of the agent, and personnel MOPP levels observed.

3. Simulation. All aircrews and passengers will wear the appropriate equipment IAW directed MOPP level in order to be assessed as "protected" against a particular chemical agent. Aircrew members performing flight duties are not required to wear either the JSLIST or simulated suit when performing flight duties. However, for safety reasons, if the unit decides to don the MOPP gear, the aircraft pilot-in-command (PC) will remain unmasked. Upon aircraft shutdown, the aircraft crew will have 8-minutes to complete the appropriate MOPP level to be considered "protected." Those aircrew members, who are in an off-duty status for fighter management, even if they are sleeping, are still required to don their protective mask.

4. Non-Flying. When on the ground (not flying), the rotational unit personnel will adhere to the appropriate MOPP level. If the aircrew member is awake and up, but still conducting fighter management, he or she will then go to the appropriate MOPP level.

#### **9-7 Personnel Recovery Training**

1. The decision to execute PR Training during rotation resides with both the Commander of Operations Group (COG) and the Commanding General (CG) of the NTC whether it is a pre-planned scenario or a target of opportunity isolated/missing/detained/captured (IMDC) event to trigger the activation of the RTU's PR CONOP.

2. The Aviation OC/Ts (Eagle Team) are the proponent for PR Training for Operations Group and will ensure the following:

a. Team PR OC/Ts are experienced and trained in: Joint & Army PR Operations, High Risk of Isolation (HRI); Survival, Resistance, Evasion & Escape (SERE) Tactics, Techniques & Procedures (TTPs) from the Division to individual Soldier Levels.

b. Compliance with the Division OPORD with respect to Annex E (OO), Appendix 2 (Personnel Recovery) for all NTC Rotations.

3. RTU must complete the following rehearsals prior to execution:

a. Individual PR STX

- b. Company PR STX
- c. BCT PR Rehearsal STX
- d. Immediate BCT PR Operations
- e. Deliberate BCT PR Operations (OOS)

3. The 52nd ID TOC serves as the tasking authority for all PR Operations to be conducted during rotations. Additionally, when a PR Event is reported by the RTU, the 52nd ID TOC will simulate the activation of the Division's Personnel Recovery Coordination Center (PRCC), led by the Division G3 Air (Eagle 7T). This PRCC is responsible for the coordination of assets within the Division's Area of Operations, to include, but not limited to Division PR Assets (e.g. Pathfinder unit, Aerial Reaction Force (ARF), Focused Targeting Force (FTF), etc.) as well as assets available through the Joint Personnel Recovery Coordination Center. OC/Ts.

## **9-8 UAS Employment**

1. Launch and Recovery Operations. All A2C2 and ATC positive and procedural requirements must be in place prior to launch. The OPFOR LNO that is covering down on the UAS team is responsible for player-positioning the UAS crew and air vehicle while in flight. At a minimum, the OPFOR LNO will call up launch and recovery times and UAS location every 500 meters or 10 minutes.

- a. Prepared Shadow UAS launch/recovery sites: Nelson Lake, FOB Miami, Spider DZ, Painted Rocks, Renegade, and Bicycle Lake are all regularly maintained and certified sites for Shadow UAS launch/recovery.
- b. Hasty Shadow UAS launch/recovery sites: Units are authorized and encouraged to construct Hasty Shadow launch/recovery sites on any ASR; MSRs will not be used for UAS recovery. Units must conduct grading, compaction, etc. as necessary to bring the ASR to specifications for recovery IAW the Shadow UAS technical manual. Coordination with ITAM / Environmental will be conducted prior to site improvement. Units must also account for the use of a hasty launch/recovery site in their flight mission risk assessments.
- c. All A2C2 and ATC positive and procedural requirements must be in place prior to launch. The OPFOR LNO that is covering down on the UAS team is responsible for player-positioning the UAS crew and air vehicle while in flight. At a minimum, the OPFOR LNO will call up launch and recovery times and UAS location every 500 meters or 10 minutes.

2. UAS "Lives". A UAS is considered "killed" if the system is assessed to ADA fire or if the system lands / crashes in an area where it cannot be competitively recovered. For example, if a Pointer UAS is on its return leg and crashes 1km from the UAS team and the team is able to recover the UAS competitively (without being killed by BLUEFOR) then the UAS is still alive and may be launched again with no "life" lost. However, if the pointer crashes 5 km from the UAS team behind BLUEFOR lines and has to be administratively recovered (OPFOR LNO, OC/T recovery, etc.) it is assessed as a kill and the OPFOR must use a new life to launch the UAS again.

### **3. UAS Replacements.**

- a. When any UAS is assessed as destroyed by ADA or other means, the unit may opt to either launch an immediate follow-on mission with a new air vehicle, or cease UAS operations until they've addressed the ADA threat. Considering multiple factors, MICO and UAS OC/Ts will adjudicate the "killed" UAS in one of two ways on a case-by-case basis:

(1.) If there is a relatively high amount of fuel remaining in the current UAV, the unit has an available UAV that is FMC and the training unit opts to launch an immediate follow-on mission, the "killed" UAS will be moved into a "penalty box" outside of the reconnaissance area with it's payload caged (pilots window). The penalty box time will be equivalent to the amount of time it takes to conduct preflight procedures and launch a new aircraft. Once the mission is complete and the aircraft is recovered, that specific aircraft will be out of play

until reconstitution paperwork is complete and 12 hours has elapsed from the time of initial kill.

(2.) If there is a relatively low amount of fuel remaining for the current flight mission, and/or the training unit opts to not launch a follow-on mission, the aircraft will be required to land as soon as safely possible. Once the mission is complete and the aircraft is recovered, that specific aircraft will be out of play until reconstitution paperwork is complete and 12 hours has elapsed from the time of initial kill.

b. Other UAS systems. Replacement time will be based on the average time to prepare, launch, and fly another AV to the target area (not less than 30 minutes). Systems for which sufficient data does not exist to determine this “average” time will return to base, land, and re-launch IAW all established procedures for that system. RAVENs are not subject to this restriction. Once the RAVEN that was shot down has landed, the unit may launch the replacement RAVEN.

4. UAS Personnel. UAS operators are subject to Fighter Management, as per AR 95-23. Unit Commanders will establish specific requirements for their personnel. Safety of personnel and equipment (both the UAS unit’s and those on the ground under or near the UAS) is the paramount consideration. UAS personnel who become casualties will be assessed IAW the EXOP. See paragraph (9) (d) for “in-flight” personnel assessment procedures.

5. Ground Equipment. Due to nature of the electronic emissions from UAS control stations and antennas they may operate without TESS.

a. Control Stations. Vehicles will be assessed IAW the appropriate sections of the EXOP. A control shelter will remain FMC if only the prime mover is damaged, but may not be moved until repairs are affected. Due to the nature of the electronics on board, a control station is considered “destroyed” when the assessment determines an engagement involved any part of the control shelter. Replacements for “Destroyed” equipment must be requisitioned. Replacements will be put in service 12 hours IAW Ch. 7.2.

b. Antennas engaged small arms are assessed NMC; any other DF are assessed “destroyed”. NMC antennas may be “repaired” in 1 hour, if qualified maintenance personnel and parts are available. Replacements for “destroyed” antennas must be requisitioned. Replacements will be put in service 12 hours after a proper request.

c. If duplicate or replacement equipment exists within the Brigade AO, the commander may relocate that equipment. Actual or surrogate equipment must be moved on the battlefield to attain FMC status.

#### **9-9 Air Assault and Air Movement Operations**

1. BLUEFOR and OPFOR units conduct air assault operations. OPFOR air assaults are referred to as Task Force Angel; authorization and mission specific instructions are found in the CBI.

2. OC/T Escort Requirements. In UH and CH aircraft, one seat must be reserved for an Aviation OC/T. The seat must provide access to an ICS cord, a headset, and the TESS controller boxes, with access to all radios. Additionally, the maneuver task force will manifest its OC/Ts. The maneuver task force OC/Ts manifested will include one per rifle platoon, one per specialty platoon, one per company headquarters, and one for the task force command group.

3. Helicopters. OPFOR air assaults are flown by LUH-72 VISMODOs to provide visual recognition of an OPFOR air assault. HIND Escort Requirements. HIND VISMODOs must provide a signature and security for OPFOR air assaults. Until the UH-60 aircraft are modified with a distinct signature, HIND VISMODO aircraft must remain within 1500 meters of the troop carrying aircraft to facilitate hostile identification. There are no UH-1/UH-60 missions authorized without HIND escort aircraft. If an OPFOR escort aircraft is assessed as destroyed, either on ingress, in the vicinity of the LZ, or egress, it will remain with that lift to present the Air Raid Detachment (ARD) signature but cannot engage BLUEFOR units.

4. **Personnel.** Dismounted infantry squads will have an operational MIK. BLUEFOR DCI checks must be completed prior to departing the PZ through the respective TAFs. One seat per chalk will be allocated for the ground maneuver unit OC/T. Once the dismounted elements depart the LZ, the OC/T team will have responsibility for controlling and making assessments on that dismounted element, with the assistance of the appropriate Palehorse OC/Ts. Exceptions to instrumentation requirements must be approved by DTOC. In approved cases, player positioning will substitute for the instrumentation.

5. **Static Load Training.** All Soldiers conducting air assault operations or air movement operations will conduct static load training prior to mission execution. Static load training will consist of aircraft entry and exit procedures, location and use of emergency equipment, and emergency egress procedures in case of a forced landing. The ground maneuver unit OC/T will verify through the rotational unit chain of command that all Soldiers have completed this training prior to conducting the air assault/air movement operation. Each Soldier is required to receive the static load training on each aircraft type only once per rotation.

6. **Division Early Warning Net.** DTOC provides both BLUEFOR and OPFOR tracking information on respective Division Early Warning (DEW) nets. Additional instructions are found in Chapter 16-2-3.

7. **Air assault lifts are competitive.** Lifts may go to separate LZs provided that the LZ has been coordinated through the DTOC 24 hrs prior to ensure OC/T coverage at the various LZs. OPFOR may designate 1 Primary and up to 3 Alternate LZs. OC/Ts will cover on all LZs to ensure adequate coverage. OPFOR may change from the Primary to any of the Alternate LZs enroute.

8. **Out of Sector Air Assault Operations.** In general, the rotational unit will receive spot reports of MTIs, penetration, and engagements by the adjacent unit and of the HIND squadron turning into the rotational unit sector.

9. **Reconstitution.** If a troop carrying aircraft is assessed as a CAT kill on ingress or in the vicinity of the LZ, it will remain with that lift but will not be authorized to offload its troops. Once the lift returns to the PZ the aircraft will be reconstituted and used again for the remainder of the air assault mission due to restricted aircraft availability, however, the troops and equipment cannot be reinserted on a follow on lift. The CBI will state how many "lives" SOKOL escort aircraft have for that day. If SOKOL uses all of its escort lives before completing the air assault, no more lifts will be authorized to depart the PZ.

#### **9-10 Missions in Support of Special Operations**

1. **Governing Regulations.** IAW AR 95-1, Aviation Flight Regulations, the RTU may conduct airborne, rappel, and FRIES/SPIES operations from rotary wing platforms without troop seats installed. OC/Ts will ensure "seats out" is specifically addressed in the mission deliberate risk assessment worksheet and identified risk mitigation safety procedures are put in place. All night FRIES operations will be regarded as medium risk, at a minimum, as per FM 3-05.210, Special Forces Air Operations.

2. **Seats Out.** A request for Seats Out Waiver and completed deliberate risk assessment worksheet will be turned in prior to TD 01 for NTC CG approval. This must be complete before any rotary wing operations may take place where the standard seats and safety belts are not utilized. The approving authority for the seats out waiver is the first MG/O8 in the chain of command (CG, USASFC; CG, MARSOC; CDR, NAVSPECWAR; and CDR, USASOC for Rangers). Seats Out waivers must be approved and returned to the RTU prior to arrival at the NTC. No exceptions will be made. NTC CG retains authority to deny seats out execution.

3. **FRIES.** Rotational units must complete the prerequisite training prior to their arrival at the NTC. The RTU will provide a memorandum to NTC with the names of all personnel who have completed FRIES training prior to the SOF RTU's arrival at the NTC. During infiltration, SOF OC/Ts will place themselves in the stick. Either the OC/T or Exercise Support Group (ESG) personnel will conduct a safety inspection of the proposed FRIES infiltration location prior to execution.

#### **9-11 Airborne Operations**

1. **Drop Zone Responsibilities.** The responsibility of surveying and running drop zones for RTU airborne operations prior to and during rotation falls on the RTU. All static line airborne operations and drop zones will be run IAW USASOC Regulation 350-2, *Training Airborne Operations*; IAW FM 3-05.210, *Special Forces Air Operations*; FM 3-21.220, *Static Line Parachuting Techniques and Training*; and the Fort Irwin Range Regulation. All HAHO and HALO airborne operations will be run IAW FM 3-05.211, *Special Forces Military Free-fall Operations*, and the Fort Irwin Range Regulation. A copy of the Airborne OPORD, current risk assessment, and current DZ Survey must be submitted to the 52<sup>nd</sup> ID TOC NLT 48 hours prior to TOT for COG approval for any airborne operation.

2. RTU is responsible for setting up the DZ during all phases of their deployment. If the RTU wishes to jump into the NTC from home station, they will ensure that the DZ party is a part of their Quartering Party. Prior to TD 1, the RTU will open and close the DZ through Fort Irwin Range Control. During STX and FOF the SOF RTU will have a designated DZ Party including a malfunction NCO and dedicated medical support as a part of their support package that will set up the drop zone.

3. RTU is authorized to survey DZs for short term use to support HALO and HAHO operations. These DZs must be surveyed and approved 48 hrs prior to TOT.

4. Conduct safety inspections of all HLZ's and DZ's prior to their utilization by the SOF RTU.

#### **9-12 Fixed Wing Aircraft**

1. **Green Flag-West Integration.** Green Flag-West is the preeminent tactical level exercise for preparing close air support (CAS) and precision guided munitions (PGM) capable units, Army supporting ASOS units, and other supporting units. GFW trains aircrew, in support of surface forces in a realistic combat environment in conjunction with an Army NTC rotation and provides essential training to all participants in the joint employment of airpower. The focus of GFW is the tactical execution of CAS missions.

2. Rules for Requesting and Scheduling CAS are located in 52ID TACSOP.

3. **Air Force Execution of CAS.** Aircraft normally deploy from Nellis AFB. Green Flag-West determines the optimum timing and tempo of aircraft supporting force on force (FoF) based on the number of aircraft available, training requirements, LD time, and doctrinal application of units may request CAS on-station times to be adjusted to support their battle plans. This coordination must take place NLT 36 hours prior to the ATO execution.

4. **Control of Aircraft.** The unit (TACP) or a Forward Air Controlling (FAC) aircraft controls aircraft.

a. The aircraft enter the NTC airspace and remain under the control of the TACP or FAC aircraft in accordance to published Green Flag-West SPINS. If the aircraft expend all of their ordnance before their station time is complete, the Ravens may regenerate aircraft ordnance after coordination with the 549 CTS Green Flag-West operations supervisor.

6. **Aircraft Non-Utilization.** If there are aircraft available but the rotational unit has no use for them, the Division may retain those sorties. Raven 07 will recommend Division-level targets or extended scenario training to the extent to not impact the full spectrum scenario. Attacks on Division-level targets will not result OPFOR attrition.

7. **Extended Scenario.**

a. **Additional Training (non-scenario).** In addition to the CAS mission, the Air Force conducts other training which is not included in the rotational scenario. This training includes Air Interdiction (AI), Kill Box, and live ordnance drops. Live ordnance drops are generally conducted at Leach Lake Training Range (LLTR).

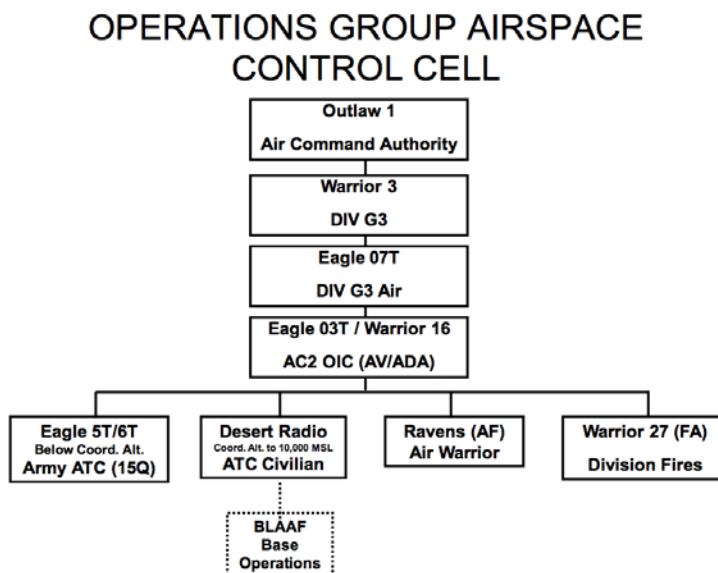
b. Integration into Full Spectrum Scenario. These aircraft may or may not be integrated into the full spectrum scenario. The guidance is to incorporate as much CAS as possible, without unduly affecting the direct fire engagement. W3 and Raven 07 coordinate for a recommendation to Outlaw 01 on when to terminate CAS effects across the battle space.

### 9-13 Airspace Control

1. General. The purpose of 52ID Airspace Control is to help facilitate the most efficient use of the NTC and RTU airspace through proper coordination and timely responses to airspace coordination measure requests (ACMRs), planned and immediate, fire requests, and CAS cleared below the coordinating altitude. Safe airspace use is the primary mission.

2. Agencies. There are two primary agencies for managing Airspace Control at the National Training Center:

a. Operations Group Airspace Control Cell. This cell is situated in Building 990 (DTC floor). Eagle 03T, the Operations Group Airspace Control OIC, and Warrior 16 are the primary facilitators of information and coordination within the cell and among the rest of the DTC. The Airspace Control cell consists of two Air Traffic Control NCOs (15Qs), Raven Team representatives, Warrior 27, and Air Traffic Services (ATS). See Organizational Chart:



b. Desert Radio. Desert Radio, located at Bicycle Lake Army Airfield (BLAAF), is the flight following agency for all aircraft operating in R2502N, R2502E, and R2502A. Eagle OC/Ts are required to notify Desert Radio upon departure of Bike Lake and completion of mission. The OC/T will notify Eagle TAFF (Eagle Tango) upon departure.

2. Rotational units must receive prior approval from the 52ID/ X Corps TOC/TAC to use any airspace or conduct ingress / egress outside of its sector/zone.

3. ACO and Airspace Control graphics will be posted every day of the rotation on the Eagle Team AKO website. Airspace Control ACO graphics shall not be given to the RTU without E7, E3, or E7T specific concurrence.

4. RTU graphics shall be pushed out via TAIS and posted on the Warrior SIPR Portal under the “G3 Air” tab.



5. **Airspace Coordination Area (ACA).** Formal and informal ACAs may be used during force on force and live fire. All ACAs will be activated through the 52ID Airspace Control. The following restrictions apply.

- a. No A/C within 100 meters of personnel or equipment while conducting interdiction operations.
- b. Aircraft shall not fly within 500m of active UAS ROZs without coordination and provide a 500ft vertical buffer when overflying UAS ROZs.
- c. Aircraft may enter active ROZs if they have positive communication and coordination with the ROZ's ACA. RW aircraft and UAS shall maintain 500m lateral separation within the ROZ. For other types of ROZs (fire, PR, etc.), the positive communication and deconfliction requirement with the ACA remain.
- d. In Artillery ROZs aircraft must remain a minimum of 100m from the gun target line and the indirect fire gun.

6. **Coordinating Altitude (CA) and Coordinating Level (CL).** The CA will be published in Appendix 10 to Annex C of the 52ID OPPORD for each rotation. All trainers and training units must review the exercise ACO to verify the CA for each rotation; hard deck is published RSOI 1. The CL for NTC Rotations is 2000 feet AGL. To ensure safe operations, fixed wing aircraft will remain above the Coordinating Level (CL) and in contact with Sundance. Rotary wing aircraft will remain a minimum of 500' below the (CL) and in contact with DESRAD. Transitions through the CL or CA require prior coordination with both DESRAD and Sundance.

7. **All rotary-wing airframes are required to fly with a minimum of a paper hard copy of the current ACO Graphics.** Those rotary-wing airframes with digital cockpits will have a digital copy on the cockpit display. IAW the NTC APG frequencies, aircrews will contact Desert for flight following, notice of other aircraft in route of flight, and current active ROZ status: Prior to crossing PL Dragon crews are required to contact ZULU TAC for clearance to enter live fire area. OC/Ts also have the ability to contact Zulu TAC for clearance via their internal communications system and Rotary Wing aircraft will maintain positive communications with Desert Radio for flight following while north of PL Dragon.

8. Aircraft will not under fly indirect fire gun-target lines except during force on force operations, or during MLRS shoots with 12 CTS/CC approval.

9. **Airspace Usage.** The RTU will conduct air operations IAW the following guidelines: Request airspace control measures (ACM) through DIV Airspace Control NLT 1200 the day prior to mission execution (for example UAS/fires ROZs, ROZ ISO air assault mission, etc.). BPT receive and distribute current ACO published with approved ACMRs by DIV Airspace Control via Warrior Portal NLT 1800L the day prior to execution. The unit will notify Desert Radio immediately of all accidents or incidents to include precautionary landings. The unit must call Desert Radio upon completion of operations and to deactivate the ROZ. If there is no activity scheduled in the ROZ for more than two hours, the unit must call Desert Radio and deactivate the ROZ. USAF weather can be contacted per the NTC APG to obtain the latest weather information.

10. Below the coordinating altitude all aircraft will flight follow with Desert Radio and be controlled by the units' ALO. Prior to entering airspace below coordinating altitude, the BAE must notify Airspace Control of the maneuver area via Global Area Reference System (GARS).

a. Coordination altitudes for the four major airspace users during a rotation are: UAS (Surface to 20,000 MSL), Rotary Wing (500' below the coordinating altitude / coordination level), Fixed Wing (Above the coordinating altitude / coordination level), Fires (Surface to Max Ord).

b. **Fixed Wing.** All Air Force aircraft must submit a PPR either as part of Green Flag Operations or as a separate flight request. PPRs are processed by Bicycle Lake Ops. The Raven Team/Air Force element will initially contact Desert Radio to request the airspace altitude in R2502 East to be raised from coordinating altitude to desired flight level at least 15 minutes prior to usage.

c. Fires. A 1km ROZ will be created at gun location and a 1km box along the round trajectory to realistically inhibit aircraft movement during fire missions. Warrior 27 is the FSCoord to 52ID and for airspace deconfliction and approval.

**11. Aircraft deconfliction procedures in the Airspace Control cell:**

a. Outlaw 01 will set the priority of airspace users NLT RSOI 4. Daily operations and approvals will be controlled by Eagle 3T and W16. During rotations, Warrior 3 retains the authority to override ACO priorities to facilitate maximum training for the RTU.

b. Deconfliction of multiple users in the BCT AO will be completed at the Brigade level and reported up to 52ID Airspace Control. As such, the RTU must maintain communication with all users either through their subordinate units or directly. The BAE will routinely be required to report status of all airspace users and locations to Airspace Control.

**12. UAS Airspace is controlled in conjunction with the Chief of Intelligence (W2) in the DTOC as the central point of contact for all Live, constructive and virtual UAS operations/issues at FT Irwin.**

a. UAS ACMRs shall be submitted by 1200L the day prior to execution to the AC Cell, whom is the approving authority for all airspace control measures for live, constructive, and virtual UAS operations. At a minimum the brigade S3 Air is responsible for submitting the following information: 1) POC for the requesting unit, 2) Requesting unit call sign and frequency, 3) Control measure dimensions with grid, 4) DTG for ACMR, and 5) Task and Purpose. All UAS operations will be published in the Air Tasking Order (ATO) and Airspace Coordination Order (ACO) and comply with the NTC Aviation Procedure Guide (APG) and all Special Instructions (SPINS). The ACO is published at 2000 hours daily.

b. Any UAS request submitted after 1200L will be considered an immediate request.

c. All Aircraft Operators (AOs) must receive the NTC G3 Safety briefing and the AC2Weather briefing prior to conducting any tactical operations.

d. Operating altitudes for all Live, constructive and virtual UAS will be directed by division in orders to the rotational unit or directed by the division ACA on a case by case basis.

e. Asset Baselines. The unit must allocate its UAS resources to reflect what is available and fully mission capable.

f. UASs operate without TESS. Engagements are manually assessed by OC/Ts on the ground based upon parameters developed by the ADA Center. (See section 3.)

g. Spectrum Management. The rotational unit must coordinate for the use of approved frequencies prior to any UAS flight operations at the NTC IAW the 120 day letter.

h. Requested frequencies must be coordinated and emitters tested prior to flight operations. UAS will not operate until this is complete.

i. If the UAS asset is controlled and maintained above the BDE level, the Division G2 is the controlling authority for all UAS operations.

j. While in Direct Support of the Brigade, UAS information collection is restricted to within the rotational unit BCT boundary. Requests to collect outside of approved ACM or/and BCT boundary by the BCT must be processed through the Division G2/AC2 for approval. Dynamic re-tasking is possible provided the re-tasking does not cause the UAS to depart the BCT AO without the proper approval as stated above.

k. Unit must notify 52ID Airspace Control 5 minutes prior to UAS launch and request launch code. Airspace Control will confirm the launch code with the OC/T on site. Once confirmed, Airspace Control will notify DESRAD that the ROZ is active and will notify BAE on ROZ status. The unit must maintain positive

communications with Desert Radio and provide position reports to Desert Radio every 15 minutes providing a 6-digit grid, or at the discretion of Desert Radio during UAS operations. If communication between the UAS operator and Desert Radio is lost, the unit shall immediately report to the OC/T lost comms status. The OC/T will report to Airspace Control who will coordinate landing site of UAS. Airspace Control will relay to OC/T the approved landing area and continue to provide DESRAD with updates until UAS is recovered. The UAS will discontinue flight activities until communications are reestablished. UAS operators shall yield right-of-way to all other air vehicles regardless of type and immediately land, if any other air vehicle's safety is in jeopardy.

I. UAS Operators will receive a briefing from Desert Radio at Building 6212, Bike Lake Army Airfield, NLT RSOI 4 and sign a Letter of Agreement prior to UAS usage. IAW 95-23, UAS operators are required to obtain a weather briefing for their mission.

m. Small UAS (Raven, Silverfox) and Tactical UAS (Shadow, Predator). Units will conduct UAS operations IAW the following guidelines:

- (1.) TUAS Operators will receive a briefing from DIV Airspace Control on RSOI 1 at the RUBA briefing room T9011.
- (2.) Notify DIV Airspace Control 30-minutes prior to UAS launch and request activation of the applicable ACMs along with the applicable launch code.
- (3.) Contact Desert Radio 30-minutes prior to desired launch time to establish communications check
- (4.) Prior to launch relay the approval launch code specifically assigned to their missions. Airspace Control will confirm with the OC/T on site at operating ROZ and the parameters of their mission.
- (5.) DESRAD will provide the UAS operators an updated briefing of weather and any applicable restrictions.

#### 9-14 Close Air Support (CAS)

1. Mission. The United States Air Force executes a simultaneous and collaborative exercise during NTC rotations, GREEN FLAG-West (GFW), to train Combat Weather, Tactical Air Control Parties (TACP), fixed-wing aircrew members, and BCT staffs. In keeping with these purposes, the focus of CAS training is on execution IAW Joint Publication 3-09.3, integration of ASOS personnel with their supported units, and the utilization of available GFW assets to meet the ground commander's operational and tactical intent. The rotational unit will receive credit for the use of CAS in its battle space only when its execution is a direct result of the brigade combat team's targeting and decision-making process. CAS sorties will only result in battlefield attrition when the rotational unit employs aircraft in line with the commander's current CAS focus. CAS striking targets of opportunity outside the direction and control of the rotational unit will not receive credit for their effects. CAS sorties not utilized by the RTU will be retained by the division and used against division targets.

2. Employment. Rotational units are authorized to employ CAS in accordance with Joint Pub 3-09.03, AFI 11-214 (with all ACC supplements), COMACC EXPLAN 323, participating aircraft MCM series TTPs, AR 385-63, and NTC EXOP. Multiple sets of Close Air Support (CAS) aircraft may simultaneously operate in the maneuver box. All aircraft must contact Sundance for clearance prior to entering or departing NTC airspace (R2502 N/E NTC Range-Complex).

3. Terminal Control. Aircraft will operate under the direction of a qualified Joint Terminal Attack Controller (JTAC), Forward Air Controller-Airborne (FAC-A), or Joint Air Attack Team (JAAT) Air Mission Commander. Only qualified joint/coalition controllers, however, may conduct terminal control. Type 1, 2, and 3 control may be used during force on force operations. A qualified JTAC or FAC-A must use Type 1 Control procedures for all live CAS engagements unless requirement for Type 1 is waived by Raven Team chain of command and replaced with either Type 2 or Type 3 (see Live Fire Training Chapter for Live Fire Restrictions). Aircraft must be cleared to depart the IP by the final control authority (see table 4-8). A qualified JTAC or FAC-A must provide final control for targets within 3 km of the FLOT. Aircraft must receive a "CLEARED HOT" call from the final control authority on each pass prior to releasing live

ordnance. CAS targets within 5,000 meters (3 nautical TESS) of any personnel must receive a visual mark (IAW AFI 11-214, A4.1.3.4.1).

**4. Visual marks at NTC are limited to the following (IAW AFI 11-214, A4.1.3.4.1):**

- a. 2.75 inch WP/HE/SP/TP or JSLIST rockets. TP rockets require multiple release.**
- b. 20 mm, 25mm, 30mm guns TP/HEI**
- c. 105mm, 155mm HE/WP/ILA/SMK**
- d. 120mm TPCSDS, HEAT-TP-T**
- e. FAC-A delivered BDU-33/MK-76**
- f. IR Pointers or Laser Target Designators (LSS/LST)**
- g. VDL Capture**
- h. Smoke grenades delivered from rotary wing (hand tossed)**
- i. .50 Cal**
- j. 81mm mortars HE/WP/ILA/SMK**
- k. 60mm mortars HE/WP/ILA/SMK**
- l. 40mm grenades delivered by MK-19**
- m. AT4 84mm**

**5. GP Bombs and inert ordnance are not an acceptable mark. All ABORT calls are given in the clear (no authentication) by anyone observing an unsafe act. The JTAC/FAC-A will pass a CAS 9-line brief to the aircrew prior to the aircraft departing the IP/CP for each CAS attack. Terminal Attack Controllers use the following considerations in developing their 9-line briefing:**

- a. FLOT and other friendlies (COLTS, Scouts, TACs etc.)**
- b. Fire Support Coordination Measures**
- c. Artillery and mortar locations / GTLs**
- d. Airspace conflicts/ROZs**

**6. Self-Illumination: Aircraft released LUU and Rocket Flares are authorized. Range-to-fuse function must occur at least 500 meters away from friendly units' positions. Range-to-impact must occur at least 800 meters from friendly units' positions.**

**7. Restrictions: The following restrictions apply to both force on force and live fire operations: Air-to-air equipped CAS fighter platforms may engage rotary wing in R2502N/E while in scenario if able to do so while maintaining assigned airspace blocks. Multi-role CAS platforms will not utilize infrared or laser target designation to illuminate or track manned aircraft at any time. Aircraft will operate with available IFF systems activated at all times. The FLOT and individual positions forward of the FLOT must be marked to allow for quick aerial identification of the friendly positions during night-live CAS operations only. FAC-As and attack aircraft must confirm location of friendly forces via a "visual friendlies" call. Fixed-wing aircraft will fly appropriate tactics for the ADA threat level. VFR weather criteria is 1500'/3nm for force on force and 1500'/3nm or 500 feet above minimum release altitude (whichever is higher) for live weapons release. CAS**

with live ordnance may over-fly, but not “hold” over friendly troops. Cluster munitions are not authorized in LLTR or R2502 N/E. Coordinate dependent weapons (JDAMs) are authorized, however, if the appropriate weapon Safety Danger Zone (SDZ) schematic is on file with NTC Range Control. AGM-65 is authorized on Leach Lake targets 3, 4 and 5 per safe-range employment restrictions. Raven OC/Ts will direct aircraft that are unable to expend ordnance in live fire to an alternative target at Leach Lake Tactics Range that is at least 5000 meters (3 nm) from any personnel.

**8. Urban CAS.** CAS may conduct urban operations throughout the 2502 N/E airspace. Operations conducted over the Fort Irwin cantonment area are restricted to 10,000 feet MSL. Aircraft will be dry and have a pinned gun. Simulated strafe attacks and expendables (chaff/flares) are not authorized over the Fort Irwin cantonment area at any altitude.

**9. Airspace Management.** Rotational units must receive prior approval from the 52ID/ X Corps TOC/TAC to use any airspace or conduct ingress / egress outside of its sector/zone.

**a. Coordinating Altitude.** Coordinating Altitude (CA). 2,000K AGL is the standard CA for NTC exercises, but may change from rotation to rotation. All trainers and training units must review the exercise ACO to verify the CA for each rotation. To ensure safe operations, fixed wing aircraft will remain above the CA and in contact with Sundance. Rotary wing aircraft will remain a minimum of 500' below the CA and in contact with DESRAD. Transitions through the CA require prior coordination with both DESRAD and Sundance.

**b. Airspace Coordination Area (ACA).** Formal and informal ACAs may be used during force on force and live fire. All ACAs will be activated through the 52ID FSE. Aircraft will not under fly indirect fire gun-target lines except during force on force operations, or during MLRS shoots with 12 CTS/CC approval.

**c. Lateral Separation:** Indirect fires and CAS may attack different targets simultaneously if the indirect fire GTL and CAS target are coordinated by an informal/formal ACA. During live fire, CAS must also adhere to the live fire CAS minimum altitudes in paragraph 4-9.

**d. Time Separation:** Time Separation: When below 5000' AGL, CAS, artillery, and mortars may attack the same target provided a minimum of 30 seconds separation between the last round on the ground and the first aircraft delivered ordnance on the target. Aircraft will not violate active GTLs or live fire CAS minimum altitudes in paragraph 4-9.

**e. Altitude Separation:** CAS, artillery, and mortars may attack the same target simultaneously using Maximum Ordnance or ORD 1 procedures while adhering to live fire CAS minimum altitudes in paragraph 4-9. Units may use the Maximum Ordnance procedure provided aircraft remain at least 1,000 feet above the direct and indirect fire trajectories and their effects. Units will not establish a single Maximum Ordinate over their sector/zone for an entire battle. ORD 1 procedures are authorized during live fire operations if the unit demonstrates proficiency during force on force operations and receives approval from the Commander, Operations Group. When using ORD 1 procedures aircraft will remain at least 25 degrees laterally separated from the artillery GTLs until crossing the target area.

Table 9-13a LIVE CAS Final Control/ Target Marking Requirements		
CAS TGT	TAC (Terminal Attack Controller)	TGT MARK REQD
Personnel less than 3 KM	JTAC	YES
Personnel 3 KM – 5.0 KM	JTAC/FAC-A	YES
Personnel > 5.0 KM	JTAC/FAC-A	NO

**10. CAS Minimum Safe Distances**

**Restrictions.** The minimum safe distances for bombing and strafing at the NTC are:

<b>Table 9-13b CAS Minimum Safe Distances (IAW JFIRE/Dec 2007)</b>	
<b>Live Ordnance</b>	<b>MSD – Restriction</b>
<b>MK –82 (500 lbs)</b>	<b>1,200 meters</b>
<b>MK –83 (1000 lbs)</b>	<b>1,000 meters</b>
<b>MK – 84 (2,000 lbs)</b>	<b>1,800 meters</b>
<b>STRAFING - Final attack heading (FAH) specified in the 9-line must be oriented parallel to the FLOT MSDs for all ordnance not listed above are IAW JFIRE/Dec 2007.</b>	

## **Chapter 10**

### **Non-Lethal Operations**

- 10-1 Media Environment**
- 10-2 Role Players and Subject Matter Expert Support**
- 10-3 Non-Combatant Evacuation Operations (NEO)**
- 10-4 Dislocated Civilian (DC) Movement**
- 10-5 Foreign Humanitarian Assistance (FHA)**

#### **10-1 Media Environment**

1. **Replicated Media.** NTC replicates local and international media. Contracted role players replicate print and video news teams that circulate the battlefield and produce printed articles and video broadcasts. Media teams will only interact with personnel participating in an NTC rotation (i.e., rotational soldiers wearing TESS equipment). Media role players will not interact with general officers unless specifically authorized by the NTC CDR.

2. **Social Media.** NTC replicates social media through a closed internet network. The RTU will receive stand-alone computers to monitor and interact with the social media environment. Role players also have access to network and create postings based on battlefield conditions.

3. **Media Embedding.** Real world media may also embed with training units. Remember, you and your soldiers are representing the U.S. Army when you speak with them. All comments – even in the chow line – are on the record.

#### **10-2 Role Players and Subject Matter Expert Support**

1. NTC employs contracted role players to replicate the host nation population, non-governmental organizations (NGOs), local government leaders, and key informal leaders.

2. In addition to role players, NTC also employs contracted Subject Matter Experts (SMEs) to replicate US Unified Action Partners (UAPs). This includes US embassy personnel, Department of State, and other US government agencies and departments. All SMEs have worked for the agency or department that they replicate and are available to share their expertise with and provide feedback to the training unit.

3. For the purposes of privacy and security, any images containing role players or SMEs may not be publicly released or posted on any publicly-accessible online forum without the approval of Vulture 46.

#### **10-3 Non-Combatant Evacuation Operations (NEO)**

Non-Combatant Evacuation Operations are executed to replicate extraction of United States citizens and designated Third Country Nationals (TCNs) to train joint operability and coordination at the Brigade level. The U.S. country team will issue guidance and planning documents to the RTU to facilitate NEO planning.

#### **10-4 Dislocated Civilian (DC) Movement**

1. Units will encounter dislocated civilians (DCs) on the battlefield. DCs will consist of contracted role players. DCs will be handled IAW directives from 52ID Annex K to 52ID OPORD and the rotational unit's SOP. U.S. country team SMEs will assist the RTU in planning for DC operations.

2. DC groups of seven or more will move with a MIKPAC. The MIKPAC must be confirmed with DTOC prior to SP to ensure equipment is functioning.

#### **10-05 Foreign Humanitarian Assistance (FHA)**

NGOs (contracted role players) will be active in the training area in accordance with the scenario. The RTU can coordinate with NGOs to conduct FHA operations in support of the mission and unit training objectives. The 52ID OPORD will provide guidance to the RTU on NGO coordination and FHA activities.



## Chapter 11

### Chemical, Biological, Radiological, and Nuclear CBRN

- 11-1 Chemical, Biological, Radiological and Nuclear (CBRN)
- 11-2 CBRN Agent Attacks
- 11-3 Decontamination
- 11-4 CBRN Reconnaissance and Survey
- 11-5 Persistent Agents
- 11-6 Non-Persistent Agents
- 11-7 Biological Agents

#### **CHAPTER 11 - CBRN OPERATIONS:**

##### **11-1 Chemical, Biological, Radiological and Nuclear (CBRN)**

1. CBRN equipment must be present, operational, and employed in a doctrinally correct manner to receive credit. Adjudication for suit failure begins 24 hours after contamination, at a rate of 50% per hour. There are no authorized substitutions of JSLIST items without 52ID approval (example: duct tape for M9 paper or leather boots for GVOs).
2. CS smoke/grenade replicates CBRN attacks; however, the absence of CS smoke/grenade on the battlefield does not always indicate absence of a chemical agent. OC/Ts may give visual signals (hand/arm, marking of M8/M9 paper), audio (M42 alarm), or CBRN casualty cards.
3. CBRN qualified personnel observe, coach and train CBRN personnel, if available.

##### **11-2 Chemical Agent Attacks**

1. Replication. CBRN OC/Ts will assess all CBRN strikes. For indirect chemical fires, air burst/ground burst artillery simulators and CS grenades indicate the incoming CBRN rounds. OPFOR have capability to use improvised chemical or radiological dispersal devices (CDD/RDD). OC/Ts will provide information concerning color changes on chemical detector paper (M8/M9) or M42 alarm, as appropriate.
2. Assessments. OC/Ts will issue a casualty card to simulate personnel in the downwind hazard area. If Soldiers do not take appropriate actions to warn others, additional casualty cards will be issued. Individuals will be allowed to continue their mission once the proper level of protective posture has been attained. Personnel are assessed as follows:
  - a. Units and personnel in the attack area, who do not respond will be assessed as casualties.
  - b. OC/Ts may assess CBRN casualties based on protective equipment failures and shortages while in presence of a chemical agent.
  - c. When CBRN agent poisoning is observed, the individual or his buddy must initiate the correct first aid procedures, to include using a MK-1 trainer and MK-1 nerve agent antidote (NAAK) card, if available. OC/T can credit three simulated MK-1 kits. The OC/T will annotate the NAAK card with date/time group and call sign for each administered MK-1.
3. Initial contingency stocks of JSLIST is based on two per deployed soldier. The second paper set of CBRN gear is issued to the rotational unit by the unit's S-4 prior to departure from the LSA Warrior. The rotational unit must requisition replacement sets of simulated MOPP gear, such as wet weather gear as required. Transportation and distribution of these items will be accomplished by unit SOP. Weight and cube of these items must be considered when they are transported.
4. Simulated CBRN equipment/supplies/medical items will be issued through the BSA IAW

requisitions submitted by the unit. Complete requests are required in accordance with Army logistics requests. Sufficient transportation is required down to the individual soldier to complete reconstitution process. Donning the JSLIST regardless of the time worn equates to a day of wear.

5. The 52ID DTOC will issue a scripted chemical downwind messages (CDM) to appropriate rotational units every six hours throughout the rotation. The source of the CDM comes from the Air Force SWO.

6. Individuals operating around contaminated vehicles must take the following appropriate protective measures: Wear a protective mask if within 1m (arm's length) and MOPP-4 when touching a contaminated vehicle.

### **11-3 Decontamination**

1. Complete decontamination can be achieved through immediate decontamination within 1 hour of becoming contaminated followed by operational decontamination within 6 hours of becoming contaminated.

2. If the unit fails to complete immediate decontamination to standard, the unit must remain in MOPP IV while completing the following:

a. If started within 6 hours, conduct operational decontamination, in conjunction with weathering.

b. Conduct thorough decontamination

<b>Table 11-3a Weathering After Operational Decon</b>	
<b>Daily Mean Surface Air</b>	<b>Duration of Agent</b>
Less than 97 deg F	4 hrs / 3 hrs CARC surface
Greater than 97 deg F	3 hrs / 2 hrs CARC surface

3. Decontamination sites must be properly closed out, marked and reported with an NBC 5 report IAW ATP 3-11.32 and the NBC Warning and Reporting System (NBCWRS).

a. For troop decontamination units will conduct MOPP gear exchange for operational decontamination and Detailed Troop Decontamination (DTD) for thorough decontamination.

b. Decontamination sites will remain contaminated for 24 hours for a persistent agent and 2 hours for a non-persistent agent following site closeout. Contaminated site size will be 500m radius from the center mass grid of the decontamination site. Units entering decontamination site following closeout will become contaminated.

c. Responsibility for decontamination sites will be handed over 52<sup>nd</sup> ID upon site closeout. OC/T will assume control.

d. Decontamination operations may continue during SOBE periods pending COG guidance.

<b>Table 11-3b Vehicle Decontamination Water Consumption Planning Factors</b>	
<b>Thorough</b>	<b>Operational</b>
Wheeled: 164 Gal per vehicle	Wheeled: 150 Gal per vehicle
Armored: 206 Gal per vehicle	Armored: 200 Gal per vehicle

### **11-4 CBRN Reconnaissance and Survey**

Reconnaissance or survey missions are not valid unless the unit performing the mission is accompanied by an OC/T. While conducting the recon/survey, the OC/T will provide the necessary cues (i.e., simulate, meter readings, or symptoms) to the Rotational Unit. Marking of contaminated areas should be IAW the Rotational Unit's SOP and doctrine.

#### **11-5 Persistent Agents**

1. The duration of persistent agent effectiveness is 24 hours.
2. Rotational Unit must identify that the agent is persistent through employing an appropriate detector system or kit (JCAD, M256, NBCRV, etc.). The RTU should not know the agent is persistent until they detect it. The rotational unit must be inspect with detection devices to verify the agent has dissipated.

#### **11-6 Non-Persistent Agents**

1. Duration of non-persistent agent effectiveness is 2 hours.
2. Rotational Unit must identify that the agent is non-persistent through employing an appropriate detector system or kit (JCAD, M256, NBCRV, etc.). The RTU should not know if the agent is non-persistent until detection has been completed.

**11-7 Biological Agents.** Biological agents are available to the COEFOR. Biological agents affect COBs, COEFOR and BLUFOR soldiers and civilians who encounter a biological agent. Personnel infected with biological agents may be contagious (through touch or exchange of bodily fluids). BLUFOR has the capability to detect Biological agents using Hand-held assays or through the employment of a BIDS, JBPDS, RAZOR-EX, or JBAIDS system from a CBRNE unit. The RTU should not know if the agent is biological until detection has been complete.

## **Chapter 12 Communications**

- 12-1 Network**
- 12-2 Spectrum**
- 12-3 EWO**
- 12-4 COMSEC**
- 12-5 Logistical Systems**
- 12-6 Information Assurance**
- 12-7 Out of Sector Missions**

### **CHAPTER 12 – COMMUNICATIONS:**

#### **12-1 Network**

- 1. Mobile Video Unit (MVU) Van Fiber.** The RTU is required to connect and validated fiber connectivity through the MVU NLT 1700hrs TD 01; and remain connected for the remainder of the rotation.
- 2. WIN-T BCT Main CP Fiber Connect to MVU.** Configuration in order to connect to MVU fiber is determined by the Lot number of the RTU WIN-T systems.
  - a. Lot 10:** fiber connection between the STT and the JNN has a cost of 400.
  - b. Lot 9 and below:** fiber connection between the STT and the JNN has a cost of 0. 52ID NETOPS will direct the costing configurations of the fiber network.
- 3. High-Capacity Line of Sight (HCLOS) and Peer-to-Peer (P2P) Links** primarily provide redundancy to either the RTUs JNNs/CPNs using LOS data packages enabling high speed connectivity to JNNs/CPNs for high bandwidth programs like video feeds. Every 12 hours / once every shift, all HCLOS links transmit and receive power and dBms are checked to ensure they are operating at an optimal level. This prevents the burning up of feed cones due to excessive power level. This also mitigates risk of outages due to loss of power associated with wind and antenna movement.
- 4. Survivable Mobile Anti-Jam Reliable Tactical Terminal (SMART-T).** The SMART-T, if manned and provided by the RTU, acts as a direct connection from 52d ID to the RTU ensuring reliable redundant mission command connectivity.
- 5. AN/PSC-15 Global Rapid Response Information Package (GRRIP).**
  - a. COMSEC Key.** Vulture team will sub hand-receipt PPK COMSEC Key via Key Variable Management (KVM) worksheet during RSOI 2.
  - b. The GRRIPs computers** will be updated weekly by utilizing a CD uploaded with the latest virus definitions from ARCERT. Units may use an external CD drive for the systems.
- 6. Network Enterprise Center (NEC). NEC Service.** In order for the RTU to gain NEC services at NTC the following must be completed. RTU will provide seven day lead-time for any requests requiring NEC services (NIPR, NEC SIPR, VTC, etc.). Emergencies will be handled on a case-by-case basis.
- 7. RTU will process all NEC requests to NTC Post G6 Future Operations.** POC is Eddie Collins at 760-380-1343 or DSN 470-1343 and email [eddie.collins1@us.army.mil](mailto:eddie.collins1@us.army.mil).

#### **12-2 Spectrum**

- 1. Frequency Plans for the Land Mobile Radios, Motorola XTS series of radios, RCS radios and frequencies associated with Line of Sight systems** are managed by NTC.

**2. Voice Communication. Radio Room/ TOCNET.** WTA is responsible for loading the ASIP radios with the current load set/SOI received from the OPS GRP Vulture 30 team. After WTA has loaded the ASIP radios a cut sheet is developed and posted in the Radio Room and given to the TOCNET FSR. WTA will load all available ASIP radios with the RTUs Frequencies / CEOI / load set; however, will leave the SC PT 52ID nets loaded on a set standard of ASIP radios at all times. The purpose of this is to ensure communications with OCs at any time if the RCS radio system becomes NMC. Loading of the load set is to take place NLT RSOI 2 to ensure FM communications with the RTU. Cut sheet identifying each ASIP radio by Frequency, unit ID and/or if the radio is not being utilized. If COMSEC changeover takes place or a COMSEC compromise takes place and the ASIP radios must move to a different Julian date then WTA will ensure communications with the RTU is kept before and after the COMSEC changeover has occurred. TOCNET. After WTA has loaded the ASIP radios and handed the cut sheet to the TOCNET FSR the FSR will load the TOCNET system.

**3. Flight Operations - Jabber Chat** is primary communication platform with Green Flag – West and/or 196 California National Guard IC assets. Download Jabber from Defense Connect Online (DCO) and install Jabber software on select NIPR systems as per Annex H in Appendix 5, Tab G. Assign one NIPR computer and at least one ROVER or OSRVT to facilitate communication with 196 RS at the BCT TOC.

**4. Fort Irwin COMSEC office** issues the Communications-Electronics Operating Instruction (CEOI). The CEOI and only that equipment authorized by the CEOI, SOP, Operations Center, applicable regulations and technical manuals will be used.

**5. All FM nets** will operate in the secure FH mode (unless otherwise directed by Warrior Main / TAC / or Dragon Live Fire OC/Ts). The Crypto Net Variable (CNV) will be provided by the Vulture Team and will not be changed without the concurrence of the DTOC.

**6. The RTU** will provide Plans and Operations Division, Operations Group, information on cross attachments, support units, or other requirements not specifically provided for in the issued CEOI package as notes to the troop list coordinated through FORSCOM NLT 120 days prior to the rotation.

**7. CEOI Editions & Changeover.** Units will not supersede editions in the event of a compromise, the RTU's COMSEC compromise battle drill will use Julian date changes to mitigate the compromise instead of changing segments. The FM key will not change throughout the rotation.

**8. Call Signs.** Units may use fixed call signs. The unit must provide a list of call signs and expanders to the 52ID G6 by RSOI 02 Units will use CEOI call signs on non-secure nets.

**9. Division High Frequency (HF) database** is managed by CPSI. CPSI assigns and deletes frequencies associated with the Radio Section's HF data base.

**10. Personal cell phones** in the RUBA should be secured as the unit determines to meet security requirements. During RSOI and Regeneration, government cell phones may be used in the cantonment area for administrative purposes. During force-on-force, only specified individuals in the rotational unit may use a government cell phone for ADMINISTRATIVE purposes. Government cell phones shall not be used for command and control purposes. Specified individuals include, BDE/BN CDR, BDE/BN CSM, BDE Chaplain, BDE Surgeon, BDE CO, Safety Officer, Environmental Control Team Chief, and STT Operators to peak and poll. The BDE CDR can request an Exception to Policy in writing to the COG NLT 1700hrs RSOI 03. This request is submitted thru the Operations Group Chief of Communications, Vulture 02A. If government cell phones are utilized for mission command purposes, the cell phone will be confiscated.

**11. Closed Cellular Network (CCN)** cell phones are distributed and managed by the 916th Support Brigade, 760-380-5347. RTU will pick-up on RSOI 01 at 0900hrs with signature card and assumption of command orders. CCN towers become active on Friday RSOI 05. 11<sup>th</sup> ACR is responsible for tower power generation and fuel sustainment. The CCN is managed by the NTC G6.

12. Handheld Radios are unauthorized IAW FCC policy and will remain in LSA Warrior.

13. Unsecure hand-held radios are not authorized for use at the NTC. RTUs should coordinate with the NTC Spectrum Management Office NLT 180 days prior to their arrival at the NTC for testing and approval of any RF transmitting equipment not formally tested or approved.

14. Operations Group CONPLAN for RCS failure is below.

## **OPS GRP CONPLAN for RCS Failure**

**Situation:** RCS fails or is degraded to such a point that unacceptable risk is incurred for the Observer Controller Communication System during rotation.

**Mission:** Provide alternate communications in the event of RCS failure or degraded conditions using FM frequency radios.

**Concept of operation:** In the event of RCS failure, the capability is to have one Net that every team can use for OPS CMD which has the ability to contact Warrior Main (Bldg 990) and to have two Team internal Nets to communicate. TOCNET already has all Nets loaded into the INI file. OCs are still able to communicate in the Box utilizing the RCS radio in "DIR" mode.

**Tasks:**

Vultures –

- Issue SOI – OPS GRP CMD net, and 2 x nets for each team

Warrior –

- Issue CONPLAN INSTR
- Conduct FM comms rehearsal

**Coordinating Instructions:**

- Ensure all OCCPs have operational ASIP radios IOT monitor and communicate with OCs and Warrior TOC
- Identify OC vehicles needing FM radios
- BPT execute team internal relay to cover operations and deadspace
- Ensure all teams maintain OPSEC on single channel net
- Identify BLUFOR OPS that cannot be covered with adequate OC FM coverage

**Timeline:**

**H- 4:00**

Warrior TOC issues CONPLAN Instructions and sets H Hour  
Teams receive pre-established Commo Card with SOI (see below)

**H- 2:00**

OCCP radios prepped with CONPLAN frequencies (see below)

**H- 1:45**

DTOC executes Commex with OCCPs

**H- 1:00**

DTOC Commex with all Teams to confirm OCs are equipped to execute without RCS radios

**H- Hour**

All OCs are equipped with ASIP radio Comms

RADIO NAME	FREQ
BRONCO 1	30.050
BRONCO 2	30.200
TARANTULA 1	30.450
TARANTULA 2	30.500
SIDEWINDER 1	30.550
SIDEWINDER 2	30.600
EAGLES 1	30.750
EAGLES 2	31.000
COBRAS 1	31.125
COBRAS 2	31.500
WOLF 1	31.700
WOLF 2	31.800
SCORPION 1	31.900
SCORPION 2	32.125
GOLDMINER 1	32.600
GOLDMINER 2	33.200
RAVEN 1	35.00
RAVEN 2	35.875
DRAGON 1	60.450
DRAGON 2	61.050
DARBI 1	37.050
BOBCAT 1	41.925
PUMA 1	57.250
OPS CMD	58.450
OPS O/I	59.700
VULTURE MAIN	46.65
DIV CMD	100
BDE CMD	200

### **12-3 COMSEC**

1. Firefly and PPK keys. RTU. RTU must provide their own firefly and PPK keys. Other. 52ID NETOPS is responsible for all COMSEC for SNAP terminals, the 52ID JNN, Lan-in-a-Can (LIC) kits, and Fly-Away-Kits (FAK).

2. COMSEC Compromises. COMSEC/CEOI compromises will be reported immediately to WARRIOR Main via Operations, G2 and G6 channels. RTU/BCT is not authorized to initiate COMSEC compromise actions until directed by the COMSEC Controlling Authority. The RTU will execute a Julian date change during compromise.

### **12-5 Logistical Systems**

BLST, Digital Systems Engineer (DSE). HICON Digital Systems Engineer DSE coordinates the activities of all C4I FSRs in support of the RTU. HICON DSE works for the Brigade Logistics Support Team (BLST); however, works very closely with Vulture 57A and Vulture 30 to ensure all the assets from the NTC are being utilized accordingly.

### **12-6 Information Assurance (IA)**

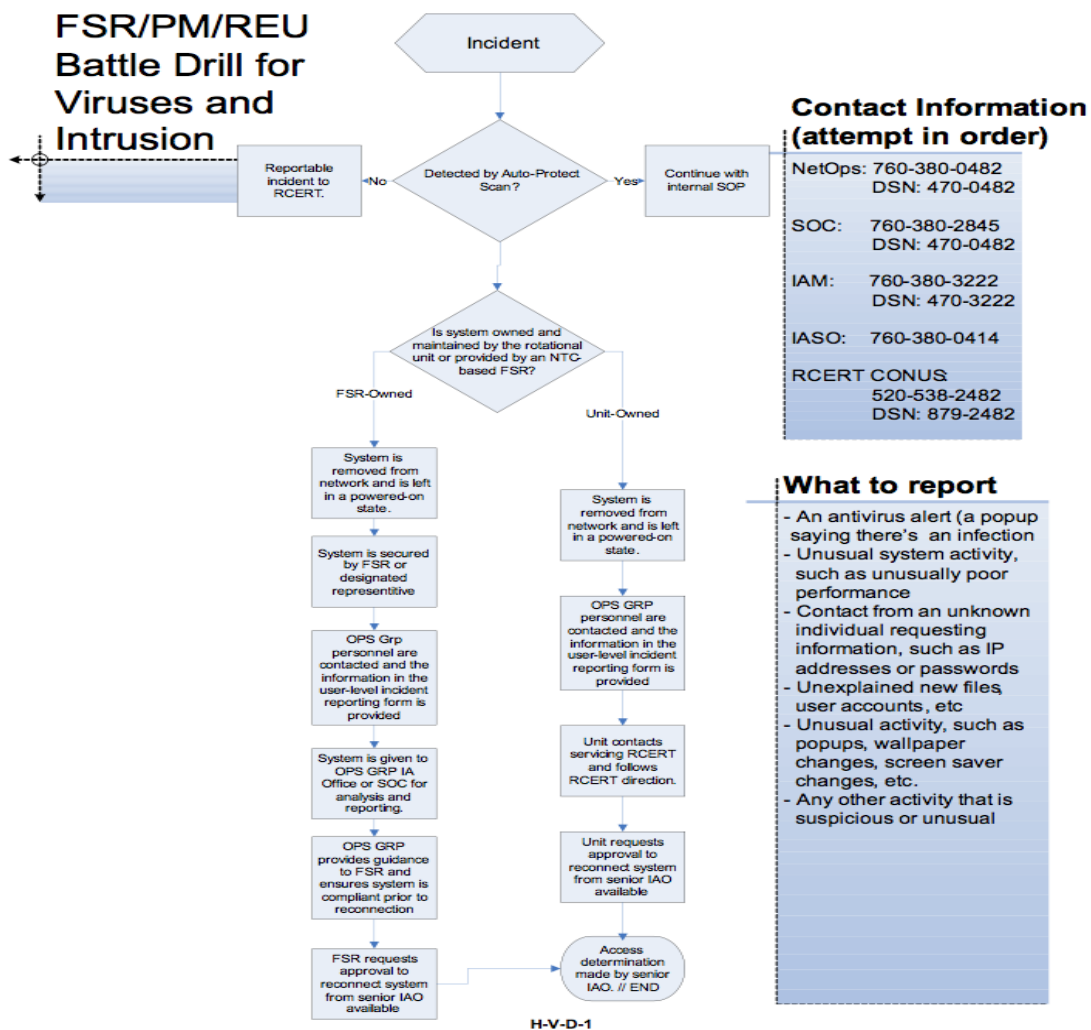
1. RTU is required to meet the following Information Assurance requirements prior to the BCT given authorization to enter into the box for training. TAB C provides a checklist to assist unit in improving their IA posture and provides required report to insure 100% unit compliance prior to deploying into the box.

2. Reporting and compliance begins as soon as the network comes up. All systems must be managed by AV server before the CG will authorize movement into box. IA Status is reported daily at 0200hrs and 0400hrs (Annex H, Appendix 4, Tab A). NLT 1500 on RSOI 3 IA Compliance Reporting is mandatory, broken down by battalion (Annex H, Appendix 4, Tab B). IA Checklist detailing criteria for AV server, WSUS server, and clients is located (Annex H, Appendix 4, Tab C).

3. Virus Incident Report must be submitted only if a virus infects the network (Annex H, App 4, Tab E). IA Compliance Report is to be posted on the 52ID G6 SharePoint Portal as the BCT network is stood up it is located (Annex H, Appendix 4, Tab F).

4. 15-6 Investigations. The RTU will conduct a 15-6 investigation for the following IA incidents on the RTU network: Virus identified on the network, Unauthorized release of classified information onto a network of a lower classification, and incidences of a cross domain violation; connection of a classified system to a network of a lower classification, or the unauthorized connection of two networks of differing classifications.

5. OC/T Reporting Requirements. 5 Ws Report to Warrior Main. OC/T teams will provide a 5 Ws report to DTOC upon occurrence of a reportable IA incident on the RTUs network.



## **Chapter 13**

### **Cyber Electromagnetic Activities (CEMA) / Space Operations**

- 13-1 Cyberspace Operations**
- 13-2 Electronic Warfare**
- 13-3 Aerial Electronic Attack**
- 13-4 Spectrum Operations**
- 13-5 Space Operations**

#### **13-1 Cyberspace Operations**

- 1. The Commander of Operations Group is the release authority for all cyber actions conducted at the National Training Center. All cyberspace operations will be vetted through Lizard 3, Lizard 9, Lizard 30, Lizard 71, Warrior 3 and the Lizard EW team. The COG may delegate approval authority for specific cyberspace operations to the Lizard team.**
- 2. OPFOR Cyberspace Operations. The DTG (OPFOR) will coordinate with the Cyber OPFOR in order to synchronize cyberspace operations with maneuver operations. The Cyber OPFOR will coordinate all cyber activities and effects through the DTG commander's CEMA representative. The DTG will submit requested effects to the Lizard CEMA team for review and de-confliction prior to submission to the COG.**
  - a. The Cyber OPFOR will not compromise any Personal Identifying Information, HIPAA controlled information, military justice information, information relating to the exercise of worship or religious pursuits and other information outside of the scope of the Cyber OPFOR charter. The Cyber OPFOR will not compromise classified information.**
  - b. The Cyber OPFOR will conduct operations in line with the ROE established by the Memorandum of Agreement between the COG and the 1<sup>st</sup> IO Commander. Operations will be conducted according to Cyber OPFOR Methodology of Research, Recon, Exploit, Post-Exploit, Cyber Effects and Recovery.**
  - c. Cyber LD will be conducted NET completion of the Mission Command Validation Exercise unless directed by the COG.**
  - d. If the RTU suspects or detects activity from the Cyber OPFOR on the network, they will take the appropriate defense actions in accordance with their incident response plan and will notify 52ID Main and G6.**
  - e. During Cyber Support to Corps and Below (CSCB) rotations, the Cyber OPFOR is authorized to conduct offensive and defensive cyberspace operations on the Insurgent Communications Network. These operations are meant to provide a contested cyber environment to RTU cyber operators attempting to leverage cyberspace in support of the BCT Commander's intent.**
- 3. RTU Offensive Cyberspace Operations (OCO). The RTU may request offensive cyberspace operations in support of maneuver operations during force-on-force. The RTU will submit a Cyber Effects Request Form (CERF) along with a CONOP to the Operations Group CEMA Cell NLT 24 hours prior to the requested execution time. All RTU OCO requests will be approved by the COG, or a designated representative. Lizard EWO will conduct necessary coordination with Lizard/Warrior teams to ensure effects are replicated accurately in line with the RTU request, and the COG's guidance.**



## **13-2 Electronic Warfare**

- 1. OPFOR Electronic Support Measures (ESM) & Electronic Countermeasures (ECM) Effects. All RTUs are subject to attempted OPFOR ESM and ECM. The Operations Group Electronic Warfare Officer (EWO) coordinates with OPFOR EW assets for frequencies to jam. Range and locations are announced on RCS OPS CMD (100) prior to OPFOR jamming activities. No OPFOR jamming will occur without approval from the COG. Jamming continues until the conclusion of the essential CEMA support task, BLUFOR counters the activity, or CEASE BUZZER is ordered by the COG or designated representative.**
  - a. OPFOR EW Deception operations will not be conducted with captured RTU communications equipment. EW deception can be conducted using OPFOR radio and EW systems including SINCGARS, STRATOMIST, and VROD/VMAX.**
  - b. OPFOR EW Deception operations must be approved by the COG or designated representative before execution.**
- 2. EW assets will adhere to the No-Jam and No-Collect frequency lists published prior to each rotation. Spectrum management at the NTC ensures training objectives are met while preventing infractions of Federal, State, and Local regulations. The restrictions below will be followed during all rotational exercises (these lists are provided to the rotational unit upon arrival at the NTC).**
- 3. Restricted Frequency Lists as described below are maintained by the NTC Frequency Management. Restricted Frequencies are broken into separate listings with specific limitations as shown below:**
  - a. List 1 and 2 are Permanent Status 0 (no-jam/no-intercept/no collect). They are labeled Permanent Status 0 and 02.**
  - b. List 3 is a Rotational Status 0 (no-jam/no-intercept/no-collect) list. The frequencies in lists 1 through 3 are strictly off limits to OPFOR/BLUFOR at all times.**
  - c. List 4 and 5 are respectively the 50 and 1500 watt restricted jamming lists. Collection operations are authorized against frequencies on these lists at all times.**
  - d. List 6 is the CT-IS set to CT-IS rise restricted jamming list. Even though collection operations are authorized against frequencies on this list at all times, jamming is only authorized while the CT-IS is above the horizon. Ranges increase during the hours of darkness and interfere with civilian and other nearby military forms of communication.**
- 4. Unrestricted Frequencies. All other frequencies not covered by the aforementioned lists are targetable for collection and jamming operations at all times.**
- 5. EW Asset Out Of Sector Positioning Authority. The 52ID will be the approving authority for the placement of EW systems outside the unit's area of operations.**
- 6. RTU Jammers. Jammers may be employed on the battlefield at the NTC under the following conditions (subject to approval IAW AR 525-22 and FORSCOM REG 350-50-1):**
  - a. Any RTU that wants to employ EW equipment at the NTC must submit a concept of employment to the COG for approval. All EW equipment the RTU has the potential to use during the rotation, to include commercial off the shelf equipment must be reported to NTC EW personnel and Spectrum Management during LTP prior to rotation in order to receive necessary spectrum clearance for operation.**

b. An EW OC/T will be notified in advance of emplacement and accompany player personnel deploying the jamming units.

c. An EW OC/T must be positioned in proximity to all employed and operational Jammers. This is to allow the OC/T to shut down the units quickly should the need arise. This is for safety purposes only; the OC/T in no way will assume responsibility for damage control or property accountability of jamming units.

d. EW personnel are authorized to use ES and EA capabilities in order to identify immediate threats for the conduct of military operations including threat warning, avoidance and jamming.

e. EW personnel will not intercept, identify or locate intentional or unintentional radiated electromagnetic energy for intelligence purposes. If EW equipment is used for these purposes, it must be manned by 35 series SIGINT personnel.

#### **7. EW Operations against TACAIR.**

a. **Restrictions.** Communications jamming/deception may be employed in all Force-on-Force areas of the NTC on both Blue and Red TACAIR. Intrusion and deception attempts may not be real-world call signs (i.e., Sundance or Fort Irwin range Control). Jamming is prohibited on safeguard frequencies (in accordance with the NTC G-6 joint restricted frequencies list). Havequick equipment and procedures may be used if all players are Havequick equipped. A safety call to terminate jamming will be made by an aircrew member, FAC, or controlling agency to terminate comm-jam whenever a hazard is imminent or an emergency is in progress. All electronic jamming and all intrusion/deception activity will be terminated when safety, Stop Buzzer, or cease jam is transmitted on FM frequency 41.95 MHz, UHF guard frequency 243.0 MHz, or VHF guard frequency 121.5 MHz.

b. **Procedures.** Pre-mission briefings, coordination and mission planning will include Chattermark and Brevity Code procedures. Additionally, the FAC/Fighter briefing at the Contact Point (CP) will include Chattermark procedures. A jam-free rendezvous frequency will be designated and briefed to all participants. This frequency will be used only to establish communications if radio contact is lost. When Havequick is to be used, any changes will be published in the "GREEN FLAG-West Quarterly" and "Weekly SPINS". Team Raven personnel will brief Havequick procedures to all participants. There are four BLUEFOR UHF strike frequencies allocated for Force-on-Force battles. Three of these frequencies may be jammed during any one CAS mission. The OPFOR TACP has three allocated UHF frequencies, any two of which may be jammed for any one CAS mission. There are two FM strike frequencies available for the Blue TACPs and two for the OPFOR TACPs. One of these frequencies may be jammed per-mission for each force. Airborne and ground based jammers are authorized with prior detailed coordination between Operations Group (Lizard Plans) and GREEN FLAG-West.

**Safety.** EW elements will continuously monitor CEASE BUZZER on (Primary) OPS CMD (RCS 100), (Alternate) EW NVOIP 760-380-0699, (Contingency) net ID F100, or (Emergency) single channel FM 41.95, during times when jamming operations are conducted, and cease operation immediately if so directed. All ICD/jamming will cease during MEDEVAC and CASEVAC operations.

#### **13-3 Aerial Electronic Attack**

1. **Implementation.** The RTU BCT may request for AEA assets to support their operations. The effect(s) may be constructive, replicated or live. The DIV EWO rep or DIV FSO will, upon receipt of the request approve or disapprove the request and issue the request to the NTC rep at CAOC NELLIS. If the asset is to be notional and the effects constructive, the FSE or ASOC (in the case of immediate requests) personnel will provide the affected areas and times to the Blackhorse TAFF at the DTOC.

2. **Requesting Procedures.** All requests for electronic attack (EA) must consist of the following: DD 1972, Joint Tactical Airstrike Request and Electronic Attack Request Form (EARF). A CONOP is required 24 hours prior to execution; submit CONOPs to DIV EWO.
3. **Request Flow.** BNs must submit requests to the BCT EWO for prioritization and approval. The BCT EWO must submit the products to DIV NLT 1200 the day prior to the effects for pre-planned missions. The BCT EWO will place all request products in the UPLOAD NEW REQUESTS folder on the WARRIOR EWO PORTAL. In the case of immediate requests, all request products must be submitted in the new format.
4. **The Jamming Control Authority (JCA)** is determined by the requesting BCT EWO. In most cases the JCA should be the supported BN EWO. The responsibilities of the JCA are: Participating in development of and ensuring compliance with the joint restricted frequency list, Validate and approve/deny cease-jamming requests, Maintain situational awareness of all jamming-capable systems in the area of operations, Serve as the BCT/BN commander's executive agent for developing EW intelligence gain/loss recommendations when electronic attack or electronic warfare support conflicts occur, coordinating jamming requirements with joint force components. Investigating unauthorized jamming events and implementing corrective measures.
5. **JCA Communications Requirements.** The JCA must have communications with the supporting asset and the supported element. It is recommended that the JCA has the following communications capabilities available: multi-band radio (Harris or MBITR) and a SIPR computer with Jabber/Transverse. An EW OC/T will provide a multi-band radio to communicate with live AEA assets if the JCA has none available.
6. **Cease Buzzer Procedures.** CEASE BUZZER (CB) procedures must be articulated in all EA requests to include CB FREQs (UHF/HF/FM) and JCA/JTAC call signs. All calls for CB must be verified by reason.
  - a. Example 1: ZAPPER 31 THIS IS RTU 16, CEASE BUZZER CODE BRAVO IOT COLLECT.
  - b. Example 2: ZAPPER 31 THIS IS RTU 16, CEASE BUZZER CODE DELTA, EXPERIENCING INTERFERENCE ON ICOMS.
  - c. If CB is called to de-conflict interference, BUZZER ON must be called after the interference is known not to be from the asset.
7. **Constructive asset replication supporting the RTU.** Real world Air Electronic Attack assets cannot be utilized for every requirement during training due to lack of training resources, therefore the 52 ID EWCC replicates them notionally.
  - a. During the rotation, the BDE EWO will submit AEA requests in support of the RTU mission. These requests are preplanned using the form DD1972 and submitted to the 52 ID EWCC for validation and resourcing. Occasionally the RTU will submit and emergency EA requests using the emergency EA 5-Line format. The purpose of the request can range from suppression of enemy air defense systems to communications denial.
  - b. When the EWCC deems that a request is valid and warrants support, there are multiple role-players that need to adhere to EW replication procedures in order to facilitate realistic EW effects. Figure 1 outlines the appropriate procedures for simulation a notional AEA asset.

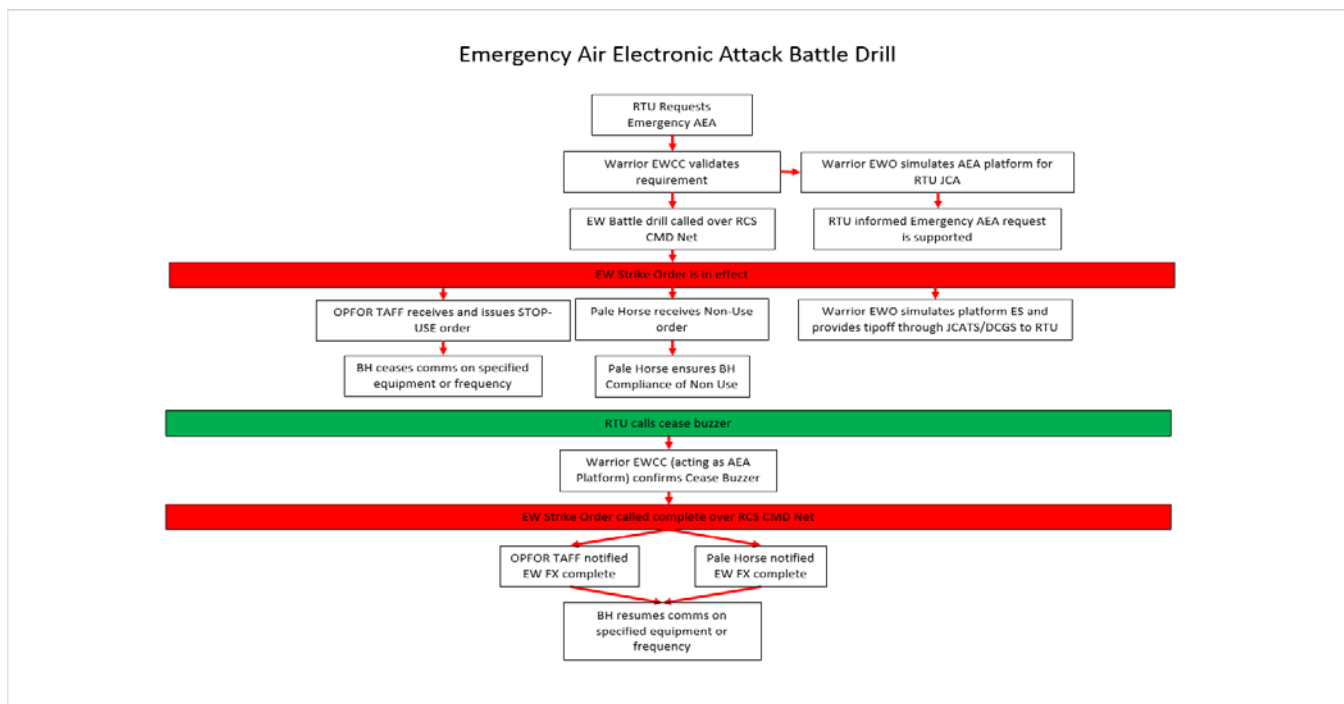


Figure 1.

8. **Live non-lethal effects targeting OPFOR.** When the RTU has a real-world AEA asset such as EC-130 Compass Call, the RDU will act as the Jam Control Authority and target specific OPFOR frequencies with non-lethal effects.

a. The OPFOR will adhere to the 11<sup>th</sup> DTG SOI. Any deviation due to RTU offensive EA must remain inside of the approved jamming limitations published by the NTC spectrum management office. It is considered a violation of the NTC EXOP for OPFOR to communicate outside of the approved jamming list. 11<sup>th</sup> DTG SOI can be found at:

[https://army.deps.mil/army/sites/NTC\\_11ACR/RHHT/RS3/Rotations/Forms/All%20Rotations.aspx](https://army.deps.mil/army/sites/NTC_11ACR/RHHT/RS3/Rotations/Forms/All%20Rotations.aspx) by clicking “RGT Rotations” then selecting the current rotation. Next, search through the listed FRAGORDs until the “Rotation 18XX-XX BH Leader’s Book” is located. Search the file for “11<sup>th</sup> DTG SOI.”

b. The spectrum manager will ensure that the SOIs used by OPFOR are included in the trusted agent list for approved jamming and that those frequencies are not on the JRFL.

c. During the EA mission if the asset reports enemy SC/PT FM communications on any frequency other than the approved SOI, the JCA WILL NOT direct the aircraft to jam those frequencies. The EWO will collect the post mission data from the aircrew and submit the violation report to the COG through the appropriate reporting channels.

#### 13-4 Spectrum Operations

1. The rotational unit must coordinate for the use of approved frequencies prior to use of any emitter at the NTC IAW the 120-day letter.

2. Jamming and/or shutting down of CCN towers will be conducted as follows: The Operations Group EWO will contact either Spectrum Management or the 11<sup>th</sup> ACR Network Technician with the tower

affected and the requested duration. That rep will then shut down the identified tower for the duration of the operation.

3. List 1-6 (no-jam/no-intercept/no-collect) will be consolidated into a JRFL and published on the 52ID SIPR share portal. The web link to the JRFL will be published in ANNEX H (SIGNAL) to the 52ID base OPORD. The JRFL will be a living document that will reflect the current Jam restrictions at all times and serve as the official governing document for all NTC role players to include joint assets participating in NTC training.

### **13-5 Space Operations**

#### **1. GPS Denial**

a. Any and all OC/Ts are authorized and expected to call a CEASE BUZZER at any time during GPS denial events over RCS OPS CMD 100 for safety reasons. Such reasons include, but are not limited to:

- i. Real-world MEDEVAC and CASEVAC events
- ii. Real-world downed aircraft
- iii. Loss of control of any manned or unmanned aerial platform
- iv. Jammed vehicles or personnel about to enter into dangerous areas, such as impact areas

b. All GPS test requests will conform to CJCSM 3212.03A. The Operations Group Space Operations Officer or EWO will submit all test requests through NTC G-6 spectrum management NLT 90 days prior to the first test period for a rotation. The Space Operations Officer and/or EWO will oversee all GPS testing and ensure proper OC/T coverage. An EW will be present in the DTOC or immediate vicinity during all jam events.

c. The Space Operations Officer and/or EWO will conduct all required Federal Aviation Administration (FAA) Air Route Traffic Control Center (ARTCC) 24-hour and 90-minute notifications prior to each test period and will maintain two forms of communications with the 52 ID Main in case of a CEASE BUZZER call.

d. The 52 ID Main will be listed as the CEASE BUZZER point of contact for external agencies, such as the FAA, with either the Space Operations Officer or EWO as the secondary point of contact. In the event of a CEASE BUZZER call, the 52 ID Main broadcasts "CEASE BUZZER for GPS testing" over RCS OPS CMD (100). OC/Ts with jamming units will verify all test equipment is turned off and report termination to 52 ID Main within three minutes of the CEASE BUZZER call.

e. The compilation of specific dates, times, and locations of GPS jamming is classified Secret and will be handled appropriately to avoid spillage.

f. 11<sup>th</sup> ACR is the primary operator for GPS jamming equipment. However, when restricted by authorizations or to ensure training value, OC/Ts may employ low-power systems to provide a localized effect on the RTU as long as 11<sup>th</sup> ACR also simultaneously employs a VISMODO in a realistic manner.

g. Jammer operators will maintain constant communications with either Operations Group or Palehorse OC/T during jam events, either via RCS or physical presence. Operators report directly to Warrior Space buzzer on and off times, and Warrior Space informs the DTOC.

#### **2. SATCOM Denial**

a. The COG may direct denial of services accessed through WIN-T and JCR/JBC-P platforms. These events are replicated through coordination with the Regional Hub Node (for WIN-T) and the Mission Command Support Center (for JCR/JBC-P). The BFT-2 SATCOM signal provides data and

situational awareness for JCR and JBC-P. The Space Operations Officer is the primary planner and executor for BFT-2 denial, while the Lizard 30 team coordinates WIN-T denial directly with the RHN.

b. The MCSC requires JCR/JBC-P transceiver serial numbers so that they can decommission them on demand. Following completion of the event, the MCSC re-commissions all affected transceivers to return to normal operating mode.

c. All SATCOM denial events will be scripted and properly threaded into the scenario. Unless specified by scenario design, VISMODOs for jammers are not required.

## **Chapter 14**

### **Risk Management**

- 14-1 Rotational Unit Safety Officers**
- 14-2 Force Protection**
- 14-3 Rainstorms, Flash Floods, and Lightning**
- 14-4 Weather Related**
- 14-5 Wildlife**
- 14-6 Lost In Desert**
- 14-7 Sleep Areas**
- 14-8 Vehicle Operation**
- 14-9 UXOs Found in the Training Area**
- 14-10 Ammunition**
- 14-11 Laser Device Operations**
- 14-12 Carbon Monoxide Poisoning, Toxic Smoke, and Fumes**
- 14-13 Serious Accident/Emergency Situation Procedures**
- 14-14 Serious Incident Reports**
- 14-15 Off-Limits Areas**
- 14-16 Aviation**
- 14-17 Common Missile Warning System (CMWS)**
- 14-18 MEDEVAC Procedures**

#### **14-1 Rotational Unit Safety Officers (RSO)**

1. Rotational units must deploy with an RSO from their home station safety office. This may be a civilian or an officer (O-3 or above) with appropriate tactical, ammunition, and range safety training and/or experience to serve as the RSO. The RSO will assist the unit with safety issues and act as a liaison between the rotational unit and NTC safety officials. The RSO are not “players” during the rotation. His or her vehicle will be marked with Safety placards identifying the vehicle as an administrative vehicle.

2. Aviation units will appoint a U.S. Army Combat Readiness Center (USACRC) trained Aviation Safety Officer (ASO) for Aviation Task Forces (ATF) regardless of size or composition. This ASO is considered to be a member of the player unit and will wear IWS and HALO. The ASO will be issued a RTD TESS casualty card.

#### **14-2 Force Protection**

1. Units at all echelons will integrate risk management into all phases of mission or operational planning, preparation, execution, and recovery at Brigade, Battalion, Company, and Platoon level IAW ATP 5-19 Risk Management. For deliberate/pre-planned operations, the Deliberate Risk Assessment Worksheet DD FORM 2977 will be completed. For all other mission requirements, risk assessment must be briefed at a minimum.

2. Assessments of MODERATE or below may be approved by the RTU Commander. Assessments of HIGH or EXTREMELY HIGH must be approved by the Commander of Operations Group acting as the ADC (M) and the rotational senior trainer. During live fire operations the unit will not be granted a RED status for direct or indirect fire weapons until control measures specified by the unit Risk Management worksheet have actually been emplaced by the unit.

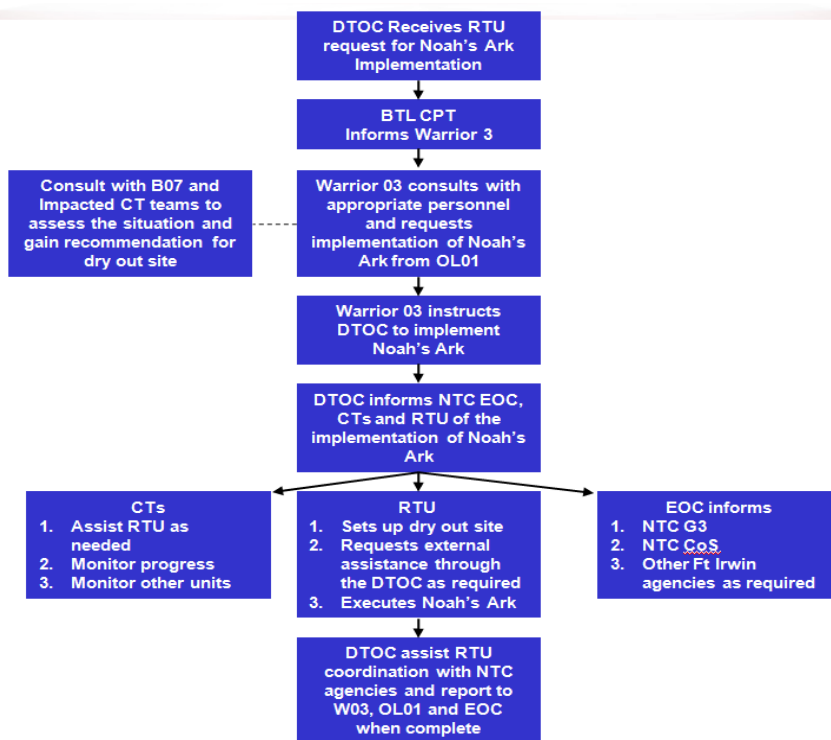
3. Force Protection. The rotational unit will include an annex to all unit OPORDS, warning orders, and FRAGOs entitled Force Protection, which includes specific safety requirements for the upcoming mission. This also may be accomplished by incorporating force protection into all appropriate paragraphs and annexes. Risk assessments should be updated as the mission changes.

### 14-3 Rainstorms, Flash Floods, and Lightning

1. Rainstorms, Flash Floods. Hazard. The Mojave Desert has deep wadis created by severe rainstorms. The rainfall does not have to occur on the reservation to produce runoff sufficient for major flooding. Do not park, sleep, or remain in wadis or ravines during wet weather. Do not attempt to cross flooded areas.

2. Noah's Ark. The RTU can request through 52ID and NTC to execute inclement weather plan, NOAH's ARK (Inclement Weather Plan) IAW NTC REG 350-12. The goal is to provide a quick, orderly movement to Soldiers and their equipment to a warm and dry area prior to returning to the battlefield.

3. Figure 3. (Noah's Battle Drill)



### 14-4 Weather Related Illnesses

1. Heat Related. Heat related-illness is the number one injury resulting in emergency medical evacuation of Soldiers. A combination of insufficient water and food intake, combined with fatigue, places Soldiers at high risk for heat injuries.





# NTC Surgeon Alert – HWI Preparedness



- Heat illness continues to remain a significant threat to the health and operational readiness of our Soldiers.
- Exposure to extreme temperatures is the reality of unit preparation for operational missions.
- Leaders and Soldiers should know that the prevention of heat illnesses are vital to sustaining combat power.

## Leader's & Soldier's Response to Heat Illnesses

### □ Heat Cramps

- Caused by an imbalance of electrolytes in the body!
- Contributory factors: lack of water & electrolytes intact!
- BE ALERT FOR: cramping of the arms, legs, stomach!
- **YOUR RESPONSE:** give electrolyte fluids to drink, put Soldier in the shade;
- priority evac** if symptoms worsen or no improvement after 30-min of rest/ rehydration. **NOTE:** Soldier may need 4-6hrs of downtime to recoup!

### □ Heat Exhaustion

- Caused by loss of body fluids (dehydration) and poor water intake!
- Contributory factors: lack of acclimatization!
- BE ALERT FOR: pale, moist, cool skin; headaches, dizziness, maybe nausea and/or vomiting!
- **YOUR RESPONSE:** replace fluids by mouth, put Soldier in the shade;
- priority evac** if symptoms worsen/no improvement after 30-min of rest & rehydration. **NOTE:** Soldier may need 12-24hrs downtime to recoup!

### □ Heat Stroke

- Caused by failure of body's cooling mechanism, and body's inability to produce sweat!
- Contributory factors: lack of acclimatization, protective outer garments!
- BE ALERT FOR: headaches, stomach pains/cramps, dizziness and **mental status changes (confusion, seizures, unconsciousness)!**
- **YOUR RESPONSE:** **seek medical care immediately**, place Soldier in shade, remove outer clothing, focus on cooling (cooling fans, ice blankets); checking mental status changes are more important than the Soldier's temperature:
- Ask – What is your Name? What is the year? Where are you?; **Urgent evac.**

## Normal adult body temperatures:

- Body temperature is a measure of the body's ability to generate and get rid of heat.
- A "normal" body temperature is often referred to as an oral temp. 98.6°F (37°C).
- In most adults, an oral temp. above 100°F (37.8°C) or a rectal or ear temperature above 101°F (38.3°C) is considered a fever.



**Nomenclature: THERMOMETER CLIN ORAL**

**NSN: 6515-00-149-1405**

**Cost \$2.14 ea.**

**Risk Management is the process of identifying and controlling hazards to protect the force.**

### Possible Outcomes of Inadequate Climatic Heat Management:

Casualty	Risk Severity
Heat Cramps	Marginal
Heat Exhaustion	Critical
Heat Stroke	Critical-Catastrophic
Water Intoxication (Over Hydration)	Critical-Catastrophic

**2. Cold Weather:** High winds will produce a significant wind chill factor. It is important to use cold weather clothing properly, maintain adequate hydration and ensure nutritional requirements to ward off cold weather injuries. When wearing clothing in cold weather, remember the acronym C-O-L-D: C: Keep it Clean; O: Avoid Overheating; L: Wear clothing Loose and in layers; D: Keep clothing Dry.

## 14-5 Wildlife

**1. General.** Poisonous snakes, spiders, scorpions, insects, and large wild animals indigenous to the Mojave Desert are abundant on the reservation. Bobcats and coyotes are found on all parts of the reservation and roam freely in the cantonment area.

**2. Coyotes & Bobcats.** Hazard. Both bobcats and coyotes have been known to attack Soldiers when threatened. Anyone bitten should carefully cleanse the wound and immediately seek medical help.

**3. Desert Tortoise.** Hazard. The desert tortoise is protected by State and Federal Wildlife Endangered Species regulations. Penalties include up to one year imprisonment, and \$50,000 fine. A significant tortoise population exists on the NTC reservation. Risk Reduction. A tortoise preserve and nursery is South of the 90 E/W grid line on the NTC. Remove all tortoises encountered on roads and trails to prevent collisions with vehicles. Report all injured animals to the DTOC. DPW, Environmental section, will collect these animals for treatment.

**4. Poisonous Snakes. Hazard.** Four species of poisonous snakes have been found on Fort Irwin. If a snake bites a Soldier, remember the snake markings and color. Do NOT attempt to kill or capture the snake. Take pictures without getting too close to the snake. If the snake is dead, carefully place it in a secure container for transport to the medical facility for identification. Sit the patient in the shade. Do not let the victim stand or walk around. Keep the patient as calm and comfortable as possible. Immobilize the wounded extremity. Place a strap or belt snugly above the bite. Tighten the strap around the limb to retard the blood flow but do not stop the pulse. Treat for shock. DO NOT elevate the bitten extremity. Evacuate the patient as soon as possible. DO NOT use the 'cut and suck' method of treatment.

**5. Arachnids (Scorpions and Spiders).** Scorpions and several species of poisonous spiders are found throughout the desert. Avoid insect stings and bites by hanging clothes, boots, and sleeping gear off the ground. Check bedding before use. Shake out boots and check socks and clothing before putting them on. If anyone is stung or bitten, keep patient quiet and send for medical aid. Clean the wound with an application of a mild antibacterial agent. Cool the area 10 to 12 inches around the puncture point with ice.

#### **14-6 Lost in the Desert (LID)**

**1.** It is deceptively easy to become lost at the NTC. A soldier lost in the desert during summer (temperatures of 110 or above) can survive three (3) days. This figure assumes a full canteen of water, and the soldier remains immobile in a shaded area. Physical activity will significantly reduce survival time. Training units will notify an OC/T immediately when soldiers are reported missing from their units and will keep OC/Ts updated on search progress. OC/Ts will assist in the search effort to find soldiers lost in the desert.

**2. LID Soldiers.** If you are in a vehicle, do not leave it, as a search party will spot a vehicle easier than someone walking. Move to open terrain if your vehicle is operational. Use the vehicle's mirror for signaling. If your radio is operational, contact your unit and explain your situation. The radio can also provide a homing signal for search and rescue aircraft. Prepare visual or audible signaling devices for searchers to see or hear.

#### **14-7 Sleeping Areas**

**1.** Soldiers will sleep in approved sleep areas established IAW the unit's SOP. Commanders will ensure that sleeping area perimeters are designated and marked. Sleeping areas should be off natural lines of drift and protected by natural obstacles.

**2.** At a minimum, sleep areas that are established without tents or tents smaller than GP medium will be marked with white engineer tape that is Hip high and approximately 20 FEET from sleep area. At night, this area will have chem. lights placed no further than twenty feet apart. Vehicles placed as a barrier will be positioned so that they cannot roll into the sleep area and will always have chock blocks in place. IBCT units, dismounted without vehicle support, hence no pickets, will at minimum place engineer tape knee high, on rucksacks, rocks or brush, ensuring chem. lights are visible.

**3.** DO NOT sleep under vehicles. Leaders/drivers must verify that personnel are not sleeping under or near vehicles prior to movement.

**4.** No personnel will lay prone outside of designated and marked sleep areas during rest periods, tactical pauses / SOBE, in congested areas, collection points, field site operations areas, bivouac, or assembly areas.

**5.** A roving guard or guards will be posted with lights or other high-visibility signal device to warn approaching vehicle crews that there are troops on the ground. Guards will enforce the use of ground guides.

## 14-8 Vehicle Operation

1. General. Vehicle accidents are the number one cause of injuries/fatalities during training rotations at the NTC. Excessive vehicle speed and absence of ground guides are involved in most cases. Table 14-08 outlines rotational unit speed limits. However, personnel will not drive faster than is prudent, given road, vehicle, and driver conditions. When units are in contact, vehicles may execute tactical evasion drills and other maneuvers IAW unit safety risk assessment. Temporary high speed dashes are permitted providing vehicles are not within, or closing within 5/10/50 meter rule of other vehicles/personnel and provided life, limb, eyesight and property is not placed at undue risk. Unit commanders will establish limits/guidance for their Soldiers.

Table 14-08 Training Speed Limits in the Training Area			
Normal Daytime Conditions			
Road Type	Wheeled Vehicles	Track Vehicles	Convoy Operations
Improved Roads	35	25	20
Unimproved Trails	25	20	15
Limited Visibility Conditions			
Road Type	Wheeled Vehicles	Track Vehicles	Convoy Operations
Improved Roads	25	20	15
Unimproved Trails	20	15	10
Cross-Country	10	10	5

2. Interception procedures. Units will not make physical contact between vehicles during pursuit, interception or other forms of contact. Tracked or wheeled vehicles that attempt to pursue or interdict civilian or paramilitary “role playing” vehicles must abide by the 50meter rule, visually signal the passengers of the intercepted vehicle to stop and exit the vehicle, and inform their accompanying OC/T of the action (e.g., stop and search, etc.).

3. Vehicles towing trailers or equipment will utilize unimproved trails speed limit during normal daytime conditions, limited visibility conditions and convoy operations.

a. Improved roads: Barstow Rd MSR, Langford Lake MSR, East Range Rd MSR, Bitter Springs MSR, Flagpole MSR, Silver Lake MSR, Pioneer/Debnam Pass MSR.

b. Unimproved Trails: Trails/Cuts/Passes that are not leveled or graded and have no visible maintenance but are recognizable to drivers.

c. Limited Visibility Conditions: Any environmental condition that impairs normal visibility; includes heavy dust, CT-OIS, night operations (under white light or NVGs), and inclement weather.

d. Where there is a speed limit sign, obey the posted limit.

**4. COB-V Accidents.** COB-Vs accidents will be reported in the same manner as an accident involving a military or government-owned vehicle. (Ex. DA 285-AB Feb 09 U.S. Army Abbreviated Ground Accident Report (AGAR)). Accident reports will be submitted through the responsible organization with a copy to the NTC Safety Office where any damage to a COB-V occurs involving a government-owned vehicle.

**5. Rollover and Fire Drills.** Unit commanders will ensure vehicle rollover and fire drills are conducted prior to deploying for the rotation and refresher training is conducted as part of RSOI operations. Rollover and Fire Drills will be rehearsed prior to the moving of vehicles. The Gunner Restraint System, (GRS), along with established rollover procedures, is a safety enhancement for turreted vehicle systems. Soldiers must be instructed to not rely solely on the GRS to prevent injury in the event of a rollover or vehicular accident.

**6. Required Equipment.**

**a. Headgear.** All soldiers must wear a combat vehicle crew, approved ballistic helmet, or flight helmet as appropriate, while operating or riding in tactical military vehicles at all times.

**b. Eye Protection.** Soldiers will wear Authorized Protective Eyewear List (APEL) eye protection while operating or riding as a passenger in Army motor/combat vehicles.

**c. Safety Restraints.** Safety belts are mandatory for front and rear seat vehicle occupants. The GRS is a personal safety restraint device, as are seat belts, seat belt Restraint systems, safety straps, and any other safety device that is used to secure or provide a safety mechanism to a soldier operating or riding in a vehicle. All vehicle systems with turrets must have an approved safety Restraint device mounted in the vehicle.

**7. Intercom.** Tracked vehicles, and wheeled combat vehicles, such as Strykers, will have a working intercom from Driver to TC. Operators will additionally utilize ground guides whenever they are moving in or through congested areas, collection points, field site operations areas, bivouac, or assembly areas.

**8. Hatches.** Vehicle hatches will be secured using an approved locking pin or latching device at all times. TCs will inspect safety pins daily for serviceability and security. Vehicles with broken hatch pins or latching devices will not be operated until proper repairs have been made or specifically authorized by the unit commander. For Bradley family of vehicles, or any vehicles with combat override, use of override is not permitted except by permission of unit commander (O-5) or higher.

**9. M1 Driver's Hatches.** The driver hatch of the M1 series tank will be closed whenever the tank is moving and/or whenever the turret is in operation.

**10. Load Plans.** All vehicles must have load plans and the vehicle's equipment will be secured IAW the load plan. Transport personnel only in vehicles with approved troop seats. DO NOT transport personnel in vehicle trailers/shelters. Personnel will be wholly contained within the body/sideboards of any vehicle. Secure safety straps and tailgates when transporting troops. All personnel will be seated when the vehicle is in motion. Fatalities associated with vehicle roll-overs are directly related to unsecured equipment crushing occupants inside the vehicle.

**11. Antennas.** Tie down antennas when moving within the cantonment area. Cover antenna tips with a protective ball to prevent injury to personnel.

**12. TC/VC / Senior Occupant Requirements.**

**a. The vehicle commander (VC) is responsible for the safety of the Soldiers assigned to the vehicle and will ensure that all occupants of the vehicle use the appropriate safety devices.**

b. TCs / VCs will inspect vehicle load plans and correct deficiencies prior to moving vehicles. TCs/VCs will ensure a crewmember walks completely around the vehicle to check that no one is in danger and that the area is free of obstructions or material that could be impacted by the vehicle before moving. TCs/VCs must be in position before moving. TCs and Vehicle gunners must be nametag defilade in the TC hatch when the vehicle is in motion.

c. Ground guides will be utilized at all times when operating vehicles in the vicinity of, or while going through, congested areas, motor pools, parking areas, cantonments, assembly areas, bivouac/sleeping areas, field site operations areas, collection points, etc. Front and rear ground guides will be used when backing vehicles larger than M998 series vehicles. Ground guides will be used during limited visibility operations whenever the driver's visibility is so poor that he or she is required to reduce the vehicle speed to the speed of a brisk walk.

d. OC/Ts do not have ground guide capability, therefore, the maximum speed limit for OC/Ts in areas identified in "c" above during daylight hours is 5 MPH. OC/Ts will park their vehicles outside the rotational unit's assembly area perimeter during limited visibility.

13, Limited Visibility. Take extra precautions while driving during the periods of limited visibility (night, dust, or less than optimum driving conditions). Slower driving speeds; be alert for obstacles such as barbed wire, tank ditches, wadis, on-coming vehicles, etc.; and dismounting personnel to reconnoiter forward prior to moving vehicles. Observer Coach/Trainers (OC/Ts) will maintain the same level of vehicle light discipline as their rotational counterparts during operations under conditions of limited visibility to prevent compromising the location of their rotational counterparts to opposing forces. OC/Ts will mark their vehicles with a Chemlight if they leave their vehicle unattended (i.e., dismounting with rotational counterparts) during hours of limited visibility to prevent collisions with other vehicles.

14. Vehicle Running Lights. During DATE operations, the rotational unit chain of command will determine the level of vehicle light discipline based on the tactical situation. OC/Ts will operate under blackout conditions or IAW the level of light discipline exhibited by their respective rotational counterparts when operating in any training areas.

15. Vehicle Searchlight Restrictions. Vehicles equipped with searchlights will not use searchlights against helicopters at any time.

16. Personnel WILL NOT sit or ride on top of moving vehicles. Exceptions require approval by an O-6 level CDR.

17. Seat Belts. All personnel are required to use seat belts/safety restraints when available.

18. Tracked vehicles will not operate on or cross hard surface roads at track crossing sites in the cantonment area: Outer Loop Road, and MSR Bull Run south of the water tower.

#### **14-9 UXOs Found in the Training Area**

1. Hazard. The NTC has provided the military community with a long history of training that dates back prior to World War I. While many portions of the reservation have been surfaced cleared of live and dud munitions, both live and dud munitions continue to be found. Abide by maneuver and excavation restrictions listed in Chapter 5. Do not enter off limits or restricted areas. The following rules apply when you find live or dud ordnance in the field:

- a. Default to Danger. Assume that all bombs, projectiles, canisters, and rockets are live ordnance.
- b. Stay Away. Do not approach, touch, run over, or disturb UXOs.

- c. **Marking.** Mark ordnance found IAW CTT standards. Mark all UXO using the NATO UXO markers, or, as an alternative, with pickets or stakes. Place chem-lites and engineer tape three (3) feet off the ground so that they are visible from all approach routes.
- d. Report all UXO using the standard 9-line UXO spot report through your unit chain-of-command for forwarding to the rotational EOD unit and DTOC.

**2. EOD Support.** During rotation, the rotational EOD company in support of the BCT will conduct a recon of ordnance items to evaluate and determine if they are live or training and determine what hazards exist. The rotational EOD unit is NOT authorized to reduce live ordnance. If the rotational EOD unit determines that the ordnance encountered is to be destroyed. Unit will construct protective works if required. Information on all items destroyed or not destroyed by the rotational unit will be forwarded to the Ft Irwin EOD unit at the end of the rotation by the Sidewinder 18 team.

#### **14-10 Ammunition**

**1. Definition.** Ammunition is defined as all munitions (explosive or otherwise), pyrotechnics, chemical agents, powder, and firing devices other than weapons; e.g., HOFFMAN/ MGSS charges and ATWESS charges. **Storage.** The ammunition supply point (ASP) is the only authorized permanent ammunition storage site on the installation. Field ASP/ATHP sites and use of CONEX containers will be governed by appropriate regulations and restrictions provided by NTC DCL. **Blank and Live Separation.** Blank and live ammunition will be separated by the maximum extent possible. Blank and live ammunition will NOT be stored on the same pallet. Blank and live ammunition may be stored on the same PLS flat-rack, but will be separated by space and/or a physical barrier. There will be a definite line of separation between blank and live ammunition during storage at all outdoor storage areas.

**2. Transportation.** Blank and live ammunition may be transported on the same vehicle, but must be separated prior to issue. **Handling. Hazard.** Soldiers have been seriously injured by improper handling of blank ammunition, smoke grenades, signal devices, and explosive simulators. **Risk Reduction.** Units will follow the procedures and rules: DO NOT conduct tactical training or fire any ammunition or pyrotechnics in the cantonment area without written permission from the Garrison Commander. Units using non-standard marking ammunition systems must follow marking ammunition systems manufacturer's safety procedures, the individual weapons user's manual, and the range safety regulations and standard operating procedures. Failure to comply with established operational and safety standards could result in weapon damage and/or personnel injury. Inspection and subsequent weapon maintenance must be performed when utilizing marking ammunition. Improper ammunition handling or improper weapon maintenance can cause man marking projectiles to become lodged in- bore. Blown weapon incidents have occurred when service ammunition was fired through weapons that had a man marking projectile lodged within the bore without first checking to ensure that the bore was clear. Units are responsible for ensuring the involved service weapons are properly cleaned and inspected after being converted back to service use. Do not fire weapons requiring ATWESS charges without first clearing the back blast area.

**3. During limited visibility conditions, do not intentionally fire weapons directly at airborne helicopters that are within 500 meters. Pilots using NVGs will be blinded.**

**4. Do not intentionally discharge any pyrotechnic simulators within 50 meters of helicopters under any circumstances. Additionally, no pyrotechnics will be fired at or near any aircraft in flight (i.e. star clusters, flares, etc.).** Observe safe separation distances from unprotected personnel at all times when employing pyrotechnic simulator devices. These devices must not be activated in loose gravel, sticks, or other materials that are subject to projection. Lesser safe separation distances are acceptable for protected personnel. Protected personnel are those protected by suitable cover, such as within armored vehicles, in buildings, in dug-in emplacements, etc. in addition, personnel would normally be considered protected where the simulator is separated from personnel by masking terrain or is detonated within a designated barricaded pit or area. Do not remove gunpowder from pyrotechnics. This explosive powder is volatile, and will cause injury to include, but not limited to, second and third degree burns, permanent or partial dismemberment, and blindness when ignited. Do not use pyrotechnics around flammable

liquids or materials. Refueling should be at least 100ft from the AHA. Ensure pyrotechnic devices are transported in the appropriate inner and outer shipping containers.

5. Do not activate pyrotechnic devices inside vehicles.

6. Turn-in. Upon the completion of your exercise, return all ammunition, components, and residue to the ASP. Company/Troop Commanders will complete and sign the required "Download Certification Memorandum" and provide to their counterpart. Thorough shakedown checks of personnel and equipment are critical in ensuring that ammunition is turned in correctly. Amnesty boxes are located throughout the cantonment area, as an additional safety measure; however these are not Class V turn in points. The placement of ammunition in trash containers, chemical toilets, buried underground is strictly prohibited.

#### 14-11 Laser Device Operations

1. Hazard. The TESS is an eye-safe system and is not considered hazardous under training conditions at the NTC and Fort Irwin. Unfiltered laser range finders/designators are not eye safe. Lasers will be treated as direct-fire weapons. Risk Reduction. Unfiltered Lasers. Unfiltered laser range finders or designators are prohibited during Force-on-Force operations (STX and FOF).

2. Tank LRFs. All tank laser range finders require the attachment of an ESSLER eye safe system during Force-on-Force operations, or contain eye-safe laser range finders.

3. Eye-Safe LRFs. M2A2 ODS, M2A3 BFV, M1A2, and M1A2 SEP equipped with the eye-safe Laser Range Finders may be used during force-on-force.

4. Aiming Lights. Infantry Aiming Light, Infrared (AN/PAQ-4) is eye-safe and can be used during Force-on-Force. However, hand held and vehicular mounted laser range finders and designators (AIM-1, GCP) are prohibited during force-on-force operations. AN/PEQ-2s are also considered non eye-safe.

5. MELIOS. MELIOS and MELIOS w/CVAM devices will replace AN/GVS-5s in force-on-force operations.

6. Airborne IR Lasers. During force-on-force training, the ACP-2, ACP-2A, and LITENING II pod (IR Marker) airborne IR lasers may be employed over ground personnel as long as the aircraft remain above 10,000 feet AGL and are actively monitored via the Air Warrior Measurement and Debriefing System (AWMDS) by the Raven Team and/or via active RADAR by Sundance. If the aircraft drop below 10,000 feet AGL, laser operations will be terminated by Raven white cell.

7. Mark VII Laser Rangefinder may be used by Tactical Air Control Parties during Force-on-Force operations under the supervision of an Observer-Controller.

#### 14-12 Carbon Monoxide Poisoning, Toxic Smoke, and Fumes

1. Hazard. A number of systems/devices produce toxic fumes on the NTC battlefield. Many of these are difficult to detect or have delayed effects.

2. Risk Reduction Measures.

a. Fuel Burning Heaters, Stoves, and Generators. Commanders will ensure that only authorized tent heaters are utilized at the NTC. Units will not use commercial off-the-shelf or locally purchased heaters in lieu of available type classified Army equipment, except: Acquisition of commercial off-the-shelf heaters is justifiable only in mission-critical circumstances. In those cases, units will obtain

equipment meeting the requirements of a national standards organization, such as Underwriters Laboratories, American National Standards Institute, the International Standards Organization, or the National Fire Protection Association. Personal (individually owned) heaters are not authorized for use in Army operations. Do not operate generators, heaters, or gas burning stoves in poorly ventilated areas. Someone must be awake while heaters are being used.

b. **Sleeping in Vehicles.** Only authorized heaters will be used to heat vehicles. When vehicle heaters are used, hatches/windows will remain partially opened to allow circulation and to prevent carbon monoxide poisoning.

c. **Signs and Symptoms of Poisoning.** Be alert for symptoms of carbon-monoxide poisoning. The early symptoms of carbon monoxide poisoning often are mistaken for the flu. Symptoms include headache, dizziness, weakness, nausea, vomiting, sleepiness and confusion. Breathing very high concentrations of carbon monoxide can be lethal in minutes.

d. **Exposure to HC smoke from AN-M8 white smoke grenades or smoke pots (HC smoke) or metallic powder obscurants** can cause long term health effects and death in confined spaces. OC/T's will use common sense when deploying smoke and will avoid deploying smoke within the close confines of urban operations. Anytime exposure to smoke produces breathing difficulty, eye irritation, or discomfort in one individual will serve as a signal for all similarly exposed personnel to evacuate the immediate area. The exact nature of the smoke inhalation, namely HC white smoke, should be brought to attention of medical personnel.

#### **14-13 Serious Accident/Emergency Situation Procedures**

1. **Red Pyrotechnics.** Red pyrotechnics are only used to signal an actual emergency.

2. **Personnel Actions.** Personnel not required for MEDEVAC procedures will relocate or avoid coming within 500 meters of the MEDEVAC site and resume training as soon as MEDEVAC is completed.

**14-14 Serious Incident Reports** Rotational units will report the following incident through the rotational chain of command to the 52ID/ X Corps TOC and to unit observer controllers. Any accident involving personal injury or vehicle damage. Any vehicle fire or flarebacks. Any damage to the weapon system due to firing. Any accident involving petroleum, ammunition, pyrotechnic, or demolitions. Any other emergency or unusual incident which could have caused injury, severe damage, or loss of life. Improper target ID and engagement. Any unexploded ordnance.

#### **14-15 Off-Limits Areas**

1. **General.** Refer to Chapter 5. The following areas are off-limits to all rotational unit personnel, equipment, and activities in the Live Fire area of operations:

2. **No Fire Areas.** Rotational unit personnel and equipment are allowed within 25 meters of the structures within the following NTC No Fire Areas (NFAs): NFAs 06, 07, 09, 10, 11, 12, 14, 15, 16, 18, 22, and 25.

3. **Dry Lake Beds.** Drinkwater Lake (NV424283), No Name Lake (NV473218), Nelson Lake (NV204208), Red Pass Lake (NK583028), Leach Lake Area (North of E-W Grid NV33).

4. **Live Fire Operations Bunker.** The bunker located at NV475273, antenna/camera sites, OC/T Command Posts, and OC/T field support sites are all off limits. Exceptions granted only when specifically directed by an OC/T.



**5. Targetry.** Target pits and demolition pits are off limits.

**6. Marked Sites.** Archaeological sites which are areas marked with single strand barbed wire cattle fence and tactical warning signs, as well as any area which has a sign posted 'Off Limits to Rotational Personnel and Equipment'.

#### **14-16 Aviation**

**1. Governing Regulations.** RTU aircraft will operate at the NTC IAW NTC Regulation 95-1, APG, ACO, and their unit TACSOP. Air-to-air stingers (ATAS) may be fired at an RPVT during live fire operations.

**2. Proximity to Ground Forces. Vehicles and Soldiers.** Aircraft will never approach, fly-over, dust, or land within 100 meters of soldiers or vehicles. Aircraft must land down-wind from soldiers when possible. **Dust Mitigation.** Aircraft will not use hovering techniques to intentionally stir up dust and debris when conducting aerial searches for opposing ground forces. Violators will be adjudicated as Safety Kills.

**3. Scheduled Landings.** If required to make a scheduled landing in Force-on-Force operations, pilots will land in an area which will not interfere with ground vehicles.

**4. Airmobile Operations.** Soldiers being transported and aircrews must be trained in conducting airmobile operations. Soldiers loading, riding and departing aircraft must follow instructions from the aircraft pilot or crew chief (FM 90-4). For personnel to ride in aircraft without troop seats FORSCOM approval is required.

**5. Animals.** Horses and other animals will remain at least 500m away from rotary wing aircraft in order to prevent possible injury to the animal and rider. Rotary wing aircraft should make every effort to maintain a 500m slant range from observed live animals along their route of flight.

#### **6. Refueling Procedures**

**a. Hot Refueling.** Aircraft will land at the RTU FARP and comply with their SOP requirements. Aircraft armament systems (including ASE) must be placed on SAFE and armament/CMWS safety pins installed prior to conducting refueling operations. Only emergency radio transmissions will be made. During night operations, the position lights will remain on STEADY BRIGHT. The Fire Guard will be positioned to see both the pilot and refueler. Fire guards will not pressurize fire extinguishers unless there is an emergency. Passengers will marshal in designated areas. No passenger or crew changes are authorized on refuel pads; these activities shall be accomplished elsewhere. No other personnel should approach the refuel area while an aircraft is present.

**b. Cold Refueling.** Aircraft armament systems (including ASE) must be placed on SAFE and armament/CMWS safety pins installed prior to conducting refueling operations. Additionally, when CMWS is installed the unit will comply with Section 15-13, Aviation Operations of the EXOP at all times with regards to the aircraft being "Armed."

**7. Weather Limitations.** All UAS operations must adhere to the specific weather limitations outlined in the UAS operations manual and AR 95-23, UAS Flight Regulations. This includes but is not limited to winds, precipitation, icing, turbulence and cloud cover. All UAS will return to the Launch and Recovery Site, if published Weather Advisories/Warnings prevent safe, normal operations of the UAS IAW the UAS operations manual or AR 95-23.

**8. UAS Safety.** UASs, by their nature, represent a unique hazard. The composite material of the fuselage produces toxic fumes while burning. The possibility of fire is always present during and after a UAS mishap. Additionally, many UAS systems include various pyrotechnic or explosive devices, therefore, anyone coming upon a downed UAS should do the following: Stay upwind at a safe distance.

Do not attempt to extinguish any fire, unless it poses an immediate hazard to life or limb (remain upwind while fighting the fire). Keep all others upwind and at a safe distance. Notify the DTOC/COG thru OC/T chain for SIR procedures. Secure the scene. Evacuate all personnel upwind of the site. Do not approach the aircraft. Do not disturb any debris.

#### **14-17 Common Missile Warning System, and armed aircraft procedures.**

1. All Flight and FARP OC/Ts will familiarize themselves with all appropriate Warnings, Notes, and Cautions associated with the Common Missile Warning System (CMWS) and the use of Infrared Countermeasure (IRCM) flares. Fort Irwin Cantonment Area/Main Post Helipad (MPH). CMWS equipped aircraft with IRCM flares installed requiring access to the Main Post Helipad (MEDEVAC or AMR (for passenger pick-up/drop-off)), will be approved on a case-by-case basis by Eagle 07 prior to execution. Aircrews will ensure aircraft armament systems (including ASE) are placed on SAFE and prior to joining "Green Route" in vicinity of the Fort Irwin Cantonment Area and will inform Desert Radio of this status. CMWS equipped aircraft operating on SAAFR "Green Route" will request special routing through Desert Radio and remain a minimum of 500m outside the published "Green Route" when transiting the Cantonment Area. Additionally, CMWS equipped aircraft will remain a minimum of 1000m from any Ammunition Supply Point (ASP/FASP).

2. Arrival and Departure Procedures. As determined by aircraft configuration and Unit SOP, set cockpit switches as appropriate prior to entering / exiting the operations area.

3. Aircraft Parking. While aircraft are parked at BLAAF or the RTU TAA between missions, the aircraft armament systems (including ASE) must be placed on SAFE and safety pins installed. Remove payload modules, store in proximity of the aircraft, and out of direct sunlight.

4. When conducting face-to-face coordination with a supported ground unit, the aircraft will land a minimum 200m away from ground personnel/vehicles. The payload modules may remain installed, with the aircraft armament systems (including ASE) placed on SAFE and safety pins installed.

5. If the aircraft is on Quick Reaction Force (QRF) status, the aircraft will be repositioned to a designated "Alert Area" at least 100m away from other "Non-QRF" personnel / aircraft or FARP operations. The payload modules may be installed, with the aircraft armament systems (including ASE) placed on SAFE and safety pins installed. Only emergency radio transmissions will be made from portable radios within 100m of the "Alert Area."

6. Proximity to Ground Forces. Aircraft will never approach, over fly, or land within 100m of Soldiers or vehicles. Aircraft must land down-wind from Soldiers when possible.

7. Use of Flares. The discharge of live or simulated self-protect flares from aircraft operating within the R-2502 is authorized within approved tactical maneuver areas only during missions controlled by an OC/T. The ACA may restrict the use of flares based on ground hazards. Fixed wing aircrews will refer to Air Force Instruction 11-214 - "Range Planning and Operations," for restrictions and limitations concerning the use of self-protect flares. The use of other aircraft discharged flares will be coordinated with the appropriate ACA at least twenty-four (24) hours prior to the actual mission.

8. Armed Aircraft Procedures. No helicopter arming operations will be conducted at BLAAF. Range 18 will be utilized for uploading Hellfire missiles and CMWS flares only. Helicopters with an in-flight weapons systems malfunction or gun jam will return to the unit's arming pad (FARP) site to be de-armed or cleared by certified unit personnel.

9. If a loaded weapon systems or jammed gun cannot be cleared after following the unit SOP, the unit will notify Ft. Irwin Range Operations. Range Operations will aid unit to get additional assistance or local EOD personnel support to correct the problem.

10. Armed aircraft will NOT operate or land at BLAAF unless there is an emergency requiring a roll on/running landing. If the emergency requires use of BLAAF, the aircrew will contact Desert Radio AIC to coordinate Ft. Irwin's Fire Department response. Use runway 13 primarily, winds dependent, in order to orient weapons system toward Tiefort Mt. and minimize risk in case of weapon discharge. When using runway 31, if possible turn the aircraft toward Tiefort Mt. prior to shutting down.

#### **14-18 MEDEVAC Procedures**

1. General. Rotational units are expected to evacuate casualties IAW their unit's SOP. The rotational unit chain of command is responsible for insuring that the MEDEVAC frequencies and procedures are known by all soldiers.

2. Unit Information. C/2916th Aviation (Air Ambulance) provides aeromedical evacuation and Weed Army Community Hospital, in conjunction with the NTC Fire Department, provides ground medical evacuation to all units training at the NTC for ACTUAL URGENT MEDICAL EMERGENCIES affecting the loss of life, limb, or eyesight. Requests for MEDEVAC HELICOPTER and use of NTC ground ambulance exchange/transfer points will be called directly to Fort Irwin Range Operations on FM frequency 38.90 (single channel/plain text), VHF 126.20, UHF 241.00, or NIPR (760) 380-3637/3878 using the NATO 9-line MEDEVAC request format including MIST. Requesting element will remain in contact with Range Operations until MEDEVAC is complete.

3. OC/Ts are trained in MEDEVAC procedures and will assist units experiencing difficulty requesting MEDEVAC using RCS Group 295. OC/T on-site will provide an initial report to Team 07 and perform life-saving measures with RTU medics. Ensure that a physician is requested if there is a possibility of a fatality. Secure site for possible investigation and establish the HLZ if the RTU is unable. Report status of MEDEVAC to TAFF and keep Team 07 informed of patient status. Team 07 will provide an overall report to the COG once the patients are evacuated. Team TAFF will send an NTC Safety Incident Report upon completion of Team 07 updates.

4. Helicopter Landing Zones. Pilots may reject LZ and land elsewhere. Remain available on specified frequency. Do not use ground guides to assist in landing aircraft. Sites should be as flat as possible. If "H" pad is nearby, use it. Pick an area that is free of large rocks, brush, commo wire, and barbed wire.

5. Use of smoke (red) is the preferred method of marking the LZ during daytime. Only pop smoke once requested by the pilot.

6. Use of twirling (buzz saw) Chemlite at the end of a 3 foot piece of rope is the preferred method of marking the LZ during night time. Use only orange, white, red, or IR Chemlites. Crews use NVGs on all night missions. Turn off all vehicle lights while aircraft is on approach. Only use a star cluster (red) upon request from the pilot.

<b>NATIONAL TRAINING CENTER HELICOPTER LANDING ZONES</b>		
<b>IDENTIFIER</b>	<b>DESCRIPTION</b>	<b>GRID LOCATION</b>
ASP	ASP HELIPAD	11S NU 29500 98050
BAB	BICYCLE LAKE ARMY AIRFIELD	11S NV 33140 03140
C2	C2 FACILITY HELIPAD	11S NV 47660 26920
CL	CHAH-E LANGFORD / GUBA HELIPAD	11S NU 35374 96974
ES	ERTEBAT SHAR / UJEN HELIPAD	11S NV 36770 11862
JDL	JAHEL DAR LAD-E / DEZASHAH HELIPAD	11S NV 21618 19455
LF	LIVEFIRE BUNKER HELIPAD	11S NV 46532 27614
LSA	LSA WARRIOR / GARDAKERT HELIPAD	11S NV 30465 01768
MIA	FOB MIAMI / NAJALABAN HELIPAD	11S NV 58821 05396
MPH	MAIN POST HELIPAD	11S NV 28440 02689
SDJ	SHARQ DARWAZA JAME'A / BARASU HELIPAD	11S NV 59162 15924
ST	SHAR-E TIEFORT / RAZISH HELIPAD	11S NV 44085 10079
ZUL	ZULU TOC HELIPAD	11S NV 49540 29360
<b>NTC GROUND AMBULANCE EXCHANGE/TRANSFER POINTS</b>		
AXP BICYCLE LAKE	MSR Bull Run light line (Barstow Road)	11S NV 31633 05139
AXP LANGFORD LAKE	Long Island light line (Langford Lake Road) IVO Building 851	11S NU 31662 97812
AXP GOLDSTONE	NASA complex (Goldstone Road & Pioneer Road)	11S NV 12207 13324
AXP PAINTED ROCKS	IVO Painted Rocks on Fort Irwin Road	

NTC MEDEVAC REQUEST CARD		
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <b>PRIMARY: SINGARS</b>            SC / PT 38.900 to Range Operations         </div> <div style="width: 30%;"> <b>SECONDARY: RCS</b>            Group 295 to Range Operations         </div> <div style="width: 30%;"> <b>CONTINGENCY: PHONE</b>            380-760-3878 OR 3673         </div> </div>		
LINE	ITEM	
1	Location of Pickup Site	
2	Radio Frequency, Call Sign, Suffix	
3	No of Patients by Precedence	
	A = Urgent, B = Urgent-Surg, C = Priority, D = Routine, E = Convenience	
4	Special Equipment Needed	
	A = None, B = Hoist, C = Extraction equipment, D = Ventilator	
5	No of Patients by Type	
	L = Litter, A = Ambulatory	
6	Number and type of Wound, Injury, Illness	
7	Method of Marking Pickup Site	
	A = Panels, B = Pyrotechnic signal, C = Smoke Signal, D = None, E = Other	
8	Patient Nationality and Status	
	A = US military, B = US civilian, C = Non-US mil, D = Non-US civilian, E = EPW	
9	Terrain Description (Peacetime)	
	Include details of terrain features in and around proposed landing site If possible, describe the relationship of site to a prominent terrain feature ( lake, mountain, tower)	
10	MIST= Mechanism, Injuries, Signs, Treatment	
	Mechanism - (What caused the injury)	
	Injuries - (What are the casualties injuries)	
	Signs - Blood Pressure	
	Pulse	
	Respirations	
	SPO2 (Pulse Ox)	
	Treatment Given to include Medications	



# **National Training Center EXOP, ANNEX A AFTER ACTION REVIEW STANDARDS**

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**OCTOBER 2018 (FY19)**

## **Annex A Administrative**

- A-1 Overview**
- A-2 OC/T Standards of Conduct**
- A-3 Instrumentation Capabilities**
- A-4 Preparation for an AAR**
- A-5 Informal AAR**
- A-6 Formal AAR**
- A-7 TAFF and building the TF/BDE AARs**

### **A-1 Overview**

1. An AAR is a professional discussion of a training event that enables Soldiers/units to discover for themselves what happened and develop a strategy for improving performance. Facilitators provide an overview of the event plan (what was supposed to happen) and facilitate a discussion of what actually happened during execution. This leader's guide supports the Army training doctrine in ADP 7-0 and ADRP 7-0 (Training Units and Developing Leaders) and FM 7-0 (Train the Force). The concepts and processes in this Chapter are applicable to all units and are based on the lessons contained in the Leader's Guide to After- Action Reviews (AAR) dated December 2013.

2. Unit's arriving expect a dynamic training experience with candid, relevant feedback grounded in current doctrine. OC/T's must be focused on facilitating focused discussion to identify areas of improvement.

3. AARs should follow the same four steps:

- a. What was supposed to happen
- b. Establish what happened – This Annex focuses on this step
- c. Determine what was right or wrong with what happened
- d. Determine how the task should be done differently next time

### **A-2 OC/T Standards of Conduct**

1. OC/T's uniform will meet the following standards when interacting with the RTU:

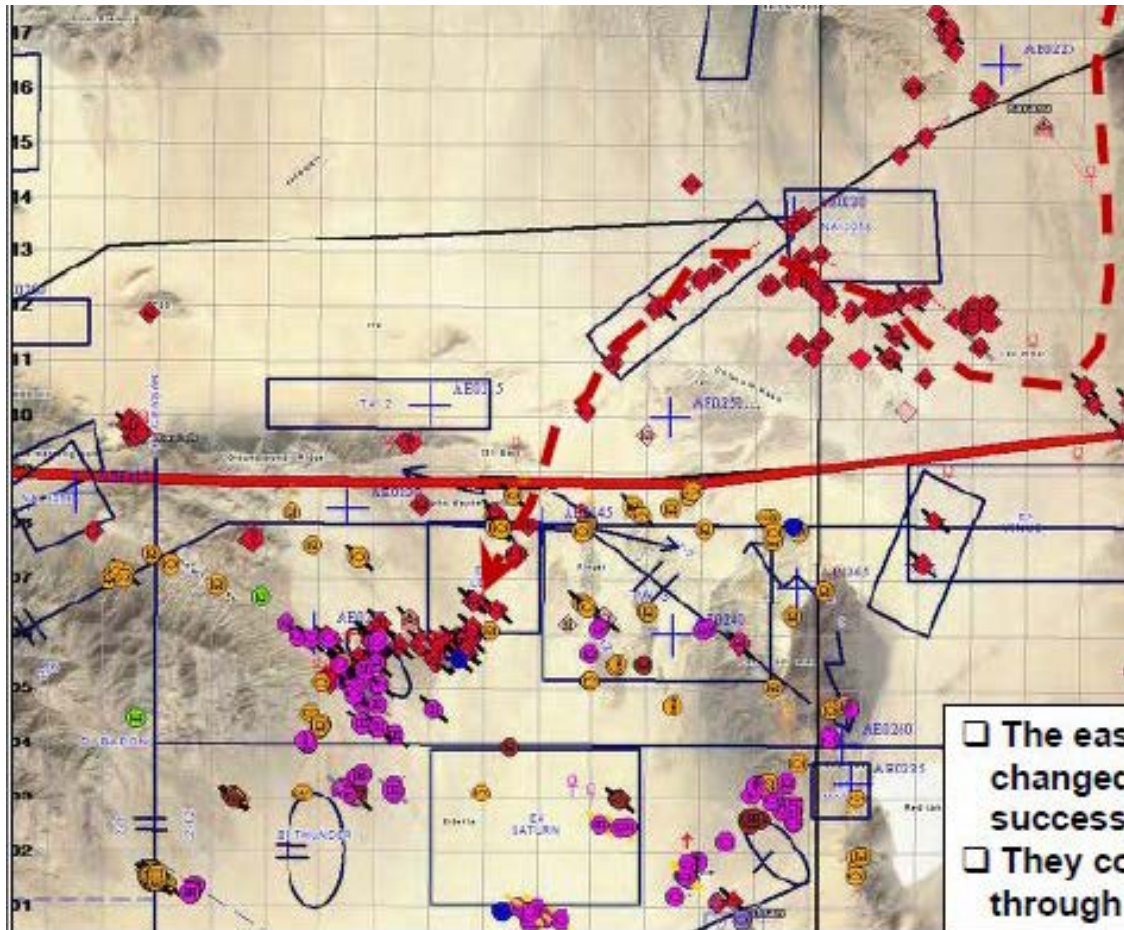
- a. Kevlar, LBV, Eye Protection and Gloves are minimums.
- b. RCS radio will either be silenced or used with an earpiece.
- c. Truck mounted radio speakers' should be silenced to ensure scenario integrity.
- d. No profanity, tobacco, or eating should be conducted while engaging RTU counterparts.

2. Remove protective gear and RCS radio prior to engaging in an AAR informal or formal. The discussion requires eye-to-eye contact to facilitate communication and build the trust relationship necessary to share candid opinions on performance of the unit.

3. The OC/T owns the onus of communicating what should have happened within the Army's doctrinal framework. OC/T's will inherently pull from personal experience in their duties, but should make every attempt to ensure doctrinal principles are re-enforced.

### A-3 Instrumentation Capabilities

1. RTU Performance Metrics against expected outcomes.
2. Doctrinal References.
3. “A Way” Teach Slides with TTP’s and Best Practices.
4. Commo Cuts from the RTU’s radio nets.
5. CTC-IS Screenshots and Playback video of the Battle focused on a selected unit.



### A-4 Preparation for an AAR

1. Blackhorse Leaders #1 Priority after securing men, weapons, and equipment is to participate and provide feedback from the OPFOR perspective.
2. Focused attention must be given to scheduling the AARs to ensure each echelon knows what resources are available to prepare and execute.
3. Scheduling AAR windows starts with planning SOBE windows and continues through confirming locations while reading SOBE instructions. The following must be considered when planning AAR timelines:
  - a. BDE Consolidated AARs – normally occur twice a rotation:



- (1) BN/BDE CDR AAR – a formal AAR facilitated by the COG for BN/BDE CDR exclusively
- (2) Senior NCO AAR – a formal AAR facilitated by Outlaw 40 for all 1SG and above.

**b. BN/TF AARs**

- (1) TF CMD AAR - executed at least twice during the rotation with instrumentation tied to an AVI Site or AAR Van.
- (2) CP AARs – executed by Team 02/03 at the Main or Alternate CP. Usually occurring off cycle from TF CMD AARS.

**c. Platoon / Company AARs**

- (1) Formal AARs – OC/T's will make every effort to provide each Company x 2 instrumented AARs per rotation. Priority is given to Maneuver Companies and Fires Batteries.
- (2) Informal AARs occur after every phase to include RSOI. Priority is for Platoon AARs to occur prior to Company AARs.

**A-5 Informal AAR**

1. Classically defined by a face-to-face discussion reviewing notes from a green book focused on the unit's training objectives. Care must be taken to ensure the AAR does not turn into a checklist completion review, but is a professional discussion of specific event(s) based on training objectives, performance measures and the commander's intent.
2. Platoon "Hot washes" are an informal AAR conducted after a battle phase utilizing the OC/T's personal notes, TAFF observations and a review of the CATS tasks executed by the platoon.
3. Company "Hot washes" are the norm for most battle phases deconflicted against Platoon and Higher Headquarters' AARs.

**A-6 Formal AAR**

1. Defined as a prepared production usually associated with greater than 6 hours to prepare and lasting no more than 2 hours. Defining characteristic of a formal AAR is the inclusion of training aids.
2. Equipment can include but is not limited to a Tri-fold Board, Projection Terminals, Wired Trailers, Audio Visual Instrumentation sights.
3. External leaders and external OC/T led discussion focusing on results of targeted collection efforts.
4. TF Formal AARs will be executed at least twice during a rotation.

**A-7 TAFF and building the TF/BDE AARs**

1. The Tactical Analysis and Feedback Facility is designed to capture performance of the unit through its instrumentation system; data collection from OC/Ts; and access to external data sources and agencies. The TAFF's primary mission is to provide the TF and BDE level staff pointed feedback on their performance – "The Proof".

**2. Take Home Packets are designed to provide the RTU with consolidated AAR products to drive home station training and lesson learned adoption. The following items can be included in the unit's take home packet:**

- a. Formal TF AARs**
- b. Sanitized Photos ensuring no spillage occurs**
- c. Audio/Visual Products produced on the RTU's behalf**
- d. Executive Summary to verbalize training highlights and training deficiencies to help guide future planning efforts.**



# **National Training Center EXOP, ANNEX B Live Fire Operations**

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**OCTOBER 2018 FY19)**

## **Annex B - Live Fire Operations (June 2018)**

B-1	<u>Live Fire Operations at the National Training Center</u>
B-2	<u>Live Fire General Requirements</u>
B-3	<u>Live Fire Training Requirements</u>
B-4	<u>Movement and Maneuver</u>
B-5	<u>Fires</u>
B-6	<u>Protection</u>
B-7	<u>Sustainment</u>
B-8	<u>Rotary Wing and UAS Operations</u>
B-9	<u>Close Air Support</u>
B-10	<u>Intelligence</u>
B-11	<u>EA/EW Operations</u>
B-12	<u>Miles Engagements</u>
B-13	<u>Live Fire Targets</u>
B-14	<u>Weapon Safety Posture (WSP) and Weapons Control Status (WCS)</u>
B-15	Attachments
	1. Live Fire Waiver Request MFR
	2. Live Fire Waiver Supporting Spreadsheet
	3. Decertification MFR Format
	4. Brigade Approved Live Fire Waiver
	5. Approved/Current FY Deviations

### **References:**

1. AR 385-63 (Range Safety), January 2012
2. DA PAM 385-63 (Range Safety), April 2014
3. DA PAM 350-38 (Standards in Weapons Training), November 2016
4. DA PAM 385-30 (Risk management), December 2014
5. FM 3-09 (Field Artillery Operations and Fire Support), April 2014
6. FM 3-22.3 (Stryker Gunner), March 2006
7. TC 3-04.45 (Combat Aviation Gunnery), January 2014
8. TC 3-09.8 (Field Artillery Gunnery), November 2013
9. TC 3-20.0 (Integrated Weapons Training Strategy), June 2015
10. TC 3-20.21-1 (Individual and Crew Live Fire Prerequisite Testing), July 2010
11. TC 3-20.31 (Training and Qualification, Crew), March 2015
12. TC 3-20.31-1 (Gunnery Skills Test), November 2015
13. TC 3-20.33 (Training Qualification and Mortars), August 2017

14. TC 3-22.9 (Rifle and Carbine), May 2016
15. TC 3-22.23 (M18A1 Claymore Munition), November 2013
16. TM 3-34.82 (Explosives and Demolition), March 2016
17. ATP 3-21.8 (Infantry Platoon and Squad), April 2016
18. ATP 3-90.5 (Combined Arms Battalion), February 2016
19. ATP 3-37.34 (Survivability Operations), June 2013
20. TC 3-21.90 (Mortar Platoon Collective Training), August 2013
21. TC 3-20.33 (Training Qualification and Mortars), August 2017
22. FORSCOM Regulation 350-50-1, January 2010
23. AFI 11-214 (Air to Ground Joint Live Fire Exercise Procedures),
24. JP 3-09 (Joint Fires Support), December 2014

### **B-1 Live Fire Operations at the National Training Center**

**1. Governing Regulations.** Live Fire exercises at the NTC are tactical operations conducted IAW the 52nd ID OPOD, AR 385-63 MAY11, DA Pam 385-63 APR14, DA Pam 350-38, NOV16 and this EXOP. Rotational units are required to apply Surface Danger Zones (SDZs) and restrictions IAW DA PAM 385-63, APR14 for all weapon systems during all live fire events. NTC Operations Group provides rotational units with deviations from requirements directed in DA PAM 385-63 as approved by the Commander, National Training Center, for use during planning; consult the unit's respective OC/T team and the Dragon Live Fire Team. Rotational commanders are responsible for employing necessary measures and controls to mitigate tactical and accidental risk IAW DA PAM 385-30, DEC14.

**2. General.** The NTC Live Fire is a tailorable and scalable training exercise based on the training objectives set by the rotational unit Senior Trainer and the FORSCOM Commander. Exercises may incorporate numerous tactical tasks against a dynamic opposing force in a live environment with realistic battlefield effects. NTC Live Fire is NOT a traditional range. The guidelines in the NTC EXOP apply during Live Fire operations as the rest of the rotation unless specified in this annex. This SOP encourages the integration of joint fires and capabilities organic to a BCT or units attached to the brigade. Exercises are capable of employing weapon systems organic to and supporting the BCT to include Joint Fires. Rotational unit commanders are responsible for planning, preparing, and executing operations during live fire. Rotational unit commanders are also responsible for meeting minimum training requirements for the level of exercise their units conduct as directed in this document and per recent STRAC, IWTS, as well as applicable doctrinal requirements.

**3. Live Fire Team Mission.** The Live Fire OC/T Team (Dragon Team) provides oversight for NTC live fire operations and is the final authority for the safe execution of the operation. Adherence to all prerequisite events is the responsibility of the embedded Dragon OC/T with the training unit and the unit's respective OC/T team. The embedded Dragon OC/T will provide recommendations to the OC/T Team 07 to enable the training unit's ability to accomplish their training objectives and within the confines of the exercise scenario. The embedded Dragon OC/T will verify with the respective OC/T

team that the RTU executes fit-to-fight pre-combat checks (B-2.6.). He will then provide his report to Zulu TAC.

## **B-2 Live Fire General Requirements**

**1. General.** Rotational unit commanders are responsible for ensuring compliance with all requirements and associated regulations during NTC live fire operations. **At all times during live fire, commanders will maintain accountability and control of all personnel and equipment.** Commanders are also responsible for ensuring Soldiers maintain appropriate personal protective equipment (PPE) posture. NTC OC/Ts serve as a supporting effort to unit leadership in executing safe operations. Units that lose communications with higher headquarters will immediately halt, cease fire, and ensure all weapons systems are in both mechanical and electrical safe until re-established communications.

**2. Mandatory Briefings.** Before live fire training at the NTC, select rotational unit personnel will attend the following briefings:

**a. Leaders Training Program (LTP) Brief.** Dragon Team provides a brief to rotational unit leaders during the Leader Training Program (LTP). The recommended audience is all Brigade Combat Team and Battalion-level Commanders, Command Sergeants Major, Operations Officers (S3s), Operations Sergeants Major, Fire Support Officers and Master Gunners. The purpose of the briefing is to orient units to the NTC Live Fire operational environment and assist unit planning and preparations.

**b. Master Gunner In-Brief.** The Dragon Team conducts an in brief for rotational unit Master Gunners (MG) at 0900 hours on RSOI 1 at building 599 in the Dragon Team conference room. Attendees include unit BDE and BN/SQDN Master Gunners as well as BDE OPS SGM. The meeting covers the requirements for live fire operations IAW DA PAM 350-38, applicable weapon system regulations, and the NTC EXOP. Specific topics include LFAST/zero, machine gun optics, availability of ranges, EXOP live fire waiver requirements. Unit Master Gunners will discuss the certification status of dismounted unit tasks and Battle Drills (e.g., Enter and Clear a Room, Enter a Trench to Secure a Foothold, etc.). Master Gunners must bring a draft and digital copy of the unit's live fire waiver documents to this meeting.

**c. MANDATORY RSOI Fires and Effects Brief.** The Fires and Effects Brief provides the rotational unit during RSOI 02-04 from 0630-0800 in vicinity of the RUBA by the Dragon Team OC/Ts. Unit commanders must ensure that ALL rotational unit personnel executing live fire or operating in the live fire area during the rotation must attend the Fires and Effects Brief. The purpose of the brief is to convey live fire safety, EXOP requirements, and to demonstrate the targetry and weapons effects used in live fire. The briefing location is located at 11S NV 3107 0154. Rotational units coordinate with the covering OC/T team for specific dates and times during RSOI. Eagle Team will conduct an Aviation Fires and Effects Brief to aviation task force.

**3. Deliberate Risk Assessment.** Per DA PAM 385-30, DEC14, rotational unit commanders must provide a detailed and comprehensive DD Form 2977, Deliberate Risk Assessment Worksheet (DRAW), to their covering OC/Ts for submission to Live Fire OC/T Team (Dragon) before the execution of live fire operations. The DRAW must include specific controls for identified hazards during live fire operations and authorized by the leader who holds the level of authority associated with the level of risk.

**4. Personal Protective Equipment (PPE).** Required PPE for all Soldiers conducting live fire training or operating in the live fire area as per DA PAM 385-63, APR14, CH 2, TBL 2-2. At a minimum, this includes body armor (with DOD issued plates), ballistic helmet, APEL approved eye protection, gloves,

and hearing protection as required. All Soldiers must deploy to the NTC with body armor per CTA 50-900. Soldiers must wear Body Armor with DOD issued plates: Plates stating “Not for live fire” are unauthorized and plates stating “training plates” are authorized during all live fire events and in all live fire areas. Combat Crewmen Ballistic vests are authorized inside of armored vehicle crews as directed by unit SOP. Approved for the use of the IOTV/IBA with ballistic liner minus the issued plate in place of Crewman Ballistics Vest. However, upon dismounting the vehicle to assault onto an objective will require the service member to replace his Crewmen Ballistic Vest with the IBA and approve plates.

**5. MILES.** All vehicle and personnel MILES systems must be functional at all times to participate in live fire operations. This requirement applies to all vehicles, squads, and personnel forward of the LD or in the unit's main defensive area. The MILES kill capability is used both as a safety control measure and to apply battlefield effects. Nonfunctioning MILES prevents the vehicle from departing the TAA. Direct fire weapons and mortars are not authorized to fire overhead of troops IAW DA PAM 385-63, APR14. This restriction includes MILES systems. Vehicle crews and personnel will react to MILES kills or effects as in force on force operations.

**a. Combat Vehicles.** All combat vehicles must be capable of being tracked and killed in the instrumentation system. Connect the MILES to the combat vehicle's intercom system so the vehicle crewman can hear an *AUDIO TONE* in the CVC. When heard or the CVKI light flashes continuously indicating a vehicle kill, the crew will: (1) immediately cease fire, (2) stop the vehicle, (3) clear all weapons and stand by for an OC/T to adjudicate casualties IAW NTC EXOP procedures.

**b. Dismounted Operations.** All dismounted elements must maintain a functioning and tracking MIC vest during operations to include all dismounted observation posts (OPs), dismounted mortar firing points, and squads conducting urban, trench, or other dismounted operations.

**c. MILES in Lieu of Live Ammunition.** In the absence of issued anti-tank munitions, the majority of targets are equipped with MILES sensors to enable rotational personnel to engage. Requirements for employment of replicated anti-tank systems are as directed in the NTC EXOP. OC/Ts will not raise targets to test RTU miles. Units will boresight and confirm serviceability within Critter Teams and Miles Contact Teams. Units may engage targets with the following weapons systems with effect using MILES during live fire:

(1) TOW (code 07)

(2) Javelin (code 09)

(3) Viper / AT-4 (code 15)

(4) Stinger (code 26)

**d. MILES Contact Teams.** Units coordinate for MILES contact team support through covering OC/T team. Unit OC/T teams are responsible for requesting MILES contact team support and ensuring safe arrival to the desired location.

**6. Fit-to-Fight.** Before executing live fire operations, units must report “Fit-to-Fight” posture to covering OC/Ts. The training unit will remain in the appropriate protection posture as per their chain of command. When an area (1-10) is red, all OC/Ts will remain in the appropriate protective posture. Any deviation requires the approval from the COG. Minimum fit-to-fight posture standards include:

- a. Shared understanding has been achieved two levels down through deliberate and detailed rehearsals.
- b. 100% accountability of all Soldiers, weapons, and equipment.
- c. No Soldiers forward of the Forward Line of Troops (FLOT).
- d. All blank ammunition downloaded, BFAs removed.
- e. All Soldiers in required PPE.
- f. ESAPI Plates stating “Not For Live Fire” are unauthorized. Plates stating “Training Only” are permitted.
- g. All MILES for participating vehicles, Soldiers, and squads (MIC) operational.
- h. Deliberate Risk Assessment Worksheet (DRAW), DD Form 2977, at company and battalion levels updated, complete and signed by appropriate authority.
- i. All FSCMs matched and posted in AFATDS (to include all participating firing platoons, all Fire Direction Centers (FDC), and all Fire Support Elements (FSE)) and Mortar Ballistic Computers (M32) in mortar platoon FDCs.
- j. All MET data is current for indirect and direct weapon systems.

**7. Live Fire Screening Accuracy Test (LFAST) and Zero.** Unit master gunners are responsible for all LFAST and zero planning, preparation, and execution both during RSOI and training days. Units may coordinate with Fort Irwin Range Operations to conduct LFAST and Zero during RSOI at the Pre-Deployment Site Survey (PDSS). Rotational units must coordinate for required personnel (OIC, RSO, etc.) to attend the Fort Irwin Range Safety Class through Range Operations before signing for the designated range.

**a. LFAST/Zero Requirements.** LFAST/Zero are required for Tank, Bradley, and MGS platforms at the NTC. Rotational units will conduct LFAST during RSOI per rotational unit commander's guidance, resources, and priorities of work. Only vehicles that experience fire control system malfunctions or require the replacement of fire control system Line Replaceable Unit (LRU) during the rotation or those that did not complete LFAST during RSOI can LFAST/Zero after RSOI. Units coordinate LFAST requirements after RSOI through their covering OC/T teams.

**b. Zero (All other platforms.** Stryker RWS/mounted machine gun variants and other mounted machine gun systems can zero and test fire during RSOI if coordinated by the rotational unit, but it is not a requirement for the NTC.

**c. Make-up:** LFAST/Zero make up for RTU will be on TD11.

**d. Memorandum for Record ETP:** Any vehicles that do not meet the requirement to LFAST and Zero will be required to submit a Memorandum for Record requesting an Exception to Policy (ETP) to allow them to fire during the Live Fire Exercise. The only requirement to request the ETP is that the vehicle has been boresighted and the crew is qualified to fire (with or without a waiver).



## **B-3 Live Fire Training Requirements**

**1. General.** NTC has a dynamic environment for live fire training, some requirements and stipulations for live fire may exceed those detailed in associated doctrinal manuals, regulations, and guidance. It is the training units responsibility to reference each section of this annex to ensure proper identification of all requirements and restrictions.

**2. Live Fire Waivers.** Units who do not meet prerequisites for live fire operations as detailed in this EXOP may submit a waiver for an exception to policy to meet training objectives. The approval authority for all live fire waivers is the Commander of Operations Group (COG), NTC. Submission and processing of waivers are a rotational unit responsibility. Dragon Team OC/Ts provide example waiver documents to the rotation unit during the Pre-Deployment Site Survey (PDSS).

**a. Citations.** All waivers must identify the specific NTC EXOP directive or requirement that the unit is requesting to waive. Waivers must also include appropriate doctrinal references that apply. Waivers include a thorough discussion of the request for the waiver and all mitigation measures employed by the chain of command to mitigate risk. Mitigation measures include but are not limited to specific pre-rotational training conducted, employment restrictions or leader tasks. Waivers must be specific to the Soldier, crew or unit as applicable. The POC for the waiver is the Battalion/Squadron S3 and the signature block is the Battalion/Squadron Commander.

### **b. Submission Process:**

(1) 0900 RSOI 1, the BCT Master Gunner brings the draft and digital copy of waivers to the MG in-brief for review and immediate feedback.

(2) NLT 1700 hours RSOI 1, the SQDN/BN submits the waiver to their respective Dragon Team representatives for review, and recommendation.

(3) NLT 1700 RSOI 2 the Team 07 has reviewed, made recommendations, and signed the waiver(s), the OC/T Team will return it to the training unit (SQDN/BN) Master Gunner. The training unit will submit the waiver(s) to their BCT Master Gunner for the BCT CDR's review, recommendation, and signature.

(4) NLT 1500 RSOI 3 the BCT CDR has reviewed, made recommendations, and signed the waiver(s), the BCT consolidates all waivers, and the BCT MG submits the waiver(s) to Dragon Team NLT 1700 RSOI 3. (POC is Dragon 40, building 599; phone 760-267-6752).

(5) Dragon Team will process the waivers through Operations Group Safety, 52<sup>nd</sup> ID G3, and to the Commander, Operations Group, NTC for approval/disapproval of the BCT's waivers.

**c. Format Guidance.** The waivers are submitted using a standard MFR format and enclosed Excel Spreadsheet. Route the MFR from the rotational Battalion/Squadron Commander through the following:

(1) Covering OC/T Senior Trainer (Team 07)

(2) Rotational BCT Commander

(3) Live Fire Team Senior Trainer (Dragon 07)

#### **(4) Commander, Operations Group (COG)**

**d. Final Approval.** The finalized approved waiver, signed by the COG, will be provided to the respective covering Dragon Team representative, the Critter Team 07, the BN CDR, and the BCT CDR.

### **3. Decertification and Recommendation Process.**

**a.** An OC/T can recommend the decertification/exclusion of an individual Soldier, crew, or unit preventing the participation during the Live Fire Exercise for a single incident of fratricide during Force-on-Force or for any instance of blatant disregard for safety and/or negligence. Submit the recommendation for decertification through the Critter Team 07, through Dragon 07, to the COG, who is the approving authority for decertification.

**b.** Decertify an individual Soldier or vehicle crew demonstrating blatant disregard for safety and/or negligence from conducting the Live Fire Exercise if they are responsible for two or more incidents of fratricide during Force-on-Force or for repeated behavior demonstrating blatant disregard for safety and/or negligence. Submit the decertification through the Critter Team 07, through Dragon 07, to the COG, who is the approving authority for decertification.

**c. Memorandum for Record (Attachment 3).** Covering OC/T teams that are recommending any individual Soldier(s) or vehicle crew(s) for decertification will submit a decertification recommendation memo in MFR format with the individual(s) name(s) and battle roster number(s) or vehicle crew identifier(s) along with decertification justification to Dragon 07 NLT TD 09 at 1800 for review and approval by the COG NLT TD 10. Please see the included attachment for the example MFR format. The COG is the final approval authority for decertification.

### **4. Individual and Crew-Served Weapons (TC 3-20.0, CH 4, Gate 4, 4-1, JUN15).**

**a. General.** All Soldiers and units planning to conduct live fire operations at NTC must have demonstrated proficiency and conducted qualification per established doctrinal standards with individual, crew-served, and combat platform weapons systems as well as Warrior Tasks and Battle Drills before executing that task during the live fire at the NTC.

**b. Individual Weapons.** All Soldiers that train under live fire conditions must meet the qualification standard outlined in TC 3-20.0, Table 4-1, JUN15 and DA PAM 350-38 (STRAC, FY17) and the most recent Army publication for their assigned weapon.

**c. Crew Served Weapons.** (M240B, M2 .50 Cal, MK19). All crews must meet qualification standards outlined in the most updated publication within nine months (12 months for RC/NG) of the unit's NTC Rotation. If employing a weapon system on a vehicle mount, but the crew qualified on a ground mount, a live fire familiarization exercise must be conducted utilizing the vehicle mount before NTC live fire. Units not equipped with the M2A1 .50 Caliber Machine Gun must set headspace and timing IAW the appropriate TM.

**d. Short Range Marksmanship.** In addition to individual weapon qualification, all Soldiers firing during room clearing operations must have completed short-range marksmanship (SRM) or close quarters marksmanship (CQM) training. Conduct this training per an approved home station program (e.g., local 350-series regulation) or TC 3-22.9, Rifle and Carbine, JAN17 within the last nine months.

Units that do not meet this requirement must request a waiver, use alternate training methods (such as dry/blank reflexive fire drills) to familiarize Soldiers with SRM techniques, and coordinate for a SRM range prior to live fire execution.

**e. Claymore Mines.** As per DA PAM 350-38 (STRAC, FY17), any firing Soldier must emplace, arm, and disarm an inert or live claymore mine within 12 months (RC&AC); with either electrical (M57) firing device K139 of nonelectrical with Shock Tube J008 in command detonation mode. Each squad must also have emplaced, armed, and fired a live claymore mine to standard during a Squad or Platoon LFX within nine months (12 months for RC/NG) before executing the unit's NTC rotation.

**f. Hand grenades.** Soldiers must have negotiated a hand grenade course within nine months (12 months for RC/NG) IAW DA PAM 350-38 (STRAC, FY17) and thrown a live grenade within one year.

**g. Demolitions: Construct a Modernized Demolition Initiator (MDI)/Detonating Assembly.** Demolitions training standards. Ninety percent of the assigned Soldiers with a SM requirement must have constructed demolition firing systems and primed explosives for live fire to SM standards (tasks: Construct an MDI Detonating Assembly, Prime Explosives with MDI and Prime Explosives with Detonating cord) within the past 6 months (AC). For RC eighty percent of assigned Soldiers with a SM requirement must have constructed demolition-firing systems and primed explosives for live fire to SM standards every 12 months.

**(1) Create a Crater Obstacle using Explosives:** Shaped Charge/Cratering charge standard. All Combat Engineer Squads must have employed inert and live demolitions to create a three-hole hasty road crater to collective task standards (tasks: Create a Crater Obstacle with Explosives, and Disable Lines of Communication (LOC) with Explosives) within the past 6 months and for RC every 12 months.

**(2) Create a Lane through an Obstacle Using Explosive Techniques.**

**I) Bangalore torpedo standard.** All Combat Engineer Platoons must have employed a live Bangalore torpedo to collective task standards (task: Create a Lane through an Obstacle Using Explosive Techniques to Breach Wire Obstacles) within the past 6 months and for RC every 12 months.

**II) MICLIC standard.** The MICLIC strategy applies to units assigned MICLICs by TO&E.

- a.** Each squad assigned a MICLIC must employ it to standards (Task: Create a Lane Through an Obstacle Using Explosive Techniques) using a Live Rocket / Inert Tub at home station annually.
- b.** Each engineer platoon will employ one assigned MICLIC to standards (task: Create a Lane through an Obstacle Using Explosive Techniques) using a Live Rocket / Inert Tub at home station annually.

**III) ABV standard (MILIC)**

Combat engineer companies must have employed the MICLIC (task: Create a Lane Through an Obstacle Using an Assault Breacher Vehicle (ABV) using six inert line charges at home station within the past 12 months.

**IV) APOBS standards.** Each Combat Engineer squad must have employed an Inert APOBS to drill task standards (task: Create a Footpath through an Obstacle with an Antipersonnel Obstacle Breaching System (APOBS) using inert APOBS three times annually at home station for AC and two times for RC units.

### **(3) Emplace a Tactical (Scatterable) Minefield, (MOPMS or VOLCANO).**

I) MOPMS standard. All Combat Engineer squads with MOPMS assigned must have participated in the installation and recovery of the MOPMS Training Dispenser (M136) to operator's manual standards (task: Emplace a Modular-Pack Mine System (MOPMS) disrupt or fix minefield) within the past 6 months.

II) VOLCANO standard. Ninety percent of the Soldiers assigned in units with a VOLCANO and Soldier's Manual requirement must have conducted the DCU-BIT Test to operator's manual standards within the past 6 months.

The Platoon and/or section must have successfully employed the VOLCANO with the M88 and the M89 training device to standards (task: Emplace a VOLCANO Minefield) within the past 6 months. M88s are fired from the four corners only; M89s fill all other positions.

### **(4) Emplace a munitions field (Networked Munitions)**

All Combat Engineer squads and platoons must have met collective task standards (task: Install/recover a hasty protective field, Emplace a munitions field (Network Munitions/SPIDER) using inert munitions) every 12 months.

## **h. Anti-Armor Munitions.**

**(1)** After clearing the Rear Danger Area, the firing Gunner notifies the OC/T and requests permission to fire the munition. Before granting permission to fire, the Soldier and his OC/T verifies that the surface danger zone is clear. Once complete, the OC/T grants permission to fire. The firing of the weapon is dependent upon an OC/T granting permission.

**(2) AT4.** Firing Soldiers must have qualified with sub-caliber munitions within nine months (12 months for RC/NG) of the units NTC rotation.

**(a)** All personnel and vehicles will not be within the Rear Danger Area, 100m and 90 Degrees (Danger Area and Caution Areas). The AT4 will execute hull and bunker engagements only to avoid reducing the risk of dud production.

**(3) Javelin.** Firing Soldiers must have conducted digital gunnery with a passing score and maintain quarterly training or ASI qualified Javelin trainer.

**(a)** All personnel and vehicles will not be within the Rear Danger Area, 100m (Primary Danger Area, Caution Areas 2 and 3). The Javelin will execute hull and bunker engagements only to avoid reducing the risk of dud production.

**(4) TOW.** ITAS gunners must have completed the M41 Improved Target Acquisition System (ITAS) Gunnery Table 1 through 6 within the last six months. Bradley crews complete live fire gates in BATS and complete TOW engagements during Table 2, Digital Range.

**(a)** All personnel and vehicles will not be within the Rear Danger Area, 75m (Primary Danger Area, Caution Areas 1, and 2). Only authorized individuals allowed in Area H (1600m behind the TOW firing line) will OC/Ts required for the safe employment of the weapon and the firing crew. The OC/T must be in a protected site, i.e., behind an earthen berm, tank ditch, or last major terrain feature IAW with DA PAM 385-63, CH 7-1a(4), CH 7-1b(3), APR14. The TOW will execute hull and bunker engagements only to avoid reducing the risk of dud production.

**i. Other.** For any weapons systems not listed above, the Soldier or crew must be qualified IAW DA PAM 350-38 (STRAC, FY17) standards or applicable doctrine.

**j. Night Live Fire.** Soldiers conducting live night fire must meet night qualification requirements by appropriate doctrine **using the night vision optics, thermals, and lasers they intend to use at NTC.**

## **5. Combat Vehicles (TC 3-20.0, Gate 3 (Crew), Gate 2 (PLT), Gate 1 (CO CALFEX), JUN15).**

**a. Crew Platforms (TC 3-20.0, Tier 3).** Identify Crew Platforms as the following series: Abrams, Bradley, Stryker, Motorized Scout, HMMWV Gun Trucks (ITAS). For the Abrams, Bradley, MGS, and ATGM Stryker, the NTC designates a crew as the Vehicle Commander and the Gunner. For the Stryker variants (ICV, RV, CV, FSV, ESV), the NTC designates a crew as the Vehicle Commander, who serves as the gunner.

### **b. Tanks.**

**(1)** All crews (TC/gunner combinations) must qualify together for Crew Qualification (TC 3-20.0, Table VI, Gate 3). Within 9 months of TD 14.

**(2)** All platoons must qualify/certify on Gate 2, Platoon Qualification (TC 3-20.0, Table VI, Gate 2) to participate in CO CALFEX and above Live Fire Operations. A qualified platoon is a platoon leader or platoon sergeant with a minimum of one subordinate leader that together have successfully completed Table VI including the tactical maneuver tasks selected by the commander.

**(3)** All companies must qualify/certify on Gate 1, CO CALFEX (TC 3-20.0, Gate 1) to participate in Task Force or higher level Live Fire Operations. A qualified company/troop is a commander and 66 percent of his qualified platoons that have successfully completed Table VI, CALFEX or CLFX, including the tactical maneuver tasks selected by the commander.

**(4)** Minimum tank crew manning is four (4) 19Ks. Non-19K substitute loaders or drivers must have successfully passed Gunnery Skills Test IAW TC 3-20.31-1 and require a written waiver approved by the Commander of Operations Group, NTC.

### **c. Bradley Fighting Vehicles.**

**(1)** All crews (BC/gunner combinations) must qualify together for Crew Qualification (TC 3-20.0, Gate 3). Within 9 months of TD 14.

**(2)** A Scout section must qualify/certify on Gate 2, Section Qualification or Platoon Qualification (TC 3-20.0, Gate 2) to participate in CO CALFEX and above Live Fire Operations. A qualified scout section is the identified section sergeant with a minimum of one subordinate leader that has successfully completed Table VI including the tactical maneuver tasks selected by the commander.

**(3)** All platoons must qualify/certify on Gate 2, Platoon Qualification (TC 3-20.0, Gate 2) to participate in CO CALFEX and above Live Fire Operations. A qualified platoon is a platoon leader or platoon sergeant with a minimum of one subordinate leader that together have successfully completed Table VI including the tactical maneuver tasks selected by the commander.

(4) All companies must qualify/certify on Gate 1, CO CALFEX (TC 3-20.0, Gate 1) to participate in Task Force or higher level Live Fire Operations. A qualified company/troop is a commander and 66 percent of his qualified platoons that have successfully completed Table VI, CALFEX or CLFX, including the tactical maneuver tasks selected by the commander.

(5) Minimum manning is three MOS Qualified crew members (BC, gunner, and driver). Non-MOS specific substitute drivers must have successfully passed Gunnery Skills Test IAW TC 3-20.31-1 and require a written waiver approved by the Commander of Operations Group, NTC.

#### **d. Stryker Family of Vehicles.**

(1) Stabilized Platforms (MGS, ATGM) and unstabilized platforms (ICV, RV and remote weapon station (RWS) –equipped vehicles) must qualify together for Crew Qualification (TC 3-20.0, Tier 3). Within 9 months of TD 14.

(2) If Vehicle Commander is the Gunner and has completed Gate 3, Table VI; then the crew is qualified.

(3) A Scout section must qualify/certify on Gate 2, Section Qualification, or Platoon Qualification (TC 3-20.0, Gate 2) to participate in CO CALFEX and above Live Fire Operations. A qualified scout section is the identified section sergeant with a minimum of one subordinate leader that has successfully completed Table VI including the tactical maneuver tasks selected by the commander.

(4) All platoons must qualify/certify on Gate 2, Platoon Qualification (TC 3-20.0) to participate in CO CALFEX and above Live Fire Operations. A qualified platoon is a platoon leader or platoon sergeant with a minimum of one subordinate leader that together have successfully completed Table VI including the tactical maneuver tasks selected by the commander.

(5) All companies must qualify/certify on Gate 1, CO CALFEX (TC 3-20.0) to participate in Task Force or higher level Live Fire Operations. A qualified company/troop is a commander and 66 percent of his qualified platoons that have successfully completed Table VI, CALFEX or CLFX, including the tactical maneuver tasks selected by the commander.

(6) Minimum manning for different variants is IAW DA PAM 220-1, Defense Readiness Reporting System, NOV11.

**e. Training Requirements for All Combat Vehicle Crews.** All combat vehicle crews must certify the following tasks IAW the appropriate vehicle TM and report completion to their OC/T before conducting live fire operations:

(1) Crew evacuation drills

(2) Vehicle rollover drills

(3) Misfire procedures

(4) Actions in the event of a flareback (M1-series Tank)

#### **6. Squads and Platoons (TC 3-20.0, Gate 3 (SQD) and Gate 2 (PLT), JUN15).**

**a. Squad (TC 3-20.0, CH.4, Para 4-7, Table 4-3).** Identified as a TOE/MTOE dismounted Infantry, Cavalry, or Engineer small unit, typically led by a Staff Sergeant with two subordinate small teams. This squad is qualified if the squad leader and two subordinate leaders conducted small unit drills under live fire conditions.

**b. Platoon (TC 3-20.0, CH.4, Para 4-7, Table 4-6)** Identified as a TOE/MTOE dismounted or mounted Infantry, Cavalry, Armor, or Engineer unit, typically led by a Lieutenant with two to four subordinate small units. This platoon is qualified if the platoon leader or platoon sergeant with one subordinate leader conducted small unit collective training under live fire conditions.

**c. Company (TC 3-20, CH.4, Para 4-16, Table 4-11)** Identified as a TOE/MTOE dismounted or mounted Infantry, Cavalry, Armor, or Engineer unit, typically commanded by a Captain with two to four subordinate small units. This company is qualified if the company commander and 66 percent of his qualified platoons that have successfully completed collective training under live fire conditions.

**d. Live Fire Requirements.** Squads and Platoons conducting company and above live fire operations must have completed Squad, and Platoon level live fire certification by DA PAM 350-38 (STRAC, FY17) within the last nine months (12 months for RC/NG). Units that do not meet this requirement may submit waivers through their respective chain of command and OC/T Teams.

**e. Infantry Battle Drills.** Specific battle drills must be certified under live conditions by the chain of command IAW ATP 3-21.8 (Infantry Platoon and Squad, APR16) before employment. Units are not required to certify all battle drills, only those drills they wish to incorporate during live fire operations.

**(1) Battle Drill 1:** React to Direct Fire Contact (07-3-D9501)

**(2) Battle Drill 2:** Conduct a Platoon Assault (07-3-D9514)

**(3) Battle Drill 2A:** Conduct a Squad Assault (07-4-D9515)

**(4) Battle Drill 5:** Knock Out a Bunker (07-3-D9406)

**(5) Battle Drill 6:** Enter and Clear a Room (07-4-D9509)

**(6) Battle Drill 7:** Enter a Trench to Secure a Foothold (07-3-D9510 / 07-PLT-9021)

**(7) Battle Drill 8:** Conduct the Initial Breach of a Mined Wire Obstacle (07-3-D9412)

**(8) Battle Drill 9:** React to Indirect Fire (07-3-D9504)

**(9) Battle Drill 12:** Dismount a BFV and ICV (07-3-D9434)

**(10) Battle Drill 13:** Mount a BFV and ICV (07-3-D9434)

**f. OC/T Battle Drill Verification.** Units must coordinate with covering OC/Ts to observe/verify unit proficiency on the above battle drills by observing training/rehearsals in the RUBA during RSOI, unit rehearsals during live fire TLPs or the execution of operations during force on force. Conduct verification rehearsals during RSOI utilizing Range 13 and the Urban Operation rehearsal site in the RUBA.

**g. Night Live Fire.** Units that plan to conduct collective live fire tasks and battle drills at NTC at night must have included those tasks and battle drills at night during live fire certification pre-requisite training.

**h. Applicability.** The above requirements apply to all Rotational Soldiers conducting live fire dismounted maneuver, not just 11-series personnel.

## **7. Indirect Fire Systems.**

**a. Artillery/Mortar Safety Certification.** Artillery/Mortar safety certification is a rotational unit responsibility. All commanders must ensure safety personnel and crews are certified IAW FORSCOM Regulation 350-50-1, JAN10, understand the NTC EXOP, follow the procedures described in the weapon technical manuals and attend a Fire and Effects Brief. Units requiring certification/qualification of their Fire Direction Center must coordinate with OC/Ts to ensure certification/qualification takes place prior to any live fire in support of maneuver elements. Certification and qualification must be per TC 3-09.81, APR16 and TC 3-20.33, AUG2017, and BN SOPs. Certification and qualification processes are administered by the RTU. OC/Ts advise, but do not certify.

**b. Artillery Training Requirements.** Each section must have successfully met standards for Howitzer Tables V and VI within the past six months (12 months for RC) TC 3-09.81. Home station safety certification must be based on standards in the appropriate doctrinal manual. 100% of all FDC personnel must have passed the FDC exam within the past six months (12 months for RC). Battalion and battery FDCs must qualify FDC Table VI prior to live fire. FiST Teams must be certified within six months to be observers for indirect fire (12 months for RC). Howitzers must calibrate and conduct sheaf verification on RSOI 4 before authorized to fire in support of other live fire operations.

### **c. Howitzer Crew/FDC Manning requirements:**

M109A6	4 man crew
M119A3	5 man crew
M198	7 man crew
M777A2	7 man crew
MLRS	4 man crew
FDC	4 man crew

**d. Home Station Equipment Maintenance Data.** Artillery howitzers brought from home station must have their DA 2408-4 (Weapon Record Data), with a current bore scope and pullover gauge data. Commanders must verify and notify Firing Battery OC/Ts when fire control alignment tests are complete before conducting live fire or calibration exercises. Artillery units must deploy with operational chronographs to conduct powder lot calibration before the live fire.

### **e. Mortar Requirements.**

**(1)** All mortar crews (squad leaders, gunners, assistant gunners) must pass the mortar gunner exam with a minimum score of 70% in each task IAW TC 3-22.90 within nine months (12 months for RC/NG) before firing at the NTC.

**(2)** All section leaders, squad leaders, and Fire Direction Center (FDC) personnel must have passed the FDC exam IAW TC 3-22.90, Mortars, MAR17 within nine months (12 months for RC/NG) before firing at the NTC.



(3) All mortar crews must have completed a live fire exercise (LFX) IAW TC 3-20.33, Training and Qualification of Mortars, 17 August 2017, Drill standards within 12 months (12 months for RC/NG) before firing at the NTC. All mortar crews must complete tables I-VI table 4-2 Progressive training events for mortar elements, TC 3-20.33, Training and Qualification of Mortars, 17 August 2017, before firing at NTC. All mortar crews will refer to, and complete mortar ~~PLFS~~ tables I-VI in TC 3-20.33, Training and Qualification of Mortars, 17 August 2017, within 12 months of firing at NTC.

(4) All mortar crews must demonstrate proficiency, to an MOS qualified OC/T, in executing misfire procedures with inert training devices (Reference TC 3-20.33, Training and Qualification of Mortars, 17 August 2017; CH. 4, para. 4-61 // Army Publishing Directorate data base, Technical Manuals 9 for the appropriate publication governing the weapon system) before firing at the NTC.

(5) Fire Direction Centers (FDC) must certify in a BCT-level Fire Direction Center Certification Program (FDCCP) IAW TC 3-22.91 (Appendix E), within the previous six months (12 months for RC/NG).

**(6) Minimum Mortar Live Fire Manning Requirements:**

(a) 60mm - 3 man crew. All must be MOS 11C. If consolidating two or more tubes, then two Soldiers (both MOS 11C) per mortar, must be MOS 11C with a NCOIC. Each section must have a minimum of one Infantry Mortar Leader Course graduate (FDC Computer) with the B1 additional skill identifier (ASI). For the mortar platoon to conduct roving gun operations, each roving gun squad must have an ASI B1 certified Squad Leader assigned to it. Commanders may consider the mortar platoon proficient with only one ASI B1 (FDC Computer); however, the platoon may not function as split sections. For overall mortar proficiency and certification criteria, please refer to Chapter 5, page 5-10 (Table 5-4) through page 5-27, TC 3-20.33, Training and Qualification of Mortars, 17 August 2017.

(b) 60mm Hand Held. A non-11C MOS trained Soldier is authorized to employ the weapon system as long as the Soldier has met all prerequisite training requirements per doctrine.

(c) 81mm, 4.2in., and 120mm - 4 man crew. The squad leader, gunner, and assistant gunner must be MOS 11C. The FDC of an 81-mm mortar platoon consists of one section sergeant, two computers, one driver/RTO. The FDC of a 120-mm mortar section consists of one section sergeant, one chief computer, one check computer, one driver/radio-telephone operator (RTO).

**(d) Infantry Mortar Leaders Course (IMLC) Additional Skill Identifier (ASI) B1 requirements:** Each section must have a minimum of one Infantry Mortar Leader Course graduate (FDC Computer) with the B1 additional skill identifier (ASI). For the mortar platoon to conduct roving gun operations, each roving gun squad must have an ASI B1 certified Squad Leader assigned to it. Commanders may consider the IBCT mortar platoon proficient with only one ASI B1 (FDC Computer); however, the platoon may not function as split sections. For overall mortar proficiency and certification criteria, please refer Chapter 5, page 5-10 (Table 5-4) through page 5-27, TC 3-20.33, Training and Qualification of Mortars, 17 August 2017 .

(1) **IBCT:** requires a proficient B1 ASI certified section leader **and a minimum of one** proficient B1 ASI certified squad leader that, with the appropriate squad members, successfully completes Tier 3, Table VI (Qualification) together as a mortar section, and have not met any of the condemnation criteria of the qualification period. See *TC 3-20.33 17 August 2017; CH. 5, pg. 5-18, fig. 5-7.*

(2) **ABCT:** requires a certified Platoon Leader or Platoon Sergeant and a certified proficient Fire Direction Center (FDC) Chief, with a minimum of **two** proficient subordinate **sections**, that successfully complete Tier 3, Table VI (Qualification) together as a mortar platoon, that have not met any of the condemnation criteria of the qualification period. **Note:** Each section **must have** a minimum of one ASI B1, IMLC graduate (FDC computer). For the platoon to conduct roving gun operations, each roving gun squad must have an ASI B1 Squad Leader. Commanders may consider the ABCT Mortar Platoon proficient with only one ASI B1 (FDC computer); however, the platoon **may not** function as split sections. See TC 3-20.33 17 August 2017; CH. 5, pg. 5-22, fig. 5-10.

(3) **SBCT:** requires a certified proficient Platoon Leader or Platoon Sergeant and a certified proficient section leader, with a minimum of **two** proficient subordinate sections, that successfully complete Tier 3, Table VI (Qualification) together as a mortar platoon, that have not met any of the condemnation criteria of the qualification period. **Note:** Each section **must have** a minimum of one ASI B1, IMLC graduate (FDC computer). For the platoon to conduct roving gun operations, each roving gun squad must have an ASI B1 Squad Leader. Commanders may consider the SBCT Mortar Platoon proficient with only on ASI B1 (FDC computer); however, the platoon **may not** function as split sections. See TC 3-20.33 17 August 2017; CH. 5, pg. 5-26, fig. 5-13.

#### **f. Attack/Cavalry Helicopter Crew Training.**

(1) Aerial Gunnery Training Requirements. Individuals must be aerial gunnery qualified IAW TC 3-04.45, Combat Aviation Gunnery, JAN14 Table VI within twelve months.

(2) Table Training Requirements. Reference B-10, 2.a.1 for qualification requirements.

(3) Refresher Training Requirements. Immediately before deployment, units must complete refresher training on all weapons systems. All aviation units must conduct mountain and desert flight technique briefings before deployment.

(4) Live-Fire Waiver Memorandum. The unit must complete and return the Crew/Individual Live-Fire Waiver memorandum, signed by the battalion/squadron commander NLT RSOI 1 to Eagle 03. Eagle Team must send the signed waiver to Dragon 07 NLT 1700 RSOI 3.

(5) Aviation Live Fire Waiver Requirements.

(a) Completion of aerial gunnery qualification (Table VI) within twelve months is mandatory – no waivers.

(b) Consider the live-fire training event (Table VIII) for periods exceeding the previous six months when the individuals have completed aerial gunnery qualification (Table VI) within the previous six months.

**g. Hellfire Lanes.** If units have the desire to conduct Hellfire lane training while at the NTC must contact Eagle 03M NLT D-60. Hellfire lanes provide crews the opportunity to conduct live Hellfire engagements outside of the tactical scenario. Units must provide missiles from their STRAC allocation. This is not a substitute for the collective live-fire training event.

**h. Door Gunnery Requirements.** Assault and general support door gunners qualify IAW TC 3-04.45 Combat Aviation Gunnery, JAN14 within the previous twelve months – no waivers.

## **2. Air Defense**

**a. Avenger Qualification.** Avenger crews must qualify 4 of 5 hostile presentations using the Table Top Trainer, have qualified on all Stinger drills (TC 44-117-21, Stinger Team Crew Training, AUG09) within three months, and successfully executed all required .50cal gunnery tables within six months (12 months for RC/NG).

**b.** Any live Stinger operations must be coordinated NLT 30 days before the beginning of rotation to enable appropriate coordination for OC/T resourcing and live fire area deconfliction. Units must coordinate for targets and target operators before arriving at NTC.

### **B-4 Movement and Maneuver.**

**1. General.** Prior to conducting live fire operations, the unit and their respective OC/T must verify that all pre-combat checks to achieve a fit-to-fight status been accomplished (B-2.6). A key requirement to ensure the safe execution and to facilitate the unit's accomplishment of their training objectives is the conduct of an effective combined arms rehearsal that has achieved shared understanding two echelons below. The preferred method to accomplish the required shared understanding is to have the appropriate leader (SQD LDR for CO; PLT LDR for BN; Co CDR for BCT) brief his detailed scheme of maneuver as it occurs during the higher headquarters rehearsal. The rehearsal methods are unit dependent.

## **2. Mounted Operations.**

**a.** Only weapons with functional turret or platform stabilization systems may fire on the move, identified as M1, M2, MGS, & ATGM). If turret/weapon platform stabilization is not operational, vehicles must have the weapon systems in electrical and manual safe while on the move. At no time are flex mounted machine guns authorized to fire on the move. Non-stabilized platforms (Stryker family of vehicles and gun trucks) do not fire on the move.

**b.** Before live fire, crews must be in complete uniform and have all guards in place per unit SOP, TM and safety regulations.

**c.** Fire individual weapons or mortars from hatches from stationary vehicles only.

**d.** Vehicle direct fire weapons, to include MILES, are not authorized to fire overhead of troops per DA PAM 385-63, APR14.

**e.** To fire in support of an adjacent maneuvering unit, the mounted platforms (M1, M2, Stryker family of vehicles) must maintain 40 degree and no less than 100m separation from the supported unit's forward line of troops. Gun trucks employing direct fire weapons (M2, M240, M249) can achieve 15 degree and no less than 100m separation, whichever is greater, from the supported unit's forward line of troops only if the traverse and elevation is employed. If the traverse and elevation is not employed (free gun), the gunner must maintain 40 degree and no less than 100m separation from the supported unit's forward line of troops.

**f.** Non-firing platforms that are participating as maneuver elements during the Live Fire Exercise must have white engineer tape around the gun tube/ barrel and displayed on an antenna. An 18-inch tail will hang off the antenna, so OC/Ts can identify non-firing platforms.

## **2. Dismounted Operations.**

**a.** Units will conduct all dismounted operations under the most current published doctrinal standards.

**b.** All dismounted elements must deploy with a functioning MIC vest and notify their OC/T of destination and timeline. No dismounted element deploys forward of the FLOT without an accompanying OC/T.

**c.** Flanking fire of 15-degrees from a Support by Fire (SBF) position is authorized for tripod/T&E or vehicle mounted systems IAW DA Pam 385-63, APR14. Projectiles must not impact closer than 100m to personnel. Crew-served weapons in the SBF must orient the tripod so that metal-to-metal contact occurs on the friendly side of troops. For weapons that do not meet the criteria for 15-degree flanking fire, normal SDZs apply (40 degrees for most weapons systems).

**d. Strong Point, Trench and Bunker Clearance.** The following procedures apply to the reduction of an enemy strong point. Strong points include trenches, bunkers, and obstacle systems.

**(1) Rehearsals and OC/T Battle Drill Verification.** Before conducting live fire trench and bunker clearing, rotational squads and platoons must rehearse relevant battle drills. Covering OC/Ts must be present to verify doctrinal and safety standards (see para B-6.f.).

**(2) PPE Requirements.** All personnel must wear gloves, hearing protection, eye protection, helmet and body armor (SAPI plates).

**(3) Fires on the Strong Point Objective.** Units may employ direct fires on the objective before assaulting; indirect fires are authorized directly on prepared trench systems.

**(4) Authorized Direct Fire Weapons.** All units are required to complete tables I-VI via Table 4-1. Gate 4 – Individual and crew-served weapons, CH 4-2, TC 3-20.0, JUN15, before firing at NTC. Do not fire over the heads of troops in trench systems.

**(5) Weapons Firing Inside of Trenches/Bunkers.** 5.56mm, 9mm, and 12 ga. (or below, non-slug ammunition) Shotgun rounds are the only authorized calibers inside the trench/bunker system. All weapons must be on safe with muzzles pointed down (low ready) when in the trench except when firing. Soldiers in the trench may not fire at targets outside of the trench. Do not fire directly into the firing ports within 25 meters due to the ricochet hazard.

**(6) Marking Systems.** The unit must use their internal SOP to mark the forward line of troops (FLOT) of the lead Soldier in a trench system. Additionally, an OC/T with an orange flag follows behind the lead Soldier in the trench to assist in marking the Front Line Trace of the unit clearing the trench.

### **e. Urban Operations (UO) / Close Quarters Battle (CQB)**

**(1) Rehearsals and OC/T Battle Drill Verification.** Before conducting live fire urban operations, rotational squads and platoons must rehearse relevant battle drills. Covering OC/Ts must be present to verify doctrinal and safety standards (see para B-6.f.).

**a.** OC/T teams must validate that the unit's TTPs are IAW ATP 3-06, DEC17, Combined Operations in Urban Terrain and that the unit is prepared to execute the task safely. Units who intend to use clearing TTPs that differ significantly from those described in either ATP 3-21.8, APR16, *The*

*Infantry Rifle Platoon and Squad*; ATTP 3-06.11, APR11, *Combined Arms Operations in Urban Terrain* and Warrior University, *Infantry Battle and Crew Drills* must request a waiver through the process outlined above.

**b.** During rehearsals, unit leaders at all levels must specifically emphasize muzzle awareness, safety/selector control, trigger finger discipline, and weapons control statuses.

**c.** The walls of most built-up objectives do not stop bullets (e.g. “hot walls”). Precision 7.62mm (Sniper Round), coaxial machine or M240 machine gun variant, 5.56mm, and 9mm or below are the only approved ballistics for all urban objective structures. Full-unobstructed SDZs remain in effect during room clearing operations. OC/Ts' certification on clearing procedures emphasizes clearing buildings with non-ballistic building construction.

**(2) PPE Requirements.** All personnel must wear gloves, hearing protection, APEL approved eye protection, helmet and body armor (SAPI plates).

### **(3) Weapons Restrictions in Urban Areas.**

**a.** Shock Absorbing Concrete (SACON). Firing at targets directly at or within SACON structures is limited to 9mm and 5.56mm only. If previously coordinated with OC/Ts, snipers, and squad designated marksmen may employ 7.62mm in precision fire engagement, as well as coaxial machine gun or M240 machine gun variant. Fire M249 using 3-5 round bursts only.

**b.** Wooden Structures. Firing at plywood wooden structures is limited to .50 cal and below.

**c.** Continuous fire at a single point location is unauthorized.

**(4) Use of Smoke/Pyrotechnics in Buildings.** The use of smoke or pyrotechnics inside of wooden buildings is unauthorized due to fire hazard.

**(5) Urban Breaching.** Breaching plans and methods must be coordinated and rehearsed in advance with the covering OC/T team. Dragon team primary approves all plans before execution.

**(a)** Ballistic breaching. Individuals must be qualified with their weapon and demonstrate proficiency in the task during rehearsals (as certified by an OC/T).

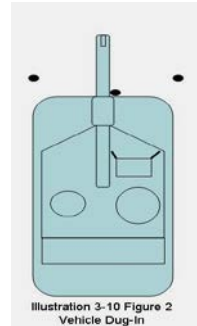
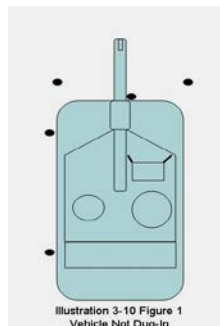
**(b)** Explosive breaching. Approve the exact location, type, and size of each charge through the covering Dragon OC/T. A detailed rehearsal is required, observed, and certified by a qualified OC/T. A qualified OC/T will supervise the preparation and emplacement of demolitions. The unit must obtain final clearance through the covering OC/T before initiating any firing device.

### **3. Defensive Operations.**

**a.** Mark all dug-in fighting positions with three stakes (Illustration 3-10, Figure 2). The center stake serves as the driver's reference stake. Two stakes serve as the left and right sector limiting stakes.

**b.** All fighting positions not dug-in require five stakes (Illustrations 3-10 Figure 1). The two additional stakes mark the left side of the vehicle's position.

**c.** All stakes must be marked to allow visibility during day and night operations (night operations requires the use of chemlights). Additional stakes can raise marker into the vehicle commander and crew's vision.



**d.** All unoccupied dug-in vehicle positions must be marked with stakes at all four corners and visible during daylight and night operations (night operations requires the use of chemlights) to prevent vehicle rollovers.

**e.** Crews must physically identify all the limiting and sector stakes, and vehicle commanders must ensure that all crewmembers understand the difference between the drivers limiting stake and the vehicle's sector stakes.

**f.** The rotational unit must inspect the left and right limits of every position. To fire from a position, the crew must proof the position with their covering OC/T.

**g.** If any limiting stake or night visual aid is knocked down or repositioned during execution the covering OC/T team may direct the crew to cease firing and clear all weapon systems. Do not repair a marking while the unit is engaging the enemy. Stakes are not a replacement for the vehicle commander. The vehicle commander maintains the responsibility to positively identify a target and clear gun-target lines (GTL) before engaging.

**h.** Infantry fighting positions must be built to standards outlined in GTA 7-6-1, Fighting Position Construction – Infantry Leaders' Reference Card. Positions may be "built up" or "built down," but must include aiming and limiting stakes, and stringers of adequate length IAW FM 3-21.75 Ch. 6. Overhead cover, if used, must be no less than 18 inches and constructed to standard. Additionally, positions with overhead cover must demonstrate stability by holding the weight of a 200-pound man. Positions may require the use of support stakes and revetments to enhance stability. Fighting Position Overhead Cover (FPOC) do not require the use of stringers, but only if the FPOC exceeds the position width by a minimum of 12 inches on each side of the hole. Fighting positions not to standard or deemed unsafe is not authorized. Individual Soldier and crew-served firing positions must include sector limit stakes.

**i.** Hasty positions dug into the ground and natural materials used to create natural cover and concealment toward the front of the fighting position, but no overhead cover is required due to material limitations. Proper construction materials requested to build the fighting position to standard as directed above. Individual Soldier and crew-served firing positions must include sector limit stakes.

**j.** Brigade Reserve/Security Force. There is no requirement to stake in the Brigade Reserve fighting positions during the BCT's defense. The Brigade Reserve must conduct a full force rehearsal

of the movement into position and conduct coordination with adjacent units. **Before establishing the security zone forward of the primary BP, security forces must rehearse displacement from the security zone and coordinate with rearward units must be conducted.**

#### **4. Fragmentary Hand Grenades.**

**a. Authorized Use.** Live fragmentary grenades can be used to enter the trench system, clear around corners within the trench system, clear bunkers and clear designate SACON grenade-rooms provided the Soldier employing the grenade meets minimum certification requirements outlined in para B-3.4.f.

**b. Soldier Kit Configuration.** Carry grenades in Army-issued grenade pouches. Do not tape hand grenade spoons.

**c. Restrictions on Stacking.** If live fragmentary grenades are used to clear corners or bunker entrances, only the first two Soldiers can stack directly at the corner. The remainder of the team must remain at least 5 meters back to allow the first two Soldiers room to react if the grenade bounces or rolls back.

**d. Individual Weapon of Soldier throwing Grenade.** Soldiers employing grenades must not hold their primary weapon in hand while "prepping" and dropping or tossing a grenade. Soldiers hold weapons or secure them with a "hands-free" style assault sling.

**e. Two-Man Trench Entry Requirements.** If the two-man trench entry is used (FM 3-21.8, Battle Drill #7), the Soldiers dropping the grenades must lay feet-to-feet as they prep and drop (**not throw**) the grenades. After dropping the grenades, the team leader physically grabs the grenade throwers as they roll away, and maintains positive control of both Soldiers to ensure they do not attempt to enter the trench before both grenades detonate.

**f. Cooking Off Hand Grenades.** Do not "cook off" hand grenades.

**g. Accountability.** The unit must maintain a running count of all grenades detonated. Confirm accountability before going "Green and Clear."

**h. Verbal Shouts/Warnings.** The grenadier must yell the word "grenade" to alert personnel to take cover if an errant fragmentary grenade bounces or rolls back. Every Soldier echoes "Prepping Frag" when he removes the grenade safety clip and "Frag Out!" when he removes the pin and deploys the grenade. All personnel in the vicinity must drop prone and face the blast.

#### **i. Hand Grenade Dud Procedures.**

**(1) Dud at Trench Entry Point.** If a dud occurs at the initial entry point, maneuver to another entry point and avoid the affected leg. A Soldier from the unit (under OC/T supervision) positions himself near the entry point is to prevent other Soldiers from accidentally entering that portion of the trench.

**(2) Dud during Trench Clearing.** Bypass the leg of the trench where a dud has occurred. The unit places a Soldier on each end of that leg (under OC/T supervision) to prevent other Soldiers from accidentally entering that section of the trench. Depending on where the dud occurs, the unit may be able to move tactically around the duded trench section and re-enter the trench at the next leg to continue clearing.

**(3) Dud in Bunker or Room.** If a dud occurs in a bunker, the unit must not clear that bunker. The unit positions a Soldier (under OC/T supervision) near the bunker entrance to prevent others from entering the bunker.

**(4) Securing of Dud.** Unit guards must remain in place at the site of the DUD until directed to leave by an OC/T. Unit and at least one covering OC/T must remain in place until the DUD has been cleared by EOD.

## **5. Night Live Fire.**

**a.** At a minimum, all individual weapons must have a boresight laser with night optic or integrate illumination for night live fire operations. Units must use either tac-lights, illumination or a laser and NVG combination when operating in urban areas.

**b.** All combat vehicles must have fully functional thermal sights and have conducted reverse polarity target training to conduct night live fire.

**c.** All crew served weapons must use fixed thermal optics (AN/PAS-13 or equivalent) boresight to the weapon and integrate illumination for night live fire operations to enable identification of targets.

**d.** If thermal optics are not available, the unit must meet the following criteria: **NVGs, mounted and boresighted laser.**

## **B-5 Fires.**

**1. General.** Live fire has no predesignated firing points, range boundaries or predetermined safety data. Areas for indirect fire impacts consist of the area bounded by unit boundaries from the 52<sup>nd</sup> ID operations order and fire support coordinating measures (both 52 ID and unit created).

**2. Fires General Directives.** The following directives apply to tubed artillery, rockets and mortars.

**a.** RED Indirect Status. Indirect Fire is authorized. Field artillery and mortar units require all of the following before receiving a red status:

**(1)** 100% accountability of ammunition, men, weapons and equipment.

**(2)** Maneuver graphics are posted in FDC and plotted on observer maps including phase lines, axis of advance, and battle positions.

**(3) All 52ID and unit FSCMs posted both analog and digital in FDC and plotted on observer maps. All FSCMs must match with 52ID and across all FDCs, FSEs and BCT FSC.**

**(4)** Meet all 5 Requirements for Accurate Fire. It is the unit's responsibility to place itself in the "Adjust Fire" mode when they cannot meet the five requirements for Accurate Fire. Failure to do so will result in the unit being placed in a "check firing" status by an OC/T.

**(5)** Pre-fire checks conducted on all firing platforms IAW applicable TM.

**(6)** Misfire procedures rehearsed and posted at all firing platforms.



**(7)** All personnel are in the fit-to-fight uniform – ballistic helmet, body armor, eye protection, gloves and hearing protection.

**b. Clearing Indirect Fires.** Prior to firing a mission or subsequent corrections, the FDC must give the OC/T the artillery mission card for final clearance during live fire. (Refer to EXOP, Chapter 4 for required Mission card data.)

**(1) Observation.** All fires during live fire will have a FiST certified observer. If a counterfire mission is received from a radar acquisition the rotational unit does not have to have an observer to fire the mission, OC/Ts will observe live counterfire missions. All other fires require an observer team with an OC/T to observe every indirect round fired. Radar cannot be utilized as an observer independently but can be employed to augment observer teams. UAS and aerial observers may be utilized as long as a trained observer is viewing the feed/target from the ground control station. Units may coordinate through 52<sup>nd</sup> ID for division level assets to observe fires.

**(2) Communications.** Observers must maintain voice communications with Higher Headquarters (HHQ) and the HHQ must maintain the chain of voice communications down to the firing unit FDC. If voice communications are lost with controlling HHQ (at any time) and/or observer (during a fire mission), the firing element and FDC will place itself in Check Firing until communications are re-established. The RTU may request through Dragon 07 to employ alternate means of primary communication (i.e. Digital VHF, HF, Digital HF), Dragon 07 retains decision authority to deviate from the specified primary means of safely controlling indirect fires.

**(3)** All indirect fires must be cleared by Warrior Fires for Artillery and Dragon Fires for Mortars through a Fires Observer OC/T. Units receive all 52ID FSCMs from the DTOC during RSOI to include live fire FSCMs. FSCMs must be loaded onto every AFATDS and copied on observer and Fire Direction Officer analog maps prior to execution.

**(4) FSCM & SDZ Violation Authority.** During Live-Fire Operations, the NTC Commanding General withholds authority to violate Restricted Fire Areas (RFAs) and SDZs.

**(5)** If a firing incident occurs, it is the unit's responsibility to place itself in a check-fire status. OC/T's reserve the right to place a unit in check-fire status at any time. The unit is required to investigate all firing incidents and take corrective action. Any de-certified crew requires the NTC Senior Live Fire OC/T (Dragon 07) approval prior to rejoining live-fire ops.

### **3. Lasers**

**a.** Safety filters, training cables, and/or inhibitor plugs must remain installed until the operator receives RED status from an OC/T. Lasing devices are only used in the presence of an OC/T. Zulu TAC gives clearance prior to any area being laser activity in an area.

**b. Laser Classification.** Class 1 lasers do not require a RED status. If the filter, training cables, or inhibitor plugs cause a Class 2-4 device to be classified as a Class 1 laser, it may be used as long as the filter, cables or plugs remain properly installed. Class 2-4 lasers require RED status.

**c. Buffer.** When operating a laser, the operator must have a 15-mil buffer when lasing over a reflective surface, near personnel, or below sky line. Maintain a 15 mil buffer off laser target line.

**4. Minimum Safe Distances (MSDs).** MSDs established by NTC are listed in the table below. Units may increase MSDs based on risk assessment. The following chart provides the deviations specific for NTC and is updated each FY. Consult the respective OC/T team and the Dragon Team for updates.

System	High Angle	Low Angle	Direct Lay
60 mm	350m	N/A	150m
81 mm	500m	N/A	200m
120 mm	600m	N/A	N/A
105 mm	650m	600m	N/A
155 mm	1000m	600m	N/A
MLRS/HIMARS	N/A	2000m	N/A

## 5. Artillery Operations.

**a.** All FDCs must perform target grid location and altitude checks before every fire mission.

**b.** Effects of artillery fire must not violate Minimum Safe Distances (MSD) for artillery weapon systems at NTC.

**c.** Personnel are authorized to occupy Areas A, B and C of the indirect fire SDZ when MSDs are applied. Personnel are authorized to enter Area E IAW the appropriate weapons technical manual and AR 385-63.

**d.** The Brigade must conduct a technical rehearsal from sensor to shooter prior to the Field Artillery Battalion being allowed to shoot live in support of maneuver for each operation during live fire. Dragon 07 can approve exceptions to this stipulation (i.e. counterfire).

### **e. Firing Battery Responsibilities.**

**(1)** Firing battery leadership must lay howitzers IAW the current doctrinal manual for the weapon system. Firing Unit Location: Firing positions will be surveyed to 5th order accuracy and have a direction common to all other firing elements. At a minimum, for live fire, guns self-locate and conduct big 3, then verify accuracy using DAGR or VMS. Big 3 must use DAGR and validate weapon is within 10m of northing/easting/altitude. Battery OC/Ts will verify that the battery/platoon leadership has confirmed their howitzer locations in the AFATDS database prior to calling for RED indirect status.

**(2)** XO's min QE must be determined for all charges fired.

**(3)** Ensure that Danger Area Echo is clear of personnel not involved in the firing. NTC currently has a range safety deviation reducing Area Echo to 350 meters for 155mm and 300 meters for 105mm. Reference LF 07 Artillery Danger Areas; DA PAM 385-63 paragraphs 10-4, h (Table 10-2).

**(4)** Time settings and variable time fuses are authorized in live fire. Any personnel in Area A or C must be protected in accordance with DA PAM 385-63.

**(5)** Each howitzer section chief and vehicle commander is responsible for the safe firing and clearing of the weapon systems.

(6) Misfires must be handled IAW the appropriate TM.

(7) No overhead fires in a direct fire mode.

(8) Cannon firing batteries can execute self-illumination, killer junior, and emergency fire mission engagements upon Senior Live Fire OC/T (Dragon 07) approval.

(9) Fire Control. Rotational units process all fire support tasks IAW unit SOP. An OC/T must be present in order to fire.

**f. Safety Violations.** Safety violations are broken down into two categories: safety incidents and firing incidents. A safety incident occurs any time safety personnel or crews fail to follow procedures outlined in AR 385-63, the NTC EXOP or applicable technical manuals.

(1) The battery/platoon senior OC/T shuts down a firing unit for:

(a) Failing to conduct pre-fire checks properly. Common error is not completing bore sight requirements specified in the weapon technical manual.

(b) Failing to conduct independent secondary checks.

(c) Failing to meet minimum manning requirements when firing.

(d) Personnel in the recoil path of weapon.

(e) Personnel failing to wear ballistic helmet inside howitzer.

(f) Conducting an improper crew drill.

(g) Failing to verify fire commands by reading back fuse setting, fuse-round combination, charge, PANTEL deflection and quadrant, PANTEL gunner's sight picture, reload on loading elevation, properly swabbing after each round is fire, announce bore clear, command "FIRE", and properly ram round (auto and manual).

(h) Joysticking a paladin to speed load and lay times.

(2) The battery/platoon senior OC/T shuts down an FDC section for failing to:

(a) Conduct independent secondary checks.

(b) Issue proper fire commands.

(c) Maintain positive control.

(d) Pass fire mission OC/T card to the FDC OC/T prior to firing.

(e) Have No Fire Areas, restricted fire areas, maneuver graphics, air corridors, and other FSCMs posted and maintained.

(f) Perform grid and altitude location checks for each mission and ensure that the effects of fires do not violate FSCMs or boundaries.

(g) FDO not ensuring that all-subsequent corrections do not violate FSCM or boundaries.

(h) FDO not checking intervening crest along the gun-target line.

(3) Firing Incident is defined as any time a round impacts or functions at a point or time other than the designated target within four probable errors in range, deflection, and height of burst. Failure to follow NTC clearance procedures constitutes a firing incident. Upon notification of a firing incident, all field artillery units and mortar sections immediately go into "check firing" posture and conduct their own internal investigation IAW the FA Battalion and TF Commanders' guidance to determine the cause of the incident, and the firing battery OC/T informs Warrior Fires on Group Channel 106 notifying them that the firing unit has had a firing incident and is currently in a 'CHECKFIRE"/CHECKFIRE FREEZE" status. The investigation is a unit chain-of-command responsibility. Once the training unit determines the cause of the incident, the unit chain of command must take measures to correct unsafe conditions and prevent recurrence. The training unit must make a courtesy preliminary (voice) report of findings and actions taken to the Commander, Operations Group through the Senior Live Fire Trainer.

(4) **Final Action.** At the conclusion of the rotation, the training unit submits a letter through the Senior Live Fire Trainer to Commander, Operations Group detailing each incident, the findings of the investigation and corrective actions taken. The following example of firing incidents are the most commonly observed: firing at load elevation, pre-cut charges, improper fuze setting, using the joystick to bring the tube to load elevation, FDO and FDNCO failing to conduct secondary independent checks of target location grid entered into the AFATDS.

#### **g. Direct Fire Engagements.**

(1) Battery leaders control direct fire engagements and weapon control status. Area E applies to everyone during direct fire engagements. Engagements must not violate Area E.

(2) Battery leadership must coordinate with all adjacent units for sectors of fire and other mutual defense issues. Sectors of fire must be established, marked, and verified. Section chiefs must verify direct fire telescope bore sight and gun target line clearance prior to engaging targets.

(3) Fighting positions must be to standard before Soldiers can fire from them. After the battery chain-of-command reviews all fighting positions, the battery commander must point out to the senior battery OC/T each fighting position that he expects to fire from. Sectors of fire must be clearly defined and marked.

**h. Plan and Use of Self-Illumination.** Range to fuse function must be no less than 500 meters from friendly troops. Range to canister impact must be no less than 1,000 meters from friendly troops. Self-illumination targets must be pre-planned. The battery must select an observer per unit TACSOP and he must have eyes on the pre-planned illumination target in order to adjust. Use Charge 3GB or higher.

**i. Killer Junior.** The minimum authorized is as per the weapon TM. For example, the M777A2's (M776 cannon) minimum charge for M3A1, M4A1, or M4A2 bag powder is charge 3 but M231 MACS increment 1 is allowed. Do not plan or engage Killer Junior targets closer than 1200 meters due to explosion safety hazards (Danger Area E) in Live Fire. The battery chain-of-command must establish, verify, and distribute Killer Junior Rotational Tables for each howitzer IAW ATP 3-09.50.

#### **j. Ammunition Restrictions.**

**(1) Precision Guidance Kit (PGK).** No overhead fires. No personnel within the SDZ. Units must possess required equipment, COMSEC, and demonstrate correct procedures to employ near-precision munitions.

**(2) Excalibur and Guided Multiple Launch Rocket System (GMLRS).** Units use the reduced NTC SDZ. Units must possess required equipment, COMSEC, and demonstrate correct procedures to employ precision munitions. Reference LF 09 Excalibur Deviations Para. 4

**(3) Illumination.** Range-to-fuse function is no less than 500m from friendly positions. Range-to-impact must comply with howitzer Minimum Safe Distance (MSD).

**(4) Rocket-Assisted Projectile (RAP).** Rocket-on firing requires a clear zone short of the target area in case the rocket motor fails to function. According to AIN 001-15-155mm Rocket off only in combat emergency. Rocket on clear 7,000m short of target. 105mm RAP requires a clear zone of 5,000m short of and beyond the target, plus MSD. 155mm RAP requires a 7,000m clear zone short of the target, plus MSD. Rocket-off firing of 155mm RAP is unauthorized. (See section A8: LF 08 Deviation on Restriction for Overhead Fires for High Explosive Rocket Assisted Projectile (HE RAP) Rounds for exceptions to this restriction.)

**(5) Improved Conventional Munitions (ICM) and FASCAM.** ICM and FASCAM munitions and variations are not available from the Fort Irwin ASP. HE may replicate these munitions. Coordination is required through the Fire Support and Sustainment Teams for replication.

**(6) RRPR.** When MLRS is firing the Reduced Range Practice Rocket (RRPR), the uninhabited zone of Exclusion Area 1 is reduced to 1,000 meters. Exclusion Area II is authorized for occupation by rotational units and Combat Trainers. The RRPR is authorized for overhead fires for personnel in Exclusion Area II only. The MSD for the RRPR round is 2,000 meters.

#### **k. Excalibur SDZ Deviation:**

**(1)** Under the provisions of DA PAM 385-63, deviation from the restrictions contained in chapter 10, paragraph 10-4 authorized by chapter 1, paragraph 1-5, a, (2), are authorized by modifying prescribed firing procedures appropriate for a state of training of participating personnel to increase training realism. Reference LF 09 Excalibur Deviations Para. 4

**(2)** Under the provisions of DA PAM 385-63, deviations from the restrictions contained in chapter 1, paragraph 1-5, b, applied to SDZs extending beyond installation boundaries must be based on the ability to contain projectiles, hazardous fragments, laser beams and both vertical and horizontal ricochet sufficiently within the installation boundaries, and areas under military control. Probability of hazardous fragment escapement must not present a greater hazard than 1:1,000,000 (10-6)(unlikely) to the public.

**(3)** Use of an additional, smaller Safety Fan on a rotation by rotation basis for the sole purpose of incorporating Excalibur fires into the training scenario is authorized based on prior approval by the CG.

**I. Calibration.** Units conduct calibration, coordinated through the Fires Training Team (Wolf), for all firing howitzers on Training Day 10. If the unit is unable to conduct calibration of a particular projectile family or lot, then Wolf 07 may authorize the unit to fire that projectile family or lot in adjust fire mode during live fire.

## **6. Mortars.**

**a. Location.** Mortar firing positions require a DAGR with FOM 1 for accurate location. No map spots. Platoon/section must be laid for firing with an M2 aiming circle. Verify the lay of the platoon/section with a declinated M2 compass or an M2 aiming circle. All ground mounted mortar systems must settle each tube base plate per the latest Safety Use Message and verify lay prior to conducting a registration or fire for effect mission in the indirect fire mode.

**b. Ammunition.** Do not expose charges prior to firing or pre-cut a charge.

**c. Boresight.** Boresight of mortar sight must be conducted IAW the appropriate doctrine as a part of mortar PCC/PCIs prior to live fire operations, whether digital or degraded.

**d. Misfires.** Misfires are removed IAW the appropriate doctrine. Misfires do not put the entire unit in CHECK FIRE.

**e. Direct Lay.** The 120mm, 81mm or 60mm mortar may fire in direct lay mode. The use of the 60mm in hand held mode is authorized as long as the gunner has met all training requirements per doctrine. For 60mm hand held, the use of a non-11C Soldier is authorized as long as he has met all prerequisite training requirements per doctrine.

**f. Overhead Fires.** No overhead fires of mortars IAW DA PAM 385-63. Exception to this is the employment of the Expeditionary Fire Support System (EFSS) M327 120mm rifled towed mortar.

## **7. Observation.**

**a.** No unobserved fires during Live Fire. The use of a trained and certified MOS specific forward observer is required to observe all rounds. In the absence of a certified FO, a Soldier who has conducted home station training in accordance with appropriate doctrine may call for fire. A Fires OC/T will be present and co-located at all times to ensure the safe execution of the fire mission.

**b. Location.** There are no pre-designated Observation Posts (OP) in live fire. Observer teams are required to self-locate with DAGR and provide an eight digit grid position to the higher headquarters and supporting FDC. No map spotting. OC/T must accompany observers.

**c. No Fire Area (NFA).** Rotational units will emplace NFAs in the AFATDS over all OP locations.

**d. Unmanned Aerial Systems (UAS) and Full-Motion Video (FMV).** A qualified observer may use UAS and FMV to observe fires. Ravens and Pumas are NOT authorized systems to observe fires due to their inability to self-locate and the degree of inaccuracy in their respective optics to properly identify the designated target.

**e. Night Operations.** Observer Teams are required to utilize observation systems equipped with thermal imaging for operations under limited light or darkness. Night Vision Devices and Enhanced Night Vision Devices cannot be used for observation alone unless adjusting illumination.

**f. Deep Fires.** Units may coordinate with 52ID to request observation of deep fires beyond designated limits of advance (LOAs) in support of operations. BCT FSOs will coordinate through OC/Ts prior to any 52ID observation support request.

**8. Counterfire.** If a counterfire mission is received from a radar acquisition and the rotational unit does not have to have an observer in position, counterfire missions may be observed by OC/Ts. Radar cannot be utilized as observer independently but can be employed to augment observer teams.

## **B-6 Protection.**

**1. General.** Rotational unit counter-mobility and survivability efforts will affect enemy if properly executed. The Senior Live Fire Trainer approves any use of simulated engineer activities or effects.

### **2. Administrative.**

**a. Reports.** Rotational units will submit the following engineer reports to the 52ID DTOC during operations:

(1) Obstacle intention (obstacle overlay and obstacle matrix) before emplacing any obstacle.

(2) Obstacle initiation completion progress (minimum every 25%).

(3) DA Form 1355s and or/ DA Form 1355-1s for all obstacles with mines.

**b. Execution.** All engineer and engineer related activities are conducted IAW this EXOP, OPODs, TSOPs, and in compliance with established procedures and Army regulations.

**c. Recovery.** Rotational units may emplace any mobility, counter-mobility, or survivability positions as per the following criteria:

(1) The emplacing unit has the onus for filling or remediation of all obstacles, berms, anti-tank ditches, and individual/vehicle fighting positions.

(2) Units will remove all Class IV and V materials at the end of live fire as directed by the Senior Live Fire Trainer.

### **3. Obstacle Effects.**

#### **a. OPFOR Obstacles:**

(1) All OPFOR mines have full-width vehicle kill capability. Assess any vehicle that drives over or hits an antitank (AT) mine as a Catastrophic Kill.

(2) If unit activates an anti-handling device, mine, or IED, assess all individuals within 25 meters as casualties, to include Soldiers not buttoned-up in hardened vehicles and buttoned up.

(3) All pre-existing minefields controlled by OPFOR are active.

**b. Rotational Unit Obstacles.** Engineer OC/Ts verify all obstacles for effectiveness to determine the delay of the enemy attack. Obstacle quality, density, and the location is the base for enemy

obstacle negotiation times. It is the rotational unit's responsibility to report to OC/Ts the particular disposition and composition of all emplaced obstacles.

**(1)** Treat all mines as real mines (e.g., transporting, handling, emplacing, and explosive capabilities). In the event of improper procedures, Engineer OC/T recommends adjudication through supporting 07.

**(2)** Scatterable Minefields (SCATMINE): ADAM/RAAM SCATMINE allocate per 52<sup>nd</sup> ID order; OC/Ts are responsible for ensuring the time of emplacement reflects when the actual employment occurs; Rotational units may employ MOPMS and Volcano, provided all equipment is operational, and the unit has the training mines available (replicated by blue blocks); Purple smoke marks all SCATMINE obstacle effects.

#### **4. Use of Demolitions.** Ensure Sidewinder OC/T is present.

**a.** Demolition is inclusive of the following: detonating cord, TNT, military dynamite, C-4, cratering charges, shape charges, Bangalore torpedoes, live charges, blasting caps, and expedient demolitions.

**b. Pre-Prime of Demolitions.** Engineers may pre-prime demolitions with detonating cord at any time (State I). Ensure Sidewinder OC/T approves before connecting or emplacing a blasting cap to any demolition (State II). A minimum of two minutes of time fuse is required when using time delay initiation system and rotational units must conduct a test burn in the presence of an Engineer OC/T.

**c. Claymore / Demo.** Insert blasting caps and systems tests with an OC/T approval.

**d. Danger Safety Zone.** The rotational engineer unit is responsible for notifying the Engineer OC/T that the danger safety zone is clear. Once the Engineer OC/T verifies the danger safety zone is clear, the OC/T grants permission to ignite the demolition system. The standoff is IAW TM 3-34.82 *Explosives and Demolitions*.

**e. Inspection Post-Detonation.** The Engineer OC/T is the first person to inspect the demolition site after the charge(s) have detonated.

**f. Misfires.** In the event of any demolition misfire Engineer OC/T will wait at least thirty minutes (cool down period) prior to conducting misfire clearing operations per TM 3-34.82, *Explosives and Demolitions*, Chapter 2, Priming Methods and Firing Systems.

**g. Urban Breaching.** Breaching plans must be coordinated in advance with the covering OC/T team and approved through the covering Dragon Team OC/T. Excessive damage to structures may result in the rotational unit being held financially liable for repair costs. Build and emplace all charges IAW TM 3-34.214 *Explosives and Demolitions*.

**(1) Ballistic Breaching.** Individual(s) must be qualified with their weapon and demonstrate proficiency in the task during rehearsals (as certified by an OC/T). Prior coordination must be conducted with the Rotational Planner NLT the D-90 meeting.

**(2) Explosive Breaching.** The use of explosive breaches must be coordinated NLT RSOI 3 with the Sidewinder and Dragon Team. The exact location, type, and size of each charge must be briefed during the rehearsal and specifically approved through the covering Dragon OC/T. A detailed rehearsal is required and must be observed and certified by an Engineer OC/T. A qualified OC/T will



supervise the preparation and emplacement of demolitions. The unit must obtain final clearance through the covering OC/T before initiating any firing device.

**(3) Mechanical Breaching.** Coordinate in advance with the covering OC/T team and approve through the Dragon Team OC/T.

**h. Pop and Drop Breach.** The "Pop and Drop" method of breaching is **NOT** authorized. Utilizing multiple charges, separately primed and initiated defines the "pop and drop breach" and applies to time fuse and command initiation systems.

**i. MICLIC Operations.** Before firing the MICLIC during the combat operations, the platoon leader must notify the chain of command to begin clearing the surface danger zone. NTC has deviated from SDZ requirements in AR 385-63, JAN 2012. Live MICLIC operations requires the following:

**(1) Shunting.** The MICLIC firing system must remain shunted until connected to the blasting machine.

**(2)** Only the MICLIC armored towing vehicle or ABV and a plow tank may stay in Area F, which is a 30-meter radius around the MICLIC. These personnel shall be in an armored vehicle, with the hatches closed, and wearing appropriate hearing protection.

**(3)** The Breach Force Security Element may occupy the fragmentation zone behind the MICLIC firing line, outside of Area F. These personnel must be in an armored vehicle, with the hatches closed, and wearing appropriate hearing protection.

**(4)** Only required vehicles and personnel are allowed in the noise hazard contour behind the MICLIC firing line. All dismounted personnel and soft skin vehicles must be at least 200 meters to the rear of the MICLIC firing line, or 800 meters to either flank.

**(5)** After clearing the danger zone, the senior engineer on site notifies the Engineer OC/T and request permission to fire the MICLIC. Before granting permission to fire, the Engineer OC/T verifies that the safety danger zone is clear IAW the approved deviation. Once done, the Dragon OC/T grants permission to fire. The firing of the weapon is dependant upon an OC/T granting permission.

**j. Modernized Demolition Initiators (MDI).** Do not use MDI with conventional demolition initiation systems (M7 nonelectric blasting cap, M6 electric blasting cap, M60 fuse igniter, or M700 time fuse). Company Commander certifies all Soldiers on MDI.

## **5. Survivability Positions.**

**a. Evaluation.** Evaluate the survivability of constructed vehicle fighting positions per TM 3-34.85 *Engineer Field Data*, ATP 3-90.1 *Armor and Mechanized Infantry Company Team*, ATP 3-90.5 *Combined Arms Battalion*, and ATP 3-37.34 *Survivability Operations*.

### **b. Fighting Positions.**

**(1)** The area north of the LFX Dud Effects line is a temporary impact area. Digging both day and night must be executed per the current Live Fire 02 Deviation of Impact Area and Live Fire Area Restrictions Memorandum. Follow procedures outlined in the NTC EXOP Chapter 5-8.

(2) Personnel supporting digging of fighting positions in the live fire temporary impact area will wear required PPE to include ballistic helmet, body armor, eye protection, gloves and hearing protection.

(3) The unit must appoint a safety observer who will be present, but in a safe location during all digging operations. The safety observer must inspect the proposed digging location before digging begins and continue observation to identify any potential UXO during dig operations. Observers will be in PPE as described above.

(4) The safety observer must be present during the UXO identification portion of the Fires and Effects Brief conducted during RSOI.

(5) Fighting positions must be IAW GTA 7-6-1 *Fighting Position Construction*, TM 3-34.85, MAR2016, ATP 3-37.34, JUN2014. Additional protection requires 18 inches overhead cover.

c. **Marking.** Mark all fighting positions IAW Section B-4, Paragraph 3 of this document.

## **6. IED and UXO Reduction.**

a. **Training Requirements.** Units participating in live fire operations while in rotation at the National Training Center are authorized to utilize Explosive Ordnance Clearance Agents (EOCA) and Route Reconnaissance/Clearance Operations – Sapper (R2C2-S) trained Soldiers to reduce IEDs with the following criteria:

(1) The Soldier or leader has attended and graduated from the **Explosive Ordnance Clearance Agent (EOCA) Course**. At Fort Leonard Wood, MO. Exception is if the Soldier or leader has attended and graduated from the **Route Reconnaissance / Clearance Operations Course - Sapper (R2C2-S)** at Fort Leonard Wood, MO (10-day curriculum).

(2) The Soldier or leader has conducted Demolitions certification / Recertification within six months of the end of the scheduled NTC rotation.

(3) Unit possesses the proper mechanical or robotics platforms for interrogation, identification and reduction charge placement; no manual approach authorized.

(4) The Soldier or leader has conducted Robotics familiarization and certification for reducing charge placement.

(5) Units submit a memorandum signed by the Company Commander/Battalion Commander certifying EOCA/R2C2-S trained Soldiers' data. The memorandum must be submitted NLT RSOI 2 and include:

(a) Standard name-line of Soldier. DTG of EOCA course graduation and EOCA Course number (copy of EOCA certificate on-hand with HQ).

(a) DTG of R2C2-S course graduation and R2C2-S course number (copy of R2C2-S course certificate on-hand with HQ).

(a) DTG of latest demolitions certification/recertification (must be within six months of the end of scheduled NTC rotation).

(a) DTG of robotics familiarization/certification; specifically addressing robotics system employment procedures and demolitions utilization/placement.

**b. Capabilities and limitations for EOCA/R2C2-S reduction of UXO / IEDs:**

(1) The rotational training unit will not reduce UXOs within Live Fire and will call EOD. The RTU may reduce IEDs **ONLY** when the operation is the ground commander's highest priority. There will be **NO MANUAL APPROACH** and must conduct either mechanical (Buffalo) or robotic interrogation and robotic charge placement. A single EOCA/R2C2-S may reduce IEDs and does not require multiple EOCA certified Soldiers to execute. The EOCA may reduce and exploit any initiation system and **MUST** positively identify ordnance type and size:

(a) **No** EFPs or Shaped Charge Munitions.

(b) **No** items over 155mm Military Grade Munitions.

(c) EOCA may reduce Improvised Rocket Launchers (IRL).

(d) **No** Chemical, Biological, Radiological, Nuclear (CBRN) munitions.

(e) **No** "Daisy chained" items.

(f) **No** suicide bombers or VBIEDs.

(g) **No** Homemade Explosives (HME).

(2) EOCA can reduce buried or partially buried IEDs. However, the area must be able to withstand a high order detonation. If an IED falls within capability for EOCA to reduce, the decision for reduction resides with the PATROL LEADER and EOCA on the ground. Any IED outside of the above guidelines requires the Battalion Commander approval and EOD must be called to reduce the IED.

**c. Adjudication Procedures.**

(1) Stow, transport, and utilize live or training demolitions IAW TM 3-34.82, *Explosives and Demolitions* and NTC EXOP chapter 5-2, *Training Demolition*. Establish proper security procedures (Blocking positions, 5-Cs conducted, proper stand-off/SDZ, use of terrain/armament for personnel protection). EOCA follows proper identification and response procedures IAW, ATP 3-34.20 *Countering Explosive Hazards* and EOCA IED reduction flowchart.

(2) EOCA and reduction team properly identifies SDZ and assesses the immediate area for potential high-order detonation effects damage. If the area facilitates reduction, EOCA and reduction team proceeds. If not, EOCA contacts EOD.

(3) EOCA consults proper authorization authority for reduction and conducts a final check with cordon to ensure the area is clear for detonation; ensures personnel, infrastructure, and equipment are clear.

(4) EOCA must request permission from Engineer OC/T to initiate the charge.

(5) IED adjudication procedures conducted IAW NTC EXOP Chapter 5-3 during interrogation/interdiction procedures; assess casualties/BDA as prescribed.

## **B-7 Sustainment.**

**1. Casualty Evacuation.** Units conduct casualty evacuation per unit SOP once the covering OC/T team adjudicates the casualty per Force-on-Force EXOP (Chapter 8) requirements. The unit must ensure all Soldiers conducting casualty evacuations clear their weapon systems before moving to Role I and Role II. The rotational unit will not execute notional (assessed) casualty air CASEVAC operations with rotational unit rotary wing aircraft on TD 12 or TD 14, but may execute on TD 13 as long as units maintain a dedicated aircraft for real world MEDEVAC.

## **2. Vehicle Reconstitution.**

**a. Simulated Battle Damage (SBD).** Mobility and firepower may be reconstituted at the company trains if the company maintenance team has required personnel, tools, and parts (on-hand or on-order) to implement the necessary repairs.

**b. Return of Vehicles to Units.** Vehicles recovered to the UMCP must not return to their parent unit until they establish communications with that unit.

**c. Disposition of Destroyed Vehicles.** Catastrophic vehicles remain in place unless under the control of an OC/T. OC/Ts may consolidate destroyed vehicles to maintain positive control during live fire operations. Destroyed vehicles and equipment are not available for EA development, fighting position proofing, rehearsals, etc. until reconstituted per EXSOP.

**d. Participation in LOGPAC.** Vehicles and crews may participate in LOGPAC operations even though they are Catastrophic or SBD Kills.

**e. Fight Reentry.** Reconstituted vehicles reenter the fight from their repair point or replacement point (if the vehicle was a catastrophic kill).

## **3. Ammunition.**

**a. Live Ammunition Download Responsibility.** Accountability, movement, safeguard, and handling of live ammunition is the rotational unit's responsibility per unit SOP and regulations. After completing live fire operations, the rotational unit's commander must certify in writing all live ammo the removal of Class V from all vehicles, weapons systems, and personnel.

**b. Ammunition Cross-Level.** Ammunition cross-level or transfer from catastrophic kills is not authorized. Ammunition may be cross-leveled from vehicles determined as firepower/mobility kills with SBD or vehicles with real-world maintenance faults.

**4. Medical Support.** The rotational unit is responsible for maintaining the capability to conduct real-world casualty evacuation, stabilization, and treatment throughout live fire operations.

**a.** The following designated medical support package will be prepositioned at FSS Gap for Company or Task Force CALFEX's or within the BCT TAA for BCT LFX.

(1) 1 x medical provider (Physician or Physician's Assistant)

(2) 2 x qualified MOS 68W medics

(3) 2 x fully stocked aid bags and trauma supplies sufficient for immediate stabilization and treatment of serious injuries

(4) 1 x wheeled ambulance (i.e., FLA or Stryker MEV Variant) with FM communications

b. These personnel and equipment are not available to treat notional casualties. Medical personnel must maintain radio contact with ZULU TAC and conduct hourly radio checks during live fire operations.

### **B-8 Rotary Wing and UAS Operations.**

**1. Live Hellfire.** Units desiring to conduct Live Hellfire training while at the NTC can contact Eagle03/03A NLT D-60. Units must provide missiles from their home station STRAC allocation. Units provide Eagle 03/03A with their Hellfire missile shoot concept NLT RSOI 01.

**2. Training Requirements to Complete at Home Station.** The following is a list of training prerequisites, by echelon, before arrival to NTC:

a. Attack aircrews must be aerial gunnery qualified IAW TC 3-04.45, JAN2014. Waivers will be considered on a case by case basis by the Commander, Operations Group (COG).

b. Utility and Cargo Helicopter Door gunners must be qualified IAW TC 3-04.45, JAN2014. Waivers will be considered on a case by case basis by the Commander, Operations Group (COG).

c. All aircrews participating in maneuver live fire exercises must attend both the unit Combined Arms Rehearsal and the full mounted rehearsal to synchronize their execution with the maneuver plan.

d. Gunnery Requirements for both Aviation and BCT UAS. To participate in an LFX, completion of Table VI, within twelve (12) months is mandatory – no waivers. UAS crews who are not Table VI qualified may still participate as strictly an ISR/IC role to collect information, provide situational awareness, observe effects and conduct BDA. Crews will not conduct laser operations, provide laser target locations or any method of indirect fire adjustments.

**3. Briefings:** In order to conduct an air assault during live fire, the following rotational training unit and OC Team personnel (or their designated representative) must attend the following meetings and rehearsals:

<b>Event</b>	<b>RTU Personnel</b>	<b>OC Team Representative</b>
Initial Planning Conference	<b>Brigade Aviation Element Rep*</b> Air Mission Commander Liaison Officer (AVN) Aviation Task Force S2 <b>AVN TF S3 Rep*</b> Flight Lead(s) <b>Ground Force Rep*</b>	<b>BAE OC*</b> <b>AVN Lift Team OC*</b> ATK AVN OC AVN CP OC <b>Ground Force OC*</b>
Air Mission Coordination Meeting	<b>BAE Rep*</b> <b>Air Assault Task Force S3 *</b>	<b>AATF S3 OC*</b> <b>BAE OC*</b>

	AATF S2 AATF S4 AATF S6 AATF Fires Support Officer AVN Lift LNO AVN ATK LNO MEDEVAC LNO <b>AVN TF S3 Rep*</b> AVN FSO <b>Air Mission Commander*</b> <b>Flight Lead(s)*</b> FSC Commander <b>Ground Force Commander*</b>	AATF S2 OC AATF S4 OC AATF S6 OC Brigade Fires OC AVN TF S3 OC <b>AVN CP OC *</b> <b>AVN Lift OC*</b> MEDEVAC OC ATK AVN OC AVN FSO OC FSC OC <b>Ground Force OC*</b> <b>Dragon OC*</b>
Air Mission Brief	<b>AATF CDR *</b> <b>BAE Rep*</b> <b>AATF S3*</b> AATF S2 AATF S4 AATF S6 AATF Fires Support Officer <b>AVN TF CDR*</b> AVN TF S2 <b>AVN TF S3*</b> AVN TF S4 AVN TF S6 AVN TF Fires Support Officer <b>AVN SWO*</b> <b>AVN Mx CDR*</b> All flight crew members (ATK, Lift, MEDEVAC, UAS) FSC Commander <b>Ground Force Commander and designated leaders*</b>	<b>BAE OC*</b> AATF S3 OC AATF S2 OC AATF S4 OC AATF S6 OC AATF Fires OC AVN S3 OC AVN CP OC AVN S2 OC AVN S4 OC AVN S6 OC <b>AVN Fires OC*</b> <b>AVN Lift OC*</b> MEDEVAC OC <b>ATK AVN OC*</b> UAS OC (if used) <b>AVN FSC OC*</b> <b>Ground Force OC*</b> <b>Dragon OC*</b>
Combined Arms Rehearsal	<b>AATF CDR*</b> <b>BAE Rep*</b> <b>AATF S3*</b> AATF S2 AATF S4 AATF S6 AATF Fires Support Officer <b>AVN TF CDR*</b> AVN TF S2 <b>AVN TF S3*</b> AVN TF S4 AVN TF S6 AVN TF Fires Support Officer <b>All flight crew members*</b> (ATK, Lift, MEDEVAC, UAS) <b>AVN Mx CDR*</b> <b>FSC Commander*</b>	<b>BAE OC*</b> Brigade S2 OC Brigade S3 OC Brigade S4 OC Brigade S6 OC Brigade Fires OC <b>AVN S3 OC*</b> AVN S2 OC AVN S4 OC AVN S6 OC <b>AVN Fires OC*</b> <b>AVN CP OC *</b> <b>AVN Lift OC*</b> <b>ATK AVN OC*</b> MEDEVAC OC UAS OC (if used) FSC OC

	<b>Ground Force*</b>	<b>Ground Force OC*</b> <b>Dragon OC*</b>
Air Crew Brief	<b>All Air Crew Members*</b> <b>AATF S3*</b> <b>BAE Rep*</b>	<b>AVN Lift OC*</b> <b>MEDEVAC OC*</b> <b>ATK AVN OC*</b> <b>UAS OC (if used) *</b> <b>Dragon OC*</b>
Aviation Task Force Rehearsal	<b>AATF CDR and subordinate leaders*</b> <b>AVN TF CDR*</b> <b>AVN TF S3*</b> <b>AMC (each serial)*</b> <b>Pilots In Command (each chalk)*</b>	<b>AVN CP OC*</b> <b>AVN Lift OC*</b> <b>MEDEVAC OC*</b> <b>ATK AVN OC*</b> <b>UAS OC (if used) *</b> <b>Dragon OC*</b>

In addition to the above-mentioned meetings, All air assault and deliberate attack missions will require a Back Brief to 52ID. Below are the required attendees for all back briefs:

<b>Event</b>	<b>RTU Personnel</b>	<b>OC Team Representative</b>
AASLT Division Back Brief	<b>AATF CDR*</b> <b>AVN TF CDR*</b> <b>Ground Force CDR*</b> <b>BDE S3 Rep*</b> <b>BAE Rep*</b> <b>AVN TF S3 Rep*</b>	<b>52ID Role Players*</b> <b>BAE OC*</b> <b>AVN Lift/ATK Team OC*</b> <b>Ground Lead Force OC*</b> <b>DRAGON OC*</b>
Delib. Atk Division Back Brief	<b>AVN TF CDR*</b> <b>AVN TF S3 Rep*</b> <b>ATK CO CDR*</b> <b>ATK AMC*</b>	<b>52ID Role Players*</b> <b>AVN S3 OC*</b> <b>ATK Team OC*</b> <b>DRAGON OC*</b>

**4. General Directives.** All personnel must possess body armor with Army issued plates while in live fire areas regardless of live fire area status. Uniform is unit directed when AO Dragon is GREEN. Uniform is fit-to-fight when the live fire area is RED. The fit-to-fight uniform consists of the following minimum:

- a. Body armor/Air Warrior armor with SAPI plates.
- b. Aircrew members must carry ACH on board their aircraft.
- c. APEL approved eye protection and hearing protection.
- d. All aircrew members wear full NOMEX uniform and approved flight boots.
- e. All AC2 and LFX Graphics.

**5. Aviation.** Rotational unit aircraft in the live fire area operate under the control of the following agencies in priority: The Aviation Trainers (Eagles), ZULU TAC, and Range Operations.

**a. Aviation Trainers.** Unit aircraft escorted by an Eagle OC/T conduct tactical operations per instructions from their chain of command.

**b.** All aviation units must request entrance into the live fire area via their BAE, designated airspace management cell, or Zulu TAC on 64.500 SC/PT and maintain positive communications with Zulu TAC at all times.

**c. Zulu TAC.** Unit aircraft that are not escorted by an Eagle OC/T must establish contact with Zulu TAC (64.500) before entering the live fire area. Aircraft must not climb above the coordinating altitude while attempting to establish contact with Zulu TAC unless Sundance Advisory or Desert Radio has approved. If the aircraft is not able to contact Zulu TAC, it does not enter the live fire area.

**d. Range Operations.** Unit aircraft not escorted by an Eagle OC/T contacts Range Operations on FM 38.90 to enter the live fire area only when Zulu TAC is not operational.

**e. Coordinating Altitude.** Specified coordination altitude is in the 52ID ACO. To ensure safe operations, all fixed wing aircraft remain above the respective coordination altitude (AGL) and rotary wing aircraft remain at least 500' below respective coordination altitude (AGL) unless coordinated with Sundance Advisory or Desert Radio.

**f. Aircraft MILES.** Aviation units ensure that all aircraft have operational MILES. The unit removes the MILES from the firing aircraft IAW the current airworthiness release.

## **6. Communications Requirements for Live Fire.**

**a. Continuous Communications.** Unit flight operations maintain continuous communications and locations of all unit aircraft and indirect fire systems in the Live Fire area.

**b. Accountability.** The aviation unit must have positive control over all aircraft, vehicles, and personnel at all times. Not being able to account for any of the above halts the entire LFX.

### **c. Radio Procedures.**

**(1)** During LFX, Brigade Aviation Element (BAE) or designated airspace management cell utilizes FM 64.500 SC/PT for sequence and timing of aircraft within the BCT airspace.

**(2)** Additionally, all aircraft or designated aircraft within the flight monitors FM 64.500 SC/PT for sequence and timing within the BCT airspace.

**(3)** All aircraft within the flight, within R2502, monitor desert Radio.

**(4)** Aircraft that lose communications with their OC/T must signal the OC/T IAW the AC2 brief, assume a "GREEN" status, immediately land, and re-establish communications with the OC/T. Flights operating with an OC/T escort require an aircraft in contact with an OC/T. Aircraft in a flight experiencing a loss of communications assume a "GREEN" status and remain with the flight.

**d. Reporting Use of Red Star Clusters and Red Smoke.** Aircrews report the use of all Red Star clusters and Red smoke to the chain of command and Eagle OC/T.



**7. Precautionary Landing Procedures.** Aircraft experiencing a precautionary landing execute the appropriate emergency procedures and notifies Zulu TAC and their chain of command. The aviation unit should recover the crew and aircraft as soon as possible. Aircraft report their current location to Zulu TAC and confirm weapons systems are "Green and Clear." If the aircraft lands forward of firing ground elements, the aviation unit recovers the crew immediately. Recover the aircraft at a time which does not interfere with the ground scheme of maneuver. The aviation unit's chain of command notifies Zulu TAC for the coordination of a No Fire Area around the aircraft's location and a future time to recover the aircraft.

**8. Situational Awareness Requirements.** All aircraft Pilots in Command (PICs) must graphically depict the following on the maps: artillery firing areas (PAAs), mortar firing points (MFPs), and friendly ground positions down to Battalion / Task Force level. Pay special attention to the location of small units (e.g., scout observation points). Maps are 1/50,000 scale.

**a. Overhead Fires.** No overhead aviation fires.

**b. Target Pits.** Aircraft do not hover over target pits due to the potential hazard of radio transmissions setting off the pyrotechnics.

**c. Fratricide Prevention.** Aircraft must adhere to all published maneuver graphics and airspace control measures to afford protection from friendly fires.

**d. Engagements in Vicinity of Troops.** Unit aircraft escorted by an Eagle OC/T may conduct properly approved live fire engagements in proximity to both protected and unprotected troops using minimum safe distances designated by and at the discretion of the Eagle OC/T Team Senior Aviation Trainer and Dragon Team Senior Live Fire Trainer.

**e. Minimum Safe Distance.** The MSD of each weapon system is IAW FM 3-09.32, JAN2014, The minimum safe distance for 30mm TP, .50 Cal., and 2.75" rockets is 500 meters. Units must ensure they deploy to the NTC with appropriate SDZ overlays (at the required scale) for planning.

**9. Safety.** Safety and risk management is the unit commander's responsibility. The senior aviation trainer reserves the right to ground any aircrew, halt any vehicle, or otherwise stop any unit operation if he has reason to believe a safety hazard exists. The senior aviation trainer is the only one who authorizes the resumption of training.

### **B-9 Close Air Support.**

**1. Control.** A qualified Joint Terminal Attack Controller (JTAC) or Forward Air Controller (FAC-A) must use Type 1 Control procedures for all live CAS engagements. Commander 52ID may authorize Type 2 or Type 3 Control after consulting with Raven 07. A Raven OC/T must be present for all live CAS engagements. Note: All CAS procedures will be compliant with AFI 11-214 AIR-TO-GROUND JOINT LIVE FIRE EXERCISE PROCEDURES pending the following further restrictions:

**a.** CAS targets within 5,000 meters of any personnel must have a visual mark. Marks at NTC are limited to the following:

**(1)** 2.75 inch WP / HE / SP / TP or JSLIST rockets. TP rockets require multiple releases.

**(2)** 20mm, 25mm 30mm guns TP / HEI

**(3)** 60mm, 81mm, 120mm MTR, 105mm, 155mm HE / WP / ILA / SMK

**(4)** 120mm TPCSDS, HEAT-TP-T

**(5)** FAC-A delivered BDU-33 / MK-76

**(6)** VDL Capture

**(7)** Smoke grenades delivered from RW (hand tossed)

**(8)** .50 Cal

**(9)** 40mm grenades delivered by MK-19

**(10)** AT4 84mm

**b.** GP Bombs and inert ordnance are not an acceptable mark. Give all abort calls in the clear.

**c.** JTAC / FAC-A must pass a CAS 9-line brief to the aircrew prior to the aircraft departing the IP / CP for each CAS attack. Terminal Attack Controllers use the following considerations in developing their 9-line briefing:

**(1)** FLOT and other friendly forces (COLTS, Scouts, TACs, etc.)

**(2)** Fire Support Coordination Measures

**(3)** Artillery and mortar locations / gun target lines

**(4)** Airspace conflicts / Airspace Control Measures

**d. Self-Illumination.** Aircraft released LUU and Rocket Flares are authorized. Range-to-fuse function must occur at least 500 meters away from friendly units' positions. Range-to-impact must occur at least 800 meters from friendly units' positions.

**e.** Aircraft operate with IFF systems activated at all times.

**f.** The FLOT and individual positions forward of the FLOT must be marked to allow for quick aerial identification of the friendly positions during night-live CAS operations only. FAC-As and attack aircraft must confirm location of friendly troops.

**g.** VMC weather criteria is 1500 feet / 3 nautical miles or at least 500 feet above the highest portion of the weapons delivery pattern, whichever is higher. (N/A for fixed wing level deliveries above 5,000 feet AGL.) For rotary wing operations the ceiling must be 800 feet AGL or at least 500 feet above the highest portion of the weapons delivery pattern, whichever is higher.

**h.** CAS with live ordinance may over fly but not "hold" over friendly troops. Aircraft never overfly friendly troops if the aircraft has "hung" ordinance.

**i.** No cluster munitions; however, coordinate dependent weapons (JDAM) are authorized at the NTC. AGM-65 is authorized on Leach Lake targets 3, 4 and 5 per safe-range employment restrictions.

j. Raven OC/Ts direct aircraft that are unable to expend ordnance in live fire to an alternative target at Leach Lake Tactics Range that is at least 5,000 meters from any personnel.

## **2. Airspace Management:**

**a. Coordinating Altitude.** The coordination altitude for R2502 N/E “The NTC Range-Complex” are IAW the Green Flag West Spins published for each rotation. Violation of the coordinating altitude results in a range foul for the aircraft.

**b. Airspace Coordination Area.** Activate all formal and informal ACAs through 52ID FSE.

**c. Lateral Separation.** Indirect fires and CAS may attack different targets simultaneously if the indirect fire GTL and CAS target are coordinated with an informal / formal ACA. During live fire, CAS must also adhere to the live fire CAS minimum altitudes.

**d. Time Separation.** When below 5,000 feet Above Ground Level (AGL), CAS, artillery, and mortars may attack the same target provided a minimum of 30 seconds separation between the last round on the ground and the first aircraft delivered ordnance on the target. Aircraft must not violate active GTLs or live fire CAS minimum altitudes.

**e. Altitude Separation.** CAS, artillery, and mortars may attack the same target simultaneously using Maximum Ordnance or ORD 1 procedures while adhering to live fire CAS minimum altitudes. Units may use the Maximum Ordnance procedure provided aircraft remain at least 1,000 feet above the direct and indirect fire trajectories and their effects. Units must not establish a single Maximum Ordnance over their sector / zone for an entire battle. When using ORD 1 procedures, aircraft must remain at least 25 degrees laterally separated from the artillery GTLs until crossing the target area.

**f. CAS Minimum Altitude.** The minimum altitude for all CAS employment during live fire operations varies across the battlefield. CAS employed within 8,000 meters of the FLOT requires a minimum altitude of 5,000 feet AGL based on the Vertical Hazard Distances (VHD) of active direct fire SDZs. The VHD width is equal to the width of all active SDZs. CAS employed greater than 8,000 meters from the FLOT may employ as low as 300 feet AGL unless the target is within the range of indirect fires, in which case the minimum altitude is 3,000 feet AGL.

**g. Minimum Safe Distances.** The minimum safe distances for bombing and strafing for both fixed and rotary wing aircraft are taken from Table 37 in the most currently published Joint Fire (J-FIRE) (FM 3-09.32).

**h. Applicability.** This table establishes minimum distances that ground JTAC / TACP personnel may be safely located in relation to the target / impact area of standard munitions. The area within the limits established by this table is designated the danger area. Minimum safe distances are from the target / impact area, and for a ground function only (no airburst munitions). Additionally, range features can effect weapon impact points (e.g., high terrain short of the intended target may intersect weapon fly out trajectories, causing short impacts). Only the weapon listed may use the distances contained in the table and aircrew must adhere to specific remarks for a weapon if they are not listed. Only the following aircraft may utilize the MSD table: A-10, AC-130, AV-8B, B-1, B-2, B-52, F-15E, F-16, F/A-18, AH-1, and UH-1.

**i. Parameters Assumptions.** Aircraft attack parameters must be at or below 15,000 feet AGL for level or diving deliveries, and at or below 20,000 feet AGL, 540 knots true air speed (KTAS) for level LGBs. For GBU-31/32/38/39 munitions from a bomb-on-coordinate (BOC) mode, altitude and release

airspeeds are limited by range regulation parameters and weapon batter life. B-1, B-2, and B-52 must reference Note 5, and AC-130 must reference Note 6.

**j. Multiple Deliveries.** Ripple / string/ stick deliveries must be less than 500 feet total length, with a maximum of six weapons. For IAMs deliveries, a 250 foot maximum impact distance from the primary target location are used for all pattern-managed drops.

**k. Ammunition / Bullet Numbers.** For AC-130 operations, ammo numbers are taken from AFI 11-2AC-130v3. Ricochet fan numbers are SAFE RANGE-derived for 20mm and 30mm (extrapolated for 25mm) fighter strafe passes: single drop fighter strafe MSD numbers are Joint Munitions Effectiveness Manual (JMEM) derived. Helicopter ricochet fans are SAFE RANGE-derived and MSD numbers are JMEM derived.

**l. Rocket Deliveries.** Fixed-wing parameters: at or below 15,000 feet AGL, 540 KTAS, 15-degrees of dive, 8,000 feet slant range. Rotary wing parameters: running / diving fire with 5-20 degree dive angle, two round burst, and forward flight.

## **B-10 Intelligence.**

**1. Coverage.** All MI assets must be equipped with an operational MIC vest (if dismounted), vehicle MILES or under the immediate control of an OC/T while operating in the Live Fire area forward of the LD or in the main defensive area. No unit is authorized forward of the FLOT without OC/T coverage.

**2. Documents.** No simulated EPW operations in live fire.

**3. Virtual, Constructive and Live Intelligence.** Live, Virtual, and Constructive MI assets enable the unit to gain intelligence on the OPFOR and terrain. Units may request division assets to augment organic capabilities in support of live fire operations.

**4. LRSD Operations.** Long Range Surveillance Detachment (LRSD) operations in Live Fire are planned by the 52ID DTOC. Units can request DIV LRSD to conduct observation for indirect fire and CAS missions.

## **B-11 EA/EW Operations.**

**1. Overview.** Electronic warfare (EW) operations follow the established procedures used during Force-on-Force operations with the following exceptions:

**2. Imitative Communication Deception (ICD)** are not authorized during live fire operations.

**3. Authority.** 52ID DTOC is the approving authority for positioning of EW assets out of sector during Live Fire operations.

**4. Restrictions.** EW is not authorized against TACAIR during Live Fire operations. All TACAIR communications in Live Fire are BLUFOR/Friendly communications.

**5. Reporting.** The Deployable Intelligence Support Element (DISE) reports all combat information and TACREPs to the 52ID DTOC during Live Fire operations.

**6. De-confliction.** Target frequencies are authorized through Division G6 via Ops Group IOT de-conflict prior to JX (jamming).

## **B-12 MILES Engagements.**

### **1. MILES Engagement Requirements.**

**a. Wearing of MILES.** Miles is necessary to control the training scenario for safety purposes and to replicate effects of weapons above the caliber of 5.56mm during UTM operations. Adjudicate soldiers and vehicles with non-functioning miles as safety kills.

**b. Use of Weapons Above 5.56mm.** COEFOR and BLUFOR Soldiers with weapon systems above 5.56 mm must continue to use blank ammunition in support of the MILES system.

**c. MILES Alarm.** Treat any Soldier with a MILES alarm as a casualty using the MILES card.

## **B-13 Live Fire Targets**

**1. Target Types.** There are several targets available in the NTC live fire maneuver area. Targets and associated pyrotechnic signatures demonstration to rotational units during the RSOI Live Fire Effects Brief. **ALL personnel entering the live fire exercise area are required to attend this brief. It is the training units responsibility to ensure and track attendance.** There are no moving ground targets at the NTC. Remotely Piloted Vehicle Targets (RPVT) aerial moving targets may be employed with specific coordination before the rotation (see para. B-5.7.)

**a. Target Lifters.** Target lifters are remotely operated mechanical targets used throughout the live fire training area to replicate enemy vehicle and personnel. Each target has ballistic hit detectors. Targets will sense when a round strikes it and registers it as a kill and then will drop. The target pits may cause vehicle rollovers if not identified properly and bypassed safely. Personnel and equipment may maneuver near but will not remain within 10 meters or 30 feet of a target pit due to pyrotechnics minimum safe distance. The use of target pits as vehicle or dismounted fighting positions is prohibited. Tampering with or handling target pyrotechnic devices is not authorized at any time by rotational unit personnel. Each target has a unique silhouette and covered with a distinct pattern of reverse polarity thermal paper. Examples of these silhouettes as follows:

**T90**



**BMP3/BTR90**



**BRDM**



**Dismounted Troops**



**b. Drop Targets.** Drop targets are typically used to replicate dismounted infantry inside trench systems, urban objectives, and complex terrain. These targets are designed to drop or fall following center-chest hits with small arms. Soldiers clearing the trench or urban objective must immediately pull down and move aside any target that does not fall on its own. Any noncombatant targets present should be pulled down as well, even if not engaged. In live fire, never move past a target that is still standing.

**c. Hard Targets.** Hard targets (vehicle hulks) throughout the live fire training area for engagement primarily by indirect fire, rockets, and missiles. Due to ricochet hazard, units will only engage hard targets with indirect fire, TOW missile variants, Javelin missiles, AT-4 munitions, attack aviation (30mm, 2.75mm rockets, Hellfire missiles), USAF fixed wing platforms, and service 120mm, 30mm, 25mm Service Ammunitions HEAT.

**2. Target Overkill.** If a target is engaged and it does not go down after being hit twice with 120mm or three times with 25mm, move to another target. If the target continues to emit direct fire signatures, units should re-engage.

**3. Pyrotechnics.** Battlefield Effects Simulators use pyrotechnics to replicate enemy weapons signature. The NTC uses three simulators. These replicate hostile fire, catastrophic kill, and ATGM or SAMs. Each has its unique pyrotechnic signature.

**a.** Simulation of hostile fire replicates main gun fire from enemy vehicle targets or weapons fire from dismounted enemy troop targets. When you observe these signatures, you are in direct fire contact with the enemy.

b. The steel-on-steel signature that appears as a white star cluster replicates a hit on an enemy vehicle by a friendly weapon system. This visual cue means the enemy vehicle was hit and destroyed by live main gun rounds or by one of the MILES TOW or OC/T lasers.

c. The Smokey Sam is a non-explosive rocket used to simulate both anti-tank guided missiles and surface to air missiles.

**4. Point Blank Fires.** No fires within 1 meter at any target due to ricochet hazards.

#### **B-14 Weapon Safety Posture (WSP) and Weapons Control Status (WCS)**

1. For the duration of the exercise, the training unit will remain in a “Red” status. However, deviation to the Weapons Safety Posture (WSP) and Weapons Control Status (WCS) are designated by the rotational unit chain of command and executed IAW unit SOPs. A specific WSP or WCS can be directed by 52 ID. By exception, NTC OC/Ts may direct a WSP or WCS for specific safety concerns.

2. WSP and WCS definitions as follows:

##### **WEAPONS SAFETY POSTURE “AMBER”**

52ID does not utilize an “Amber” posture at the Division level. Units whose SOP follows the FORSCOM “Red/Amber/Green” method, may utilize their internal SOP for additional control so long as it does not violate any 52ID directed WSP.

##### **WEAPONS SAFETY POSTURE “RED”**

Claymore/Demo. Blasting caps may be inserted. Firing device may be connected, but must remain on safe.

Javelin/ Dragon/AT4/Stinger. Launchers configured for firing with safeties engaged.

MICLIC. Vehicle can raise rocket.

Live Stinger or Hellfire Missiles. Live Stinger or Hellfire missiles require a separate request for RED status due to the extremely large SDZs. Units must request and receive “RED status for stinger” or “RED status for hellfire” prior to firing those munitions.

### **WEAPONS SAFETY POSTURE “RED”**

Direct and Indirect firing is authorized. All weapons may be loaded, and rounds chambered, but must be kept on mechanical or electrical safe until a target is positively identified and the gun-target line is clear.

When units go into a RED status, they need to ensure 100% accountability of all personnel and vehicles and all personnel are wearing the proper PPE. Field artillery and mortar unit FDC/POCs need to ensure FDCs, FECC/FSEs and FISTs have all fire support coordination measures to include all air control measures. FDC and FSEs must maintain communication with higher HQ.

Lasers. Lasers are considered direct fire weapons and may be used without eye-safe filters during live fire. Units must request RED status when not in a RED status. When granted, lasing is executed only upon an OC/T's verification that the target area is clear.

Field Artillery and Mortars. FA and mortars can execute fire missions against targets after receiving clearance from higher headquarters and FDC OC/T personnel. Direct Fire Mode. Field Artillery units may engage targets with direct fire only when approved by the Senior Field Artillery Trainer and upon granting of Red status by Zulu TAC.

Attack Helicopters. Electrical arm switches are on Safe or Stand-by.

Bradley Fighting Vehicles. Electrical or manual safe engaged, ghost round may be cycled; missiles or ATWESS may be loaded in launcher.

Tanks. Battle carry per unit SOP, electrical and manual safe engaged.

Machine Guns/COAX. Manual safe with bolt locked to rear.

Javelin/AT4. Configured for firing with electrical and/or manual safe engaged.

### **WEAPONS SAFETY POSTURE**

Check Fire. All weapon systems cease all firing immediately. Artillery must unhook lanyards.

Check Fire Freeze. (Artillery and Mortars Only) Cease all firing immediately. Do not move anything on the howitzers or mortar tubes. All personnel evacuate vehicles and stand to the rear of howitzer, mortar, or FDC.

Cease Loading. (Artillery only) Continue firing current rounds in tube only. Do not load additional ammunition.

Cease Fire. Stop firing. Place weapons on manual safe. Artillery must unhook lanyards.



### **WEAPONS SAFETY POSTURE “GREEN AND CLEAR”**

All weapons completely cleared, any misfires removed, all weapons systems inspected by the vehicle commander or first line supervisor. Ammo may still be in ready boxes.

Bradley Fighting Vehicles. All BFV series weapons are downloaded and their 25mm feeder assembly pulled, cleared, timed, and reinstalled.

Attack and Armed Reconnaissance Helicopters. Master Arm Switch and LASER switch in the OFF position, aircraft downloaded, including ATWESS.

MLRS. Rocket pods on launcher with LLM in stowed position and W19/W20 cables disconnected from rocket pods.

MICLIC. Charge and rocket loaded and secured; rocket pin and rocket electrical cable disconnected.

Howitzers. Weapon on safe and bore verified clear.

Claymore/Demo. Claymore mines and demolitions may not be primed.

### **WEAPONS CONTROL STATUS**

Weapons Hold. Engage only if ordered to engage.

Weapons Tight. Engage only targets that are positively identified as enemy.

Weapons Free. Not authorized at the National Training Center.