

**BY ORDER OF THE COMMANDER
DOVER AIR FORCE BASE**

**DOVER AIR FORCE BASE
INSTRUCTION 91-205**

18 MAY 2012

Safety



**GENERAL SAFETY FOR USE OF BLANK
AMMUNITION, GROUND BURST
SIMULATORS AND PYROTECHNICS
DURING COMBAT TRAINING EXERCISES**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available for downloading or ordering on the e-Publishing website at www.e-Publishing.af.mil.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: 436 AW/SEW

Certified by: 436 AW/SE
(LtCol James DeHaan)

Pages: 37

This instruction ensures we are in compliance with AFD 91-2, *Safety Programs*. It establishes procedures and applies to all personnel involved in the handling, storage, transporting, operation and disposition of battlefield ground burst simulators (GBS), signal/smoke flares or grenades and blank ammunition. It establishes proper procedures for all personnel expending training and exercise munitions according to Air Force Manual 91-201, and AFRC Sup, *Explosive Safety Standards* as well as applicable supplements. Compliance is mandatory, but only as minimum standards. It applies to all personnel assigned to the 436 & 512 Airlift Wings during local Expeditionary Combat Skills training (ECST) at Dover AFB, and to personnel assigned to Operational Readiness Exercises (ORE's) deployed at other training locations. If unit-level Operating Instructions (OI) are developed, provide a copy to Wing Safety Weapons (436AW/SEW) for review prior to final approval IAW AFMAN 91-201, para. 7.25.2. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF 847, *Recommendation for Change of Publication*; by sending the AF 847 to the 436 AW/SEW office at Dover AFB DE. Ensure that all records created as a result of the processes prescribed in this publication are maintained in accordance with AFMAN 33-363, Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>.

- | | | |
|----|--|---|
| 1. | Responsibilities: | 2 |
| 2. | Issue, Turn-In, Expenditure, and Controlling Procedures: | 3 |

3.	Inventory Procedures:	7
4.	Exact location and method of employment:	7
5.	Emergency or Abnormal Conditions Actions:	7
6.	Munitions Residue Disposition:	8
7.	Expenditures:	8
8.	Training:	8
9.	Transportation:	9
10.	The absence of a specific safety or procedural requirement in this instruction does not indicate that such a requirement is unnecessary.	12
Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION		13
Attachment 2—SAMPLE AF FORM 483, CERTIFICATE OF COMPETENCY		15
Attachment 3—FIELD EXERCISE BLANK AMMUNITION ACCOUNTABILITY SAMPLE LOG		16
Attachment 4—FIELD EXERCISE LIVE MUNITIONS ACCOUNTABILITY SAMPLE LOG		18
Attachment 5—EXERCISE SAMPLE WRITTEN PROCEDURES/PARTICIPANT BRIEFING		20
Attachment 6—SAMPLE EXERCISE/TRAINING EVENT RISK ASSESSMENT		25
Attachment 7—BLANK AMMUNITION/PYROTECHNIC SAMPLE ILLUSTRATIONS		29
Attachment 8—121 AEW CES/EOD GENERAL PYROTECHNICS USER GUIDE		34
Attachment 9—BASE “X”		37

1. Responsibilities:

1.1. It is the responsibility of all commanders or their designated representatives to ensure that live ammunition (ammo) is not introduced into a training environment where live and blank ammo could be commingled or mistaken for each other. IAW AFMAN 91-201, the responsible commander or the designated representatives shall assign an Exercise Team Chief (ETC) to certify that only blank ammo is loaded into weapons magazines intended for use during training exercises.

1.2. It is the responsibility of the munitions accountability systems officer (MASO), to ensure that customers receive the proper blank ammo and pyrotechnics requested.

1.3. It is the responsibility of the DDI to visually inspect all blank ammo and to verify that no live ammo has either been commingled with blank ammo or loaded into weapons magazines.

1.4. Users are directly responsible for the control and use of ammo issued to them for either real world or exercise purposes. Accountability of assets, to include expenditures, will be validated upon the issue and turn-in of the assets, at the beginning and end of each shift, or whenever required to eliminate a discrepancy.

1.5. IAW AFMAN 91-201, it is the responsibility of the ETC to prepare a risk assessment and comprehensive list of explosives detailing the national stock number (NSN), hazard class/division (HC/D), daily quantities, and explosive weights authorized for use in the exercise and a detailed list of locations where munitions will be deployed. The responsible unit commander must give written approval of the plan. Include wing weapons safety personnel in exercise planning and risk assessment when explosives shall be used.

1.6. ETC is responsible for ensuring that individuals who use exercise munitions are trained and qualified by Explosives Ordnance Disposal (EOD). Qualification is indicated by current AF Form 483, *Certificate of Competency*, (Attachment 2) issued and signed by a qualified/certified EOD technician as shown in Attachment 2. Personnel initiating smoke grenades, ground burst simulators or any other pyrotechnics shall carry the AF Form 483 on their person.

2. Issue, Turn-In, Expenditure, and Controlling Procedures:

2.1. Issue:

2.1.1. All munitions will be issued to an authorized account custodian.

2.1.2. The procedures for issuing, turn-in, and controlling procedures are located in the Munitions Customer Guides supplied to the customer account representative by the MASO.

2.1.3. All assets will be issued from MXS in proper shipping configuration. Non-standard packs are authorized as long as outer container material is same as standard packaging.

2.1.4. Once assets are issued to a custody account, it is the responsibility of that organizational commander or designated representative to issue the ammo to their personnel using an AF Form 1297, *Temporary Issue/Receipt Document*. Forms will be maintained for a period of 90 days from the date of the exercise termination.

2.1.5. Once issued to an authorized individual, the ammo may be distributed to those persons requiring munitions for training purposes as long as all persons are identified and briefed on safety and accountability.

2.1.6. Personnel and equipment will be inspected to ensure that live rounds of ammo are not introduced into an exercise/training environment.

2.1.7. Units must provide training to emphasize safe handling, weapon operation, use of blank and live ammo/explosives and operator maintenance. This training should be documented in the Career Field Education and Training Plan (CFETP), or on AF Form 1098, *Special Task Certification and Recurring Training*, in accordance with AFMAN 31-229.

2.1.8. Under no circumstances will blank ammo be issued to other than appointed personnel (account custodians), or an individual trained and qualified in accordance with this wing instruction and AFMAN 91-201.

2.1.9. ETC and any personnel requesting ammo will forward courtesy stored munitions pull requests to Munitions Operations the week prior to the exercise date. An individual identified on the front of the AF Form 68, **Munitions Authorization Record**, will draw the munitions using authorized transportation. Authorized individuals listed on the front and back of the AF Form 68 will certify expended munitions. Munitions must be justified and authorized by AFCAT 21-209.

2.1.10. Notify the unit explosive safety representatives if quantity requirements change for facilities licensed to store explosives on AF Form 2047, **Explosive Facility License (EFL)**.

2.1.11. Supervisors will ensure personnel are properly trained and possess an AF Form 483, **Certificate of Competency** (Attachment 2), prior to operating vehicles transporting explosives.

2.1.12. Ground burst or hand grenade simulators present a blast hazard, smoke grenades present a burn/fire hazard. Exercise caution around people, facilities and equipment. Free the area of combustible material within a ten foot radius. Monitor for proper functioning and disposal of residue.

2.2. Turn-in/Expenditure:

2.2.1. All unexpended rounds will be returned to the point of issue, along with any DUD/damaged ammo, upon completion of the exercise. ETC, or the designated representatives, will ensure all personnel and equipment are inspected for any live rounds, and that live and blank ammo is segregated.

2.2.2. All unexpended munitions will be returned to their original containers according to lot number. The quantity will be annotated on a piece of tape placed over the original quantity.

2.2.3. ETC, or the designated representatives, will visually inspect all ammo turned-in. Segregate live, blank, and expended rounds and upon termination return them to MXS MASO. Unexpended rounds must be returned in their original containers. Expended brass will be turned IAW procedures set forth by the MASO, (see Para 6).

2.2.4. Unit ADWSRs and ETC will ensure procedures for clean-up and accounting of expended brass and other training munitions are included in exercise and training plans.

2.3. Controlling: The following guidelines are in place for any 436 & 512 AW controlled exercises. Procedures to control live and blank small arms ammo during exercises will be established and strictly enforced as required by AFMAN 91-201.

CAUTION: ENSURE LIVE AMMO/MUNITIONS ARE NOT MIXED WITH MUNITIONS RESIDUE. SUPERVISORS OR TRAINING INSTRUCTORS ARE RESPONSIBLE FOR ENSURING LIVE AMMO IS PROPERLY SEGREGATED FROM MUNITIONS RESIDUE.

2.3.1. The ETC will appoint a properly trained official to ensure only blanks are loaded.

- 2.3.2. Prior to start of training, physically inspect all ammo pouches, rucksacks, mobility bags, jacket pockets and magazines to ensure no live ammo is introduced into the training environment.
- 2.3.3. During exercises involving training munitions, all magazines loaded with blank ammo will be marked with the color blue. Use blue paint or blue tape a minimum of 3” wide on the bottom 2/3 of the magazine to mark magazines loaded with blank munitions.
- 2.3.4. At the termination of training, perform the same process to ensure no unfired blank ammo or DUD pyrotechnics are either left unaccounted for at the training area or leaves the training environment by other than qualified personnel.
- 2.3.5. Perform and document inspection of blank ammo, GBS’s, smoke grenades and pyrotechnics to include a reconciliation of assets at the start of training, change of shifts, and end of day. Any discrepancy of conditions shall cause the training operation to be suspended until the abnormal condition is resolved.
- 2.3.6. Identify the process of loading, unloading, and marking magazines to include certification and separation of live and blank ammo.
- 2.3.7. Brief personnel regarding their safety and accountability responsibilities.
- 2.3.8. If any of the above conditions cannot be met, continuation with the exercise must be approved by the responsible exercise commander.
- 2.3.9. Ensure explosives are utilized, stored and/or handled in approved areas at the exercise training location only. Base “X” is the only authorized training area to conduct expeditionary combat skills training (ECST) by trained and qualified 436 SFS/S31 personnel (Attachment 9). Contact the 436 AW Safety Office, Weapons Safety Manager prior to conducting training involving blank ammo, pyrotechnics and GBS’s, or whenever training location must change. Follow the additional requirements IAW 436 SF OI36-2225.4 for ECST prior to using ground burst simulators, smoke grenades and blank ammo for training.
- 2.3.10. Personnel functioning GBS’s and smoke grenades require initial/annual training by an authorized EOD instructor IAW AFMAN 91-201.
- 2.3.11. Ensure all munitions residue (cartridge cases, smoke grenades, metal boxes, packing material, etc.) are returned to the Munitions Inspection section at the MSA.
- 2.3.12. Responsible commander will designate a representative(s) or armorer to monitor the installation/removal of blank ammo from magazines.
- 2.3.13. Live ammo is prohibited in the exercise area with the exception of one loaded M9 pistol carried by ECST Cadre. The bottom of the M9 magazine will be marked with red tape.
- 2.3.14. Personnel armed with live ammo **are prohibited** from participating in any exercise involving blank munitions.
- 2.3.15. When it is necessary to have live ammo present at an exercise involving blank munitions; the guard weapon should be an M9 to prevent commingling of training and live munitions.

2.3.16. If the guard weapon is an M16 Series Weapon, the 30 round magazines loaded with live ammo will be marked with red tape or paint no less than 3” wide visible on the bottom 2/3 of the magazine.

2.3.17. At no time will blank ammo be fired through a weapon that does not have a blank firing adapter (BFA) properly installed.

2.3.18. EFL’s issued solely for storage of exercise-use munitions, such as GBS’s, smoke grenades and blank ammo must state in the “Remarks” section of the AF Form 2047 and in the applicable OI, “For Duration of Exercise Only, Munitions will be returned to the Munitions Storage Area (MSA) at end of each exercise.” Licenses need not be rescinded at the end of each exercise.

2.3.19. Ensure munitions pick-ups and turn-ins are properly scheduled IAW Munitions Flight Squadron scheduling procedures. Improper scheduling will constitute a violation of explosive safety standards and can result in revocation of licensing.

2.3.20. Schedule exercise munitions turn-ins prior to exercise start date. Do not wait until the exercise is underway or completed to contact Munitions Operations to schedule turn-ins.

2.3.21. The turn-in of munitions includes all residual materials such as spent brass and other training munitions shall be enforced. All spent brass from the blank ammo will be picked up and returned to the point of issue at the end of the exercise. Segregate all unexpended misfired blank cartridges into a separate container prior to turn-in.

2.4. Use of devices:

2.4.1. Only US Air Force stock listed devices are authorized for use. Other military services using Air Force training areas are restricted to DoD stock-listed items while using designated training ranges.

2.4.2. Personnel will function GBS’s and smoke producing munitions IAW AFMAN 91-201.

2.4.3. GBS’s present a blast/fire hazard and smoke producing simulators present a possible toxic gas and fire hazard. Exercise caution around people, facilities and equipment. Free the area of combustible material within a ten-foot radius. Ensure the immediate area down wind is free of personnel. Maintain the following minimum distances:

2.4.3.1. Facilities without a facing window: Maintain a minimum separation of **100** feet.

2.4.3.2. Facilities with a facing window: Maintain a minimum separation of **200** feet.

2.4.3.3. Hardened facilities, including hardened aircraft shelters: Maintain a minimum separation of **50** feet.

2.4.3.4. Petroleum, oil and lubricants storage: Maintain a minimum separation of **200** feet.

- 2.4.3.5. Aircraft in the Open: Maintain a minimum separation **100** feet. If aircraft are explosive-loaded maintain a **200** foot separation.
- 2.4.3.6. Explosive operating locations, holding areas, open storage areas or butler-type storage facilities: Maintain a minimum separation of **200** feet.
- 2.4.3.7. Above ground magazines of block, brick, or concrete construction and earth-covered igloos: Maintain a minimum separation of **50** feet.
- 2.4.3.8. Personnel and vehicles: Maintain a minimum separation of **125** feet.
- 2.4.4. IAW environmental and safety standards, dispose of expended simulators, pyrotechnics, packing material and un-expended items to the munitions flight.
- 2.4.5. Explosives will only be transported in government *owned* or government rented vehicles. Under no circumstances will explosives be carried in privately owned vehicles of any type.
- 2.4.6. Follow guidelines in AFMAN 91-201 and safety TO's when firing smoke grenades.

3. Inventory Procedures:

- 3.1. A complete inventory of all blank and live ammo will be conducted prior to the start of the exercise, at the change of shift, at the end of the day, and at the end of the exercise.
- 3.2. All out of balance conditions shall cause the exercise to be terminated until the out of balance condition is resolved.
- 3.3. Attachment 3 will be used to document the inventory of all blank ammo. Forms will be maintained for a period of 90 days from the date of the exercise termination.
- 3.4. Attachment 4 will be used to document the inventory of all live ammo in the event live fire qualifications are required.

4. Exact location and method of employment:

- 4.1. The commander will appoint an ETC.
- 4.2. The ETC will prepare written procedures specific to each exercise using Attachment 5 of this document.
 - 4.2.1. Attachment 5 will be coordinated with the following authorities, in the following order:
 - 4.2.1.1. ETC (for approval/signature).
 - 4.2.1.2. Wing Weapons Safety Manager (for approval/signature).
 - 4.2.1.3. Responsible Commander (for approval/signature).
 - 4.2.1.4. Wing Weapons Safety Manager (for filing).

5. Emergency or Abnormal Conditions Actions:

- 5.1. Immediately report all accidents or incidents to your supervisor or senior member of your team.

5.2. A live round of ammo mixed in with blank ammo is an emergency situation. If found, stop all exercise activities, notify your supervision and the MASO, immediately. Exercise will not continue until authorized personnel can determine verification of ammo.

5.3. The Safety Official designated by the responsible commander or ETC, will have a cellphone or radio to enable him/her to contact emergency personnel, to include the security forces control center in the event of a mishap or abnormal condition.

5.4. The ETC will obtain a list of emergency numbers to contact from the exercise area in the event of a mishap or abnormal condition. Appointed individual will ensure the security forces commander, security forces controller, MASO, base medical personnel, fire department and weapons safety offices are notified of any mishaps and complete any necessary paperwork.

5.5. Unexploded Ordnance, (Ground Simulators/Pyrotechnics/Blank Ammo (DUD))

5.5.1. **Do not handle, kick or probe any unexploded ordnance!** The area adjacent to any unexploded ordnance will be marked with a red flag or any other highly visible marking device to facilitate their identification and establish an appropriate safe cordon.

5.5.2. EOD will be contacted through the Safety Official, and EOD will be the only personnel designated to breach the cordon area surrounding the DUD rounds. EOD is the only agency authorized to handle or dispose of DUD or damaged munitions.

5.5.3. At no time will DUD rounds be broken open.

5.6. In the event a blank or live round fails to fire, take the appropriate immediate action detailed in the appropriate weapon's operator manual.

5.7. In the case of an abnormal condition other than an emergency, stop the operation and contact the supervisor who will determine an appropriate course of action for the situation. An abnormal condition is a condition other than an emergency, which is not covered elsewhere, but warrants further consideration to determine if other actions are necessary to ensure a safe operation. Ensure the Wing Weapons Safety Office is notified of these situations.

6. Munitions Residue Disposition: Expended brass, pyrotechnics, and residues will be considered as live munitions and handled IAWAFMAN 91-201, live munitions handling requirements for the duration of the event until turned into the MSA or armory.

7. Expenditures: To the maximum extent possible, all expended brass and pyrotechnics generated during the training exercise will be picked up, inspected, placed in containers and returned to the munitions function.

8. Training:

8.1. An overall safety brief will be given by the ETC or EOD lead technician prior to commencing any training where munitions or explosives are involved. Brief personnel of their responsibilities regarding weapons safety and accountability. The brief must be recorded and the documentation will be kept for a minimum of 90 days. Records must include the following:

8.1.1. Name of the personnel who received the briefing.

- 8.1.2. Date the briefing took place.
- 8.1.3. A description, copy or location of briefing materials used to brief personnel.
- 8.1.4. The name of the person who provided the briefing.
- 8.2. The safety briefing will contain as a minimum the following points.
 - 8.2.1. Ammo identification, to include pictures of blank and live ammo.
 - 8.2.2. Blank/training ammo will not be fired/discharged any closer to personnel than specified below. All personnel firing blank ammo will have a blank firing adapter (BFA) affixed on the weapon.
 - 8.2.2.1. 5.56mm blank ammo, P/N: M200 will be fired no closer than **25 feet**. P/N M200 ammo is used in M16/M16A2 /M4 rifles, GUU5/P sub machine guns and M249 automatic rifles.
 - 8.2.2.2. 7.62 blank ammo, P/N: M80, will be fired no closer than **25 feet**. M80 ammo is used in the M60/M240 machine guns.
 - 8.2.3. Prior to starting or terminating training, conduct a thorough check of all ammo pouches, rucksacks, mobility bags and magazines for live ammo.
 - 8.2.4. Prior to firing any weapon, all personnel will be thoroughly indoctrinated in the proper handling of the weapon by Security Forces Squadron.
 - 8.2.5. All ammo will be pre-checked to determine if they are the types intended to be fired.
 - 8.2.6. Never allow a round to be chambered unless it will be immediately fired.
 - 8.2.7. All M-4 magazines that will be used with blank ammo will be clearly marked with blue paint to aide in easy determination of live versus blank ammo.

9. Transportation:

- 9.1. Transportation of explosives, both on and off-base, requires training and certification, proper equipment and vehicles, use of explosive transport routes, and proper notification procedures. Additional Duty Weapons Safety Representatives (ADWSRs) shall ensure unit personnel who transport explosives are properly qualified and are complying with the regulatory requirements to do so.
 - 9.1.1. Units with a mission that requires off-base transportation of explosives must adhere to CFR 49 and local directives for items such as bill of lading and vehicle inspection. Contact the 436 AW Transportation Management Office for further guidance.
 - 9.1.2. Training and certification.
 - 9.1.2.1. Explosive/hazardous drivers training for unit personnel must be provided by either the ADWSR or the unit VCO/VCNCO.
 - 9.1.2.2. Training will consist of the use of approved lesson plan and test. Lesson plans must provide the student with general knowledge of explosives being transported and the associated hazards. Individuals must score at least an 80 percent passing grade on the test to meet certification requirements.

9.1.2.3. Training lesson plans must be coordinated through the appropriate Wing Weapons Safety Staff.

9.1.2.4. Individuals must have a valid civilian driver's license and a GOV license.

9.1.2.5. Individuals must be fully qualified to operate vehicles to be utilized.

9.1.2.6. Military members will be certified for on and off-base transportation of explosives via the AF Form 483, *Certificate of Competency* (See Attachment 2).

9.1.2.7. Civilian government employees will be certified for on base transportation of explosives on the AF Form 483. As the general rule, civilian government employees must obtain a commercial drivers license for transportation of explosives off-base.

9.1.3. Equipment and vehicles.

9.1.3.1. ADWSRs will ensure that units utilize proper equipment and specified vehicles for the transportation of explosives.

9.1.3.1.1. Equipment:

9.1.3.1.1.1. As a minimum, two 2A:10BC fire extinguishers will be available for all vehicles transporting explosives; one mounted inside the cab and one mounted outside on the driver's side.

9.1.3.1.1.2. Tie-downs straps/chains.

9.1.3.1.1.3. Wheel chocks.

9.1.3.1.1.4. Storage container when appropriate for small loads.

9.1.3.1.1.5. Approved DOT placards.

9.1.3.1.1.6. Over-the-road emergency kits when required.

9.1.3.1.1.7. Tarpaulins to protect load from moisture and sparks (off-base transport only).

9.1.3.1.2. Vehicles:

9.1.3.1.2.1. Explosive movements must be completed in GOVs only. Under no circumstances are DoD munitions to be transported in personally owned vehicles.

9.1.3.1.2.2. Explosives shall be transported on flat beds or in cargo compartments only (with some exceptions for flightline and emergency response vehicles IAW AFMAN 91-201).

9.1.3.1.2.3. Explosive cargo will be tied-down/secured using proper tie-down points. Stakes on stake-bed vehicles shall be secured in place prior to any movement of explosives and ammo over the road.

9.1.3.1.2.4. Vehicles will be properly placarded.

9.1.3.1.2.5. When vehicles with plastic bed liners must be utilized to transport electro-explosive devices (EED), ensure configuration meets AFMAN 91-201 requirements.

9.1.3.1.2.6. Explosives shall be transported in their approved storage and shipping configuration as determined by the MUNS Squadron.

9.1.3.1.2.7. Vehicles transporting explosives shall have parking brake set and be properly chocked while parked. Chocks will be placed at non-steering wheel on vehicle.

9.1.3.1.2.8. Under no circumstances, will vehicles be refueled while loaded with explosive cargo.

9.1.4. Explosive routes.

9.1.4.1. On-base explosive routes.

9.1.4.1.1. On-base routes have been established for safe delivery and decreased risk of injury to personnel from explosives being transported between the MSA or Intransit Munitions Facility and Base X training area, or squadrons storing explosives under an authorized EFL. Delivery routes are established between Gate 5 and Commercial Gate to and from the Munitions Storage Area (MSA) or Intransit Munitions. Delivery routes are annotated on the Base Comprehensive Map, Tab D-8. Explosive routes are designated as primary and alternate routes; primary route (blue route) and alternate route (green route) will be utilized unless conditions dictate use of another route due to non-passable road conditions or maintenance. Hazard Division (HD) 1.1/1.2/1.3/1.4 munitions deliveries or departures shall utilize the primary route to/from Gate 5. No HD 1.1 or 1.2 munitions shall be transported, processed or delivered through the Commercial Gate without prior authorization from the Wing Weapons Safety Manager or Chief of Safety. Only HD 1.3 and 1.4 munitions are authorized for transport, processing, or delivery through the Commercial Gate. Use of any other route other than designated routes will be at the discretion of the Wing Weapons Safety Manager, 436 MUNS Munitions Flight Chief, and 436 SFS Operations Flight.

9.1.4.1.2. On-base explosive routes for licensed locations: On-base transport of explosives between the MSA and licensed locations is not restricted to primary and alternate routes; however, units must travel in authorized explosive transport vehicles via the most direct route between the explosives licensed facility and the MSA. Vehicles transporting explosives shall be utilized for the sole purpose of transporting explosives and shall not make ancillary stops at other facilities or locations. Explosives must be downloaded from vehicle and properly stored as soon as possible.

9.1.4.2. Off-base explosive routes.

9.1.4.2.1. Units with a requirement to perform explosive movements to off-base locations for operational or training requirements must adhere to both DoD and DoT regulations and local state and jurisdictional law. ADWSRs must ensure personnel who transport explosives to off-base locations are trained and certified IAW 49 CFR, the Defense Transportation Regulation, AFI 24-301 and para. 9.1.2.5 of this instruction. Individuals traveling off-base with explosives should:

9.1.4.2.1.1. Transport only the minimum quantity and type of munitions

necessary for the mission.

9.1.4.2.1.2. Know the most direct route between locations and make every attempt to utilize less populated areas, road and weather conditions, and force protection conditions.

9.1.4.2.1.3. Have an adequate means of communication along with base and local emergency response contact numbers.

9.1.4.2.1.4. Meet minimal standards for arming commensurate with mission, type munitions, and force protection conditions.

9.1.4.2.1.5. Notify base fire department and security forces desk prior to departure and upon arrival at both locations. Provide the fire department with HD and net explosive weight (NEW) of explosives being transported.

9.1.4.2.1.6. Do not stop at off-base locations for other than emergencies.

9.1.4.2.1.7. Ensure explosive compatibility requirements are met.

10. The absence of a specific safety or procedural requirement in this instruction does not indicate that such a requirement is unnecessary.

MARK D. CAMERER, Colonel, USAF
Commander, 436 Airlift Wing

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, 18 May 2006

AFMAN 91-201, *Explosives Safety Standards*, 12 January 2011

AFMAN 91-201, AFRC SUP, *Explosives Safety Standards*, 7 July 2009

Prescribed Forms

None

Adopted Forms

AF Form 1297, *Temporary Issue/Receipt Document*

AF Form 1098, *Special Task Certification and Recurring Training*

Abbreviations and Acronyms

AF—Air Force

AFI—Air Force Instruction

AFMAN—Air Force Manual

AMMO—Ammunition

AW—Airlift Wing

AWI—Airlift Wing Instruction

BFA—Blank Firing Adapter

DDI—Designated Disinterested Individual

DUD—Any explosive device failing to explode/detonate

EOD—Explosives Ordnance Disposal

ETC—Exercise Team Chief

GBS—Ground Burst Simulator

IAW—In Accordance With

MASO—Munitions Accountability Officer

MSA—Munitions Storage Area

OI—Operating Instruction

OPR—Office of Primary Responsibility

POC—Point of Contact

TO—Technical Order

Terms

Ammunition— Any munition designed to be thrust from a gun barrel or canister device by expanding gases resulting from burning propellant. Rockets would not be included in this definition.

Exercise Team Chief— Individual designated by the responsible commander to coordinate and provide oversight of the training exercise. The ETC shall be designated in writing by the commander or their designated disinterested official (DDO) to certify that only **blank** ammunition is loaded into weapons magazines intended for use during training exercises. The DDO is an individual “free of bias”; does not have a self-interest to the accountability/inventory of the blank ammunition, and is impartial to any audit interests.

Explosives— All ammunition, munition fillers, demolition material, solid rocket motors, liquid propellants, cartridges, pyrotechnics, mines, bombs, grenades, warheads of all types, explosives elements of ejection and aircrew egress systems, air-launched missiles and those explosive components of missile systems and space systems, and assembled kits and devices containing explosive material. Explosives, explosives weight, net weight, and other like terms also refer to the fillers of an explosive item. Fillers may be explosive mixtures, propellants, pyrotechnics, and other toxic substances. This term does not include liquid fuels and oxidizers that are not used with missiles, rockets, and other such weapons or explosive items.

Munitions— See “Explosives.”

Responsible Commander— Commander in charge of and exercising command level responsibility of the overall training exercise.

Attachment 2

SAMPLE AF FORM 483, *CERTIFICATE OF COMPETENCY*

CERTIFICATE OF COMPETENCY		CERTIFICATE NO. #
NAME (<i>Last, First, Middle Initial</i>) Your Name		DATE
COMMAND Your Command	INSTALLATION Little Rock AFB, AR	
HAS SUCCESSFULLY COMPLETED THE PRESCRIBED COURSE OF INSTRUCTION AND/OR PRACTICAL TEST AS REQUIRED BY CURRENT DIRECTIVES AND IS DEEMED QUALIFIED TO PERFORM THE DUTIES OF Explosive Driver		
TYPED NAME, TITLE AND ORGN Trainer Name	SIGNATURE	

AF IMT 483, 19850201, V2

REFRESHER TRAINING		
DATE	INSTRUCTOR	DATE REFRESHER

AF IMT 483, 19850201, V2

(REVERSE)

EXAMPLE FORM ONLY

Attachment 3

FIELD EXERCISE BLANK AMMUNITION ACCOUNTABILITY SAMPLE LOG

Date: Field Munitions Custodian: <i>Total Blank Ammunition Taken for Exercise:</i> 5.56MM Single: _____ 5.56MM Linked: _____ 7.62MM Linked: _____		
<i>Issued Blank Ammunition:</i>		
5.56MM Single:	Rounds To:	Individuals (AF Form 1297)
5.56MM Linked:	Rounds To:	Individuals (AF Form 1297)
7.62MM Linked:	Rounds To:	Individuals (AF Form 1297)
Shift Change Inventory: Day Shift: 5.56MM Single: _____ 5.56MM Linked: _____ 7.62MM Linked: _____ Swing Shift: 5.56MM Single: _____ 5.56MM Linked: _____ 7.62MM Linked: _____		
<i>Returned Blank Ammunition</i>		
5.56MM Single:	Rounds From:	
5.56MM Linked:	Rounds From:	
7.62MM Linked:	Rounds From:	
I certify that the above munitions were issued in the exercise and that all blank ammunition has been turned in. I also certify that all magazines/clips were empty of all rounds before and again emptied after the exercise.		

Name & Rank of Field Munitions Custodian	Signature	Date
Name & Rank of Exercise Team Chief	Signature	Date

Attachment 4

FIELD EXERCISE LIVE MUNITIONS ACCOUNTABILITY SAMPLE LOG

Date: _____		
Field Munitions Custodian: _____		
Total Live Ammunition Taken for Exercise:		
9MM Ball: _____		
5.56MM Clipped: _____		
5.56MM Linked: _____		
7.62MM Linked: _____		
Simulator, Projectile (M115A2): _____		
Simulator, Hand Grenade (M116A1): _____		
Smoke, Grenade (M18 Series): _____		
<i>Issued Live Ammunition:</i>		
9MM Ball:	Rounds To:	Individuals (AF Form 1297)
5.56MM Clipped:	Rounds To:	Individuals (AF Form 1297)
5.56MM Linked:	Rounds To:	Individuals (AF Form 1297)
7.62MM Linked:	Rounds To:	Individuals (AF Form 1297)
Simulator, Projectile (M115A2)		
	Rounds To:	Individuals (AF Form 1297)
Simulator, Hand Grenade (M116A1):		
	Rounds To:	Individuals (AF Form 1297)
Smoke, Grenade (M18 Series):		
	Rounds To:	Individuals (AF Form 1297)
Issued Training Explosives:		
Issued To:		
Type Issued (Smoke Grenade, Trip Flare, etc., on AF Form 1297):		
Quantity Issued:		

<i>Total Live Ammunition Returned:</i>		
9MM Ball:	Rounds From:	
5.56MM Clipped	Rounds From:	
5.56MM Linked:	Rounds From:	
7.62MM Linked:	Rounds From:	
<p>Simulator, Projectile (M115A2) Rounds From:</p> <p>Simulator, Hand Grenade (M116A1): Rounds From:</p> <p>Smoke, Grenade (M18 Series): Rounds From:</p> <p><i>Total Training Explosives Returned:</i> Type: Quantity:</p> <p>I certify that the above munitions were issued in the exercise and that all live ammunition has been turned in. I also certify that all magazines/clips were empty of all rounds before and again emptied after the exercise.</p>		
Name & Rank of Field Munitions Custodian	Signature	Date
Name & Rank of Exercise Coordinator	Signature	Date

Attachment 5

EXERCISE SAMPLE WRITTEN PROCEDURES/PARTICIPANT BRIEFING

A5.1. Personnel Limits. Personnel will adhere to personnel limits while employing the use of explosives. Supervisors are responsible for enforcing the following personnel limits for the duration of the exercise: (Ref: AFMAN 91-201):

Supervisors: _____

Workers: _____

Casuals: _____

A5.2. Explosives Limits. Explosives limits will expose personnel to the minimum amount of explosives necessary to ensure the success of the exercise. This exercise will be limited to the deployment of the following amount of explosives: (Ref: AFMAN 91-201):

Hazard Class/Division 1.____ Compatibility Group____ Nomenclature_____

NSN_____, Rounds/Item Quantity_____

Hazard Class/Division 1.____ Compatibility Group____ Nomenclature_____

NSN_____, Rounds/Item Quantity_____

Hazard Class/Division 1.____ Compatibility Group____ Nomenclature_____

NSN_____, Rounds/Item Quantity_____

Hazard Class/Division 1.____ Compatibility Group____ Nomenclature_____

NSN_____, Rounds/Item Quantity_____

A5.3. Exact Location. Specifically detail the location(s)/“play area” where munitions will be employed during this exercise. This location will be separated from all sited explosives storage areas by Public Traffic Route Distance (EXCEPTION: Security Forces). Contact the responsible weapons safety manager for further guidance. Munitions employment within a munitions storage area MUST be authorized by the owning commander or munitions flight chief. Personnel will not utilize munitions outside of the following location(s):

A5.4. Safety Requirements. Specify personal protective equipment/clothing, and additional equipment necessary to ensure a safe and healthful operation. The following clothing/equipment items will be used when necessary throughout the duration of the exercise (“X” all that apply):

A5.4.1. Personal Protective Equipment (PPE)

___ Protective Eyewear

___ Hearing Protection

___ Safety Toe Footwear

___ Fire Extinguishers (readily available fire extinguishers WILL be provided)

___ Specify number of extinguishers available

___ Gloves

___ Specify Type (i.e. leather, nylon, etc)

___ Other (list below)

A5.4.2. Transportation Safety Equipment

___ Vehicle Chocks

___ Fire Extinguishers (x2 per explosives laden vehicle)

___ Cargo Tie-Down Straps

___ Explosives Route Map

___ Explosives Vehicle Placards

___ Other (list below)

A5.4.3. Additional Safety Requirements

A5.5. Step-by-Step Procedures. Personnel are authorized to employ exercise munitions in accordance with the following:

M16-Series Weapons (AFPAM 10-100): Safety – Pg. 98

Loading – Pg. 103

Firing – Pg. 104

Reloading – Pg. 104

Clearing – Pg. 104

Immediate Action (SPORTS) – Pg. 105

M9 (AFPAM 10-100): Safety – Pg. 115

Loading – Pg. 119

Firing – Pg. 121

Reloading – Pg. 119

Clearing – Pg. 117

Immediate Action – Pg. 120

Ground Burst Simulator (M116A1/M115A2):

Pre-Use Inspection:

Ensure that the fuse has not been pulled out of the body of the munition.

Ensure the safety clip is properly installed. (If not, notify EOD immediately)

Ensure the body shows minimal to no wear.

Ensure the munition does not exhibit signs of having been exposed to excessive moisture.

Operation:

Remove safety clip

Grasp string (not plastic end cap) and pull completely through the fuse igniter.

NOTE: Pull cord should separate from simulator

Drop the simulator into the functioning area.

Immediately turn your back to the munition and walk away as quickly as possible.

NOTE: Continue to walk until the noise from the explosion is heard.

Smoke Grenades

Pre-Use Inspection:

Ensure that the safety pin is in-place. (If not, notify EOD immediately)

Ensure that the body of the munition is not damaged nor dented deeper than 1/4 inch. (If damage is noted, contact EOD immediately)

Operation:

Straighten ends of safety pin.

Pull the pin with one hand while keeping handle covered with palm of other hand.

Drop the grenade into the functioning area.

Immediately turn your back to the munition and walk away as quickly as possible.

NOTE: The burning time of the fuse is 1.2 to 2 seconds. A delay of five to eight seconds is considered normal. The filler (potassium chlorate, sulfur, baking soda, and dye) burns for approximately 40 seconds.

Additional Procedures To Be Followed:

A5.6. Emergency Action. The following action will be taken during “Real-World” emergency situations:

LIVE ROUND: If a live-round is found commingled with blank ammo, the exercise will **STOP**. The responsible commander will be notified of the situation, and ALL exercise ammo will be inspected.

MISFIRE PROCEDURES: Personnel will utilize the “SPORTS” method in AFPAM 10-100, Page 105, if a misfire occurs. If this does not correct the issue, notify supervision immediately.

1. DUD GBS/SMOKE: a. If a Ground Burst Simulator/Smoke Grenade is a DUD, immediately establish a **200 FT** cordon. The nearest EOD function will be notified immediately. The ETC will consider a STOPEX until the DUD munition has been rendered safe by the EOD function. b. Evacuate all nonessential personnel to an initial safe distance of 300 feet (125 feet for Simulators and Smoke Producing Munitions). Identify the rallying point prior to the operation.
2. Immediately Contact CES Explosive Ordnance Disposal through 911 Emergency Response Dispatch or by dialing direct to _____.
3. Other Emergency Notification Procedures. The following agencies will be notified as applicable during a "Real-World" Emergency:

Fire: _____

Local Safety: _____

Medical: _____

Command Post: _____

EOD: _____

Security Forces: _____

Other: _____

A5.7. Designated Disinterested Individual(s). The responsible commander has assigned an Exercise Team Chief or "Designated Disinterested Official (DDO)" in accordance with AFMAN 91-201, para. 7.25.1.1 and DAFBI 91-205 para. 1.1. The following DDO will inspect all exercise ammunition, and will certify that only blank ammunition is loaded in exercise weapons magazines.

Name/Rank: _____ Unit: _____

Phone: _____

A5.8. Expended Brass/Residue Turn-In Procedures. All personnel responsible for munitions during the exercise are responsible for being familiar with, and utilizing the following local expended brass/residue turn-in procedures:

Reference: _____

At a minimum the following procedures will be followed:

All expended munitions residue, packaging material, and munitions containers will be returned to the issuing munitions management function for inspection and disposition.

Using personnel will inspect munitions residue, packaging material, and munitions containers for live munitions prior to turn-in.

Unused, serviceable, munitions which have been removed from their shipping/storage containers will be returned to their original shipping container prior to transporting to the issuing munitions management

function.

A5.9. Additional Safety Considerations. The following additional guidance is mandatory for the duration of the exercise:

A5.10. Coordination and Approval. The following authorities must approve these written procedures prior to implementation. The Exercise Team Chief will ensure that the Wing Weapons Safety Manager (121 AW/SEW) has been provided with a copy of these procedures after the responsible commander has authorized implementation.

Responsible Commander

Wing Weapons Safety Manager

Exercise Team Chief

SE Initials

Attachment 6

SAMPLE EXERCISE/TRAINING EVENT RISK ASSESSMENT

(Place on unit letterhead)

(Date)

MEMORANDUM FOR: 436 & 512 AW/SEW

FROM: Unit/CC

SUBJECT: Use of Explosives Risk Assessment for (Event name or description)

1. **TRAINING/EXERCISE SYNOPSIS:** Give a brief explanation of the training or exercise purpose, include expected frequency of this event occurring (how many times per month, year, etc...), and the basic who, what, where, when, etc....
2. **EXPLOSIVE OPERATIONS DESCRIPTION:** (Example) XX XXX personnel will function the following munitions to simulate terrorist and mortar attacks during JRTC exercise scenarios. Munitions pick-ups and deliveries will be scheduled IAW (Unit) MUNS/MXMW custodial procedures and will be picked up on the day prior to training/exercise start date. Munitions turn-ins will occur NLT the day after ENDEX.
3. **ASSOCIATED OPERATING INSTRUCTIONS (OIs):** List all associated OIs (include custodial scheduling, transportation, handling, emergency procedures, etc...)
4. **EXPLOSIVE LIMITS:** Explosive will not exceed those quantities listed on associated facility licenses while in storage and quantities listed below during training/exercise operations.

(* include munitions for visiting units; domestic or foreign)

The following is only an example:

a. NOMENCLATURE	NSN	HC/D	QTY	NEW(LBS)
CTG, 5.56MM Blank, M200	1305-00-182-3217	1.4S	(Type in daily amounts	
M116A1 Simulator, Hand Grenade	1370-00-752-8124	1.3G	and NEW quantities)	
M18 Series Green Smoke Grenade	1330-00-289-6851	1.4G		
Simulator, Projectile, M115A2	1370-00-752-8126	(04)1.2.2G		
Grenade, Smoke, M18, Violet	1330-00-289-6853	1.4G		

5. **PERSONNEL LIMITS:** Training/Exercise team chief, coordinators, supervisors and instructors will adhere to the *Cardinal Principle of Explosive Safety* – Expose the minimum amount of people, to the minimum amount of explosives, for the minimum amount of time. For the purpose of this operation, personnel limits are expressed in terms such that those individuals providing oversight/control are considered as “Supervisors”; those actually handling explosives set-up and function are considered “Workers”. The term “Casuals” will refer to those personnel whose duties require them to be present such as evaluators and safety personnel. The number of students/exercise participants will be listed separately as “Exercise Participants” but are considered a subset of “Workers”. The following are the personnel limits for these events:

- a. Supervisors: XX

- b. Workers: XX
- c. Casuals: XX
- d. Exercise participants: XX

6. **LOCATIONS:** See locations identified on the attached Area Map.

7. **ASSOCIATED HAZARDS/RISKS:** Add what you feel are the risks involved. The items below may not be all inclusive. (Use **Severity, Probability** matrix score listed in chart at the end of each listed risk)

	Probability				
Severity	Frequent (A)	Likely (B)	Occasional (C)	Seldom (D)	Unlikely (E)
Catastrophic (I)	Extremely High	Extremely High	High	High	Medium
Critical (II)	Extremely High	High	High	Medium	Low
Marginal (III)	High	Medium	Medium	Low	Low
Negligible (IV)	Medium	Low	Low	Low	Low

All explosive and ammo items are sensitive to heat, shock and friction (II, E)

Possible introduction of live ammo during force-on-force training/exercises (I, E)

Smoke grenades present respiratory tract irritation/headache potential from smoke and particles. Potential personnel and eye injuries from case rupture fragments. (II,E)

Burn and explosive damage potential to unprotected hands. (II,D)

Fire potential to vehicles, combustible facilities and dry vegetation. (II,E)

Hand grenade simulators present a blast hazard. Potential blast, and fragment projection hazards to personnel, vehicles and facilities in the immediate area. (II,E)

Partially expended/dud smoke grenades present possible heavy metal contamination hazards to personnel and groundwater. (II,E)

8. **RECOMMENDED CONTROL MEASURES:** (Below list is not all inclusive. Add items that pertain to your ops. Include PPE. Pay particular attention to redundant control measures to keep live ammo out of play. Address force-on-force PAUSEX processes)

Only personnel qualified/certified initially and annually by EOD are authorized to handle, transport and function these munitions.

All personnel assigned to handle, transport and function these munitions will be current in their weapons safety training.

Personnel driving explosive-laden vehicles must be test certified, and carry AF Form 483, Certificate of Competency when transporting munitions.

Approved operating instructions will be readily available for use/review during all operations.

A minimum of two 2A:10BC fire extinguishers will be readily available while handling, transporting and functioning munitions.

Fire Department Brush Fire Water Extinguishers will also be readily available.

Combustible material will be removed from within a 10' radius of the area where these munitions will be functioned.

All personnel will remain upwind of burning smoke grenade(s).

Wear leather gloves when throwing and retrieving simulators/smoke grenades.

Call EOD for DUD munitions disposal – **DO NOT HANDLE!**

All requirements of AFMAN 91-201 and TO 11A-1-46 will be strictly observed.

Notify the Fire Department, Fire Alarm Control Center of vehicle routing just prior to transporting munitions, also include the location(s) where operations involving the use of munitions will occur.

All personnel will use PPE.

Personnel operating simulators and smoke grenades will comply with the following minimum safety separation distance requirements outlined in AFMAN 91-201.

Avoid using smoke grenades in close proximity to personnel.

Unattended functioning smoke grenades are a fire hazard. Do not leave the immediate area until these items are completely expended.

Turn expended smoke grenades in to the Munitions Squadron for inspection/disposal.

Any deviation from planned explosive operations must be coordinated with an Evaluator, the 121 AEW Safety Staff, and the Wing Commander.

9. **EMERGENCY PROCEDURES:** (address the following areas)

Explosive Incident:

DUD procedures:

Fire:

PAUSEX:

Injury:

Severe Weather:

10. **EXERCISE TEAM CHIEF ASSESSMENT:** The overall RISK ASSESSMENT for (type, name of exercises) exercises is considered “**MEDIUM**” (ETC decision).

11. Training and exercise dates and locations will be coordinated through affected agencies at least 30 days prior to start dates. Security Forces, Fire Department, EOD, Command Post, and Force Support Squadron will be notified by ETC one day prior to training/exercise start. Where feasible, exercise warning signs and cordons will be employed at appropriate sites to identify play areas.

12. This risk assessment will be voided by changes to scenario or location and by significant changes to any of the criteria listed in paragraphs 4 thru 7. Address questions/concerns to (exercise team chief) at 759-XXXX

JOE A. COMMANDO, Rank, USAF
Duty Title (Exercise Team Chief)

Attachment:

Exercise Location Map

1st Ind, 436 AW/SEW

MEMORANDUM FOR 436 AW/CC

I recommend/non-recommend approval of the attached risk assessment(s) and planned exercise(s).

(Name, Rank), DAFC
Weapons Safety Manager

2nd Ind, 436 AW/SEW

MEMORANDUM FOR Responsible Unit/CC

I approve/disapprove the attached risk assessment(s) and planned exercise(s).

(Name)
Wing Commander, Rank, USAF
Commander

Attachment 7

BLANK AMMUNITION/PYROTECHNIC SAMPLE ILLUSTRATIONS

A7.1. BLANK AMMUNITION, 5.56mm and 7.62mm

A7.1.1. DESCRIPTION. (See Fig. A7.1) Blank ammunition is nothing more than standard ammunition minus a projectile. The casing is slightly longer than a normal casing to allow for the restriction and sealing of the powder. This allows the powder to explode, rather than burn slowly when the primer is struck. The end of the 5.56mm casing is crimped and sealed while the 7.62mm casing is plugged and sealed with wax.

A7.1.2. FUNCTION. Blank ammunition is chambered in a weapon in the same manner as standard ammunition. When the weapon's firing pin strikes the primer of a blank round, the primer ignites the blank's powder charge which in turn, burns very rapidly. The gases caused by this ignition escape from the end of the blank casing with explosive force. These gases are restricted from exiting the weapon's barrel by a blank adapter. The result of this restriction is back pressure which allows the weapon to function, ejecting the spent blank casing and chambering a fresh one.

A7.1.3. SAFETY PRECAUTIONS. In addition to the precautions listed in paragraph 7 of this Instruction, the following safety precautions apply:

A7.1.3.1. **WARNING:** The blank adapter disperses the majority of the blast from the blank ammunition however, this blast can still cause death or injury to personnel if they are too close to the muzzle of the weapon. 5.56mm (M-16, GAU-5) blank ammunition will not be fired directly at personnel who are closer than 25 feet to the weapon. 7.62mm (M60, M14) blank ammunition will not be fired directly at personnel who are closer than 45 feet to the weapon.

A7.1.3.2. **WARNING:** Ensure the blank adapter is secure. A loose blank adapter can act as a projectile.

A7.1.3.3. Standard weapon safety procedures will be observed at all times.

A7.1.3.4. Blank ammunition will not be fired from any weapon that does not have a blank adapter installed.

A7.1.4. OPERATING PROCEDURES.

A7.1.4.1. **WARNING:** Ensure that only blank ammunition is carried. Firing live ammunition through a weapon with a blank adapter installed will have catastrophic results.

A7.1.4.2. Weapons are operated in the same manner, with the same precautions as when firing live ammunition.

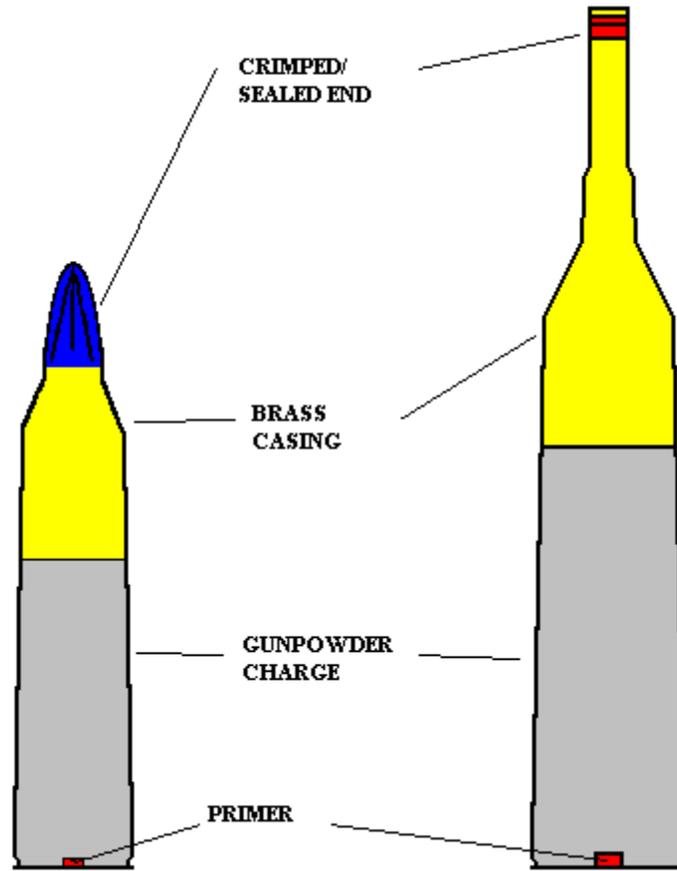
A7.1.4.3. If a weapon malfunction occurs, clear the malfunction as if live ammunition is being used.

A7.1.4.4. Blank ammunition that has been damaged or unsuccessfully fired will be placed in a sealed ammunition can and given to EOD upon termination of the operation or training exercise.

A7.1.4.5. Following the exercise, the training area will be policed for ammunition residue.

A7.1.4.6. **CAUTION:** Blank ammunition casings left on roadways can cause severe tire damage.

Figure A7.1. 5.56mm and 7.62mm Blank Ammunition



A7.2. SMOKE GRENADE, M18

A7.2.1. DESCRIPTION. (See Fig. 1) The smoke grenade consists of a cylindrical metal body that contains various smoke color mixtures (thermite filler), a fuse assembly, and a smoke emission hole. The fuse assembly is threaded and is screwed into the grenade body. The Fuse consists of a primer, a spring-loaded striker or firing pin, a delay fuse, a safety lever (commonly referred to as a “spoon”), and a safety pin. The smoke emission hole is covered with pressure sensitive tape and is located at the base of the grenade body, opposite the fuse. The smoke grenade is used to mark locations, disguise movement, and for signaling. NOTE: Smoke grenades are individually packaged in dense cardboard/fiber cylinders. These cylinders are separated in the center and are sealed with tape.

A7.2.2. FUNCTION. When the safety pin is removed, the safety lever which covers the spring-loaded striker is released. The striker fires the primer which lights the delay fuse. The fuse burns for approximately 1.2 to 2 seconds before igniting the starter mixture and

smoke filler. As the filler burns, smoke is released through the smoke emission hole. The grenade will continue burning for approximately 40 seconds.

A7.2.3. SAFETY PRECAUTIONS. In addition to the precautions listed in paragraph 7. of this Instruction, the following safety precautions apply:

A7.2.3.1. Grenades will be removed from their individual packages from the top (fuse end) only.

A7.2.3.2. The split end of the safety pin must be separated.

A7.2.3.3. **WARNING:** Smoke grenades that are damaged or incomplete will be set aside and marked for EOD in accordance with the procedures in paragraph 8.2 of this Instruction.

A7.2.4. OPERATING PROCEDURES.

A7.2.4.1. **WARNING:** Grenades will not be lifted, handled, or carried by the safety pin or pull ring.

A7.2.4.2. Remove the grenade from its container by placing the palm of the throwing hand over the grenade fuse and turning the container upside down. As the grenade slides out of its container, cover the safety lever with the thumb before it clears the container.

A7.2.4.3. Hold the grenade firmly in the throwing hand, ensuring the safety lever is pressed against the grenade body.

A7.2.4.4. Pull the safety pin out of the fuse body by the pull ring.

A7.2.4.5. **WARNING:** Removing the safety pin arms the grenade. Once the grenade is armed, it must be used. No attempt to safe the grenade may be made

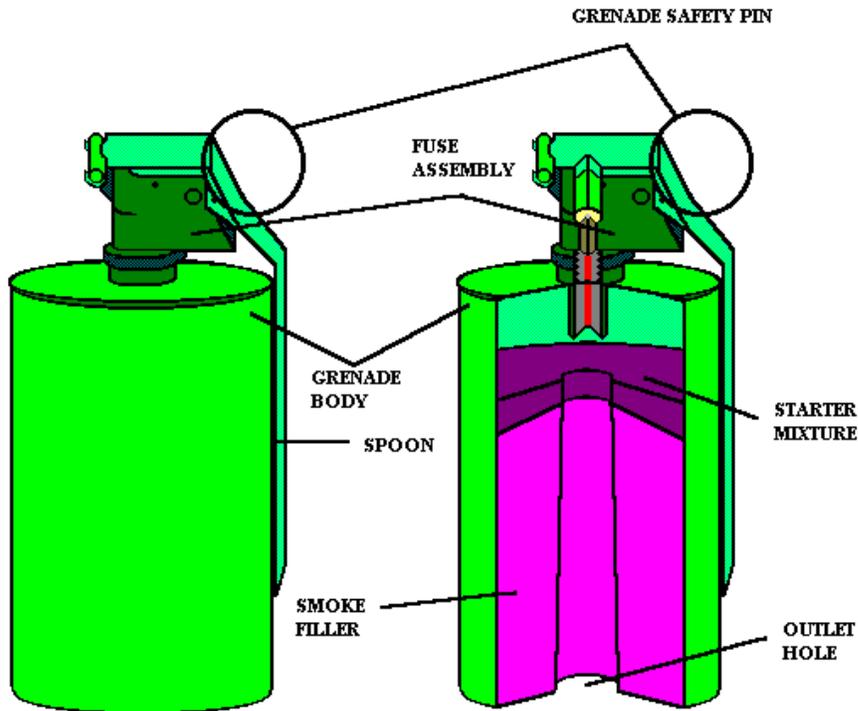
A7.2.4.6. Throw the grenade to a clear and uninhabited area.

A7.2.4.7. **WARNING:** Avoid breathing the smoke produced by the grenade

A7.2.4.8. If the grenade fails to function, mark the location for EOD in accordance with the procedures in paragraph 8.2 of this Instruction.

A7.2.4.9. Following the exercise, the training area will be policed for residue and all duds accounted for.

Figure A7.2. M18 Smoke Grenade



A7.3. SMOKEY SAM SIMULATORS, GTR18. NOTE: All information for the GTR18 Rocket Motor (Smokey Sam) is contained in T.O. 11L1-2-23-1. This Technical Order will be referred to for any information or procedures.

A7.3.1. DESCRIPTION. (See Fig. A7.3) The Smokey Sam Simulator (SSS), consisting of the GTR-18 rocket and PVU-3/E igniter, is a pyrotechnic device designed to simulate the actual launch of a surface to air missile (SAM) against an aircraft for aircrew training. The rocket propellant is cast loaded into the cardboard rocket tube providing a hollow core. The igniter mounts to the launcher and the rocket is placed over the igniter. The bay launcher contains the launch head assembly, electronics enclosure assembly and the stand assembly. The guide rods on the launcher provide initial guidance and the electronics assembly provides electro-mechanical firing of the rocket.

A7.3.2. FUNCTION. All functioning, munitions inspection, handling and area set up procedures are contained in TO 11L1-2-23-1 and the checklist provided with the TO. This TO and checklist must be on the launch site and followed step by step.

A7.3.3. SAFETY PRECAUTIONS. In addition to the precautions listed in paragraph 7 of this Instruction, the following safety precautions apply:

A7.3.3.1. Each launch team member is responsible for complying with the instructions and the safety guidelines found in TO 11L1-2-23-1.

A7.3.3.2. All instructions and checklists will be followed.

A7.3.3.3. Do not fire rockets directly at aircraft that are flying below 2500 feet.

A7.3.3.4. The launch site must be cleared of all obstructions for at least a 25 foot radius from the launcher position.

A7.3.3.5. If the launch site is not in a controlled closed area, then the launch site must have a 100 foot radius cordoned off with rope. There will be a minimum of four "DANGER ROCKET FIRING AREA. DO NOT ENTER" signs placed around the radius.

A7.3.3.6. The SSS single or four bay launcher site is normally operated by two persons, a munitions loader/safety observer and a launch operator.

A7.3.3.7. **WARNING:** Rockets or igniters that are damaged or incomplete will be set aside and marked for EOD in accordance with the procedures of this Instruction

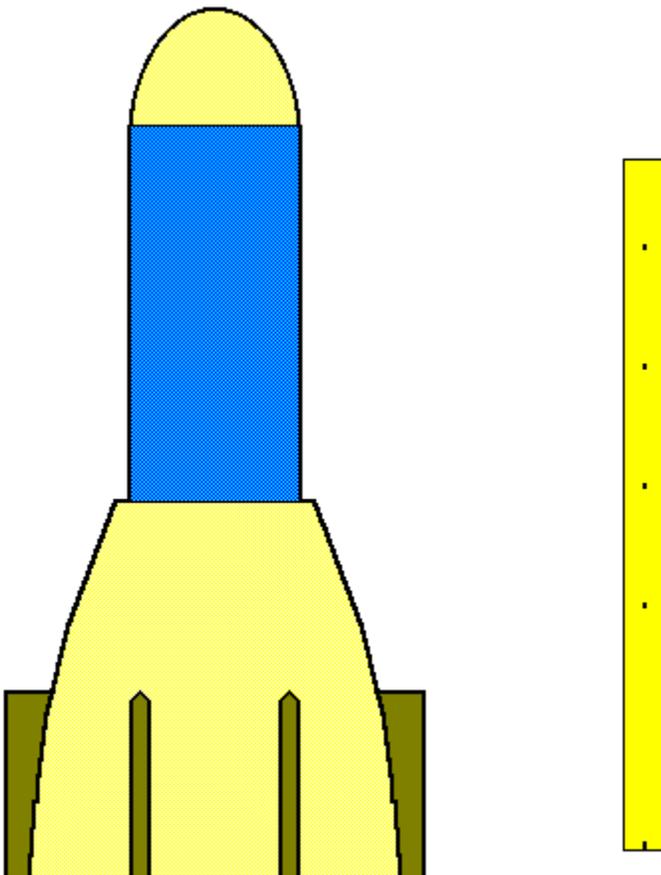
A7.3.4. OPERATING PROCEDURES.

A7.3.4.1. The operating procedures and checklists for the SSS are contained in TO 11L1-2-23-1.

A7.3.4.2. The procedures for correcting malfunctions in TO 11L1-2-23-1 will be strictly adhered to.

A7.3.4.3. Following the exercise, the training area will be policed for residue and all duds accounted for.

Figure A7.3. GTR18 Rocket Motor (Smokey Sam) and PVU3/E Igniter.



Attachment 8

121 AEW CES/EOD GENERAL PYROTECHNICS USER GUIDE

A8.1. Safe Distances, IAW AFMAN 91-201

A8.1.1. The purpose of this guide is to aid trained personnel in the safe handling, employment, and operation of various pyrotechnic devices.

A8.1.2. This guide does not replace Technical Orders or Air Force Regulations. Always refer to the applicable publication or contact EOD if you have any questions about pyrotechnic devices.

Table A8.1. IAW AFI 33-360, para. 2.12.14

Item or Area	Feet
Combustibles	10
NO SMOKING	50
Explosive laden vehicles	50
Facility - Hardened (i.e., A/C shelters and earth covered magazines)	50
Facility - <u>without</u> facing window	100
Facility – <u>with</u> facing windows	200
Facility – POL storage	200
Aircraft in open	100
Aircraft in open – Explosive laden	200
Personnel	125
Vehicles	125
Explosive areas (holding, operating areas and facility with facing window)	200

A8.1.3. General Safety: GBSs present a blast/frag hazard. **DO NOT** put wet GBSs in a closed container. When functioning smoke grenades, ensure personnel will not be in heavy smoke concentrations. Treat all unfired pyrotechnics with the same respect as a loaded firearm.

A8.2. Misfire Procedures. Note the time of initiation (dampness may delay firing). **Approach item only to cordon off a radius of 300’.** Notify IG ATNAS Ops of CINC ATSO (Command Post). **DO NOT TOUCH. Keep personnel away.** Remain in the area to direct emergency responding personnel.

A8.3. EMERGENCY ACTIONS. *In the event of an accident:* Notify IG ATNAS Operations. IG ATNAS Operations will notify EMS personnel and Fir personnel as required – (Via Command Post). Administer Self-Aid/Buddy Care as needed. Control any fires, if possible. Remain in the area to direct emergency responding personnel. **Notes:** Expect the unexpected. If in doubt to the serviceability of a simulator – do not use – return to issue point.

A8.4. Ground Burst Simulators and Smoke Grenades.

Figure A8.1. GROUND BURST SIMULATORS, M115/M116



A8.4.1. Ground Burst Simulators, M115/M116.

A8.4.1.1. Inspect simulator. **Don't use if any items listed below exist:** Evidence of moisture. Safety clip missing. Case dented or bulging. **WARNING:** Wear Leather Gloves When Initiating All simulators. **Return to the issuing point if any of the above conditions exist.**

A8.4.1.2. Operating: Ensure pit/bunker is free of combustible material. Grasp simulator in gloved throwing hand. Remove safety clip and extend cap to free cord. Pull sharply on cord and **IMMEDIATELY** drop GBS in designated pit/bunker. Walk away from the initiation point and not the time. If simulator fails to function implement **MISFIRE PROCEDURES. ONLY ONE simulator at a time.**

Figure A8.2. SMOKE GRENADE, M8/M18



A8.4.2. Smoke Grenades, M8/M18

A8.4.2.1. Inspect grenade. **Don't use if any items listed below exist.** Safety pin missing or improperly spread. Loose fuze or not sealed properly. Damaged or dented body. Corroded body. **Return to the issuing point if any of the above conditions exist.**

A8.4.2.2. Operating: **DO NOT** carry in pockets. **DO NOT** carry more than two without placing in a container. Hold in gloved throwing hand. Hold spoon securely and remove safety pin. Throw and walk away noting time. Let it cool after burning stops. Ensure contents are consumed. Take residue to collection location. If grenade fails to function implement **MISFIRE PROCEDURES.**

A8.4.3. TRANSPORTATION: Inspect vehicle, ensure no discrepancies with any electrical system, annotate on AF Form 1800. Transport in metal containers. **RENTAL VEHICLES ONLY:** Transport no more than ten (10) simulators/smokes combined. Secure in cargo compartment with sandbags/cargo straps. **DO NOT** store pyrotechnics in cab with personnel. Vehicle must have four (4) placards. Must have **two** (2) each 2A:10BC fire extinguishers, (**RENTAL VEHICLES** require **one** (1) 2A:10BC fire extinguishers). Travel by the most direct and designated route from the issue point to the initiation point (pit/bunker). If transporting off base notify fire department of destination, route, and make, model, registration, and license number of vehicle. NEVER TRANSPORT IN Privately Owned Vehicle (POV). NEVER refuel a vehicle containing simulators. DO NOT leave vehicles containing simulators unattended at anytime. DO NOT travel or park in public places.

Attachment 9
BASE "X"

