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Safety

**AMMUNITION, BATTLE FIELD
SIMULATORS, AND PYROTECHNIC DEVICES**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFMAN 91-201, *Explosive Safety Standards*. It establishes proper procedures for, and applies to, 62d Airlift Wing, tenant units, and headquarters inspection teams expending munitions during training exercises or higher headquarters evaluations (ORI). Safety principles and procedures outlined in this instruction are applicable to all training sites and deployed locations. Adherence to the guidelines outlined in this instruction will ensure the safe use of explosives, simulators, pyrotechnics, and blank ammunition.

1. References.

AFMAN 91-201, Explosive Safety Standards
AFI 31-101, The Air Force Resource Protection Program
T.O. 11A8-2-1, Operations Manual, Hand and Rifle Grenades, Flares and Signals
T.O. 11A8-5-7, Grenades, Hand and Rifle
T.O. 11A8-4-7, HC Smoke Pots, M1 and M5
T.O. 11A10-26-7, Pyrotechnic Signals
T.O. 11A10-27-7, Simulators, Battle Field Effects
T.O. 11A10-31-7, Trip Flares, M49A1
T.O. 11A13-10-7, Small Arms Blank Ammunition
62 AWI 21-18, Conventional Munitions Support Procedures
62 AWI 91-5, Hazardous Materials Transportation Safety Program

2. Emergency Telephone Numbers.

Fire Department	911/117
Explosive Ordnance Disposal	3290
USAF Clinic (EMERGENCY)	5453
Security Forces	911
Base Command Post	2635/2236
Weapons Safety Manager	5179/5305

3. Responsibilities. This instruction will be readily available at all times during the firing of authorized training munitions. Supervisors are responsible for ensuring all personnel are properly trained and know applicable safety practices associated with the munitions, prior to start of the exercise.

NOTE:

ALL PERSONNEL FIRING EXPLOSIVE ITEMS WILL BE TRAINED AS REQUIRED BY AFMAN 91-201, *EXPLOSIVE SAFETY STANDARDS*.

- 3.1. Personnel armed for resource protection of weapons will not participate in exercise activities.
- 3.2. All personnel involved in exercises are responsible for knowing, understanding, and strictly observing all safety practices and precautions applicable to the munitions they are using. Exercise Team Chief will give a safety briefing prior to firing any munitions, using the guidelines in **Attachment 1** of this publication and the following items:
 - 3.2.1. Restrictions on using training munitions.
 - 3.2.2. Procedures for reporting mis-fired or unused training munitions.
 - 3.2.3. Injury reporting procedures.
 - 3.2.4. Report any unsafe condition, equipment, and/or material.
 - 3.2.5. Warn others of unsafe conditions
 - 3.2.6. Wear/use protective equipment as required.
 - 3.2.7. Report all injuries and mishaps.

NOTE:

Follow all safety requirements posted in this instruction and item technical orders. Take prompt action to control all hazards. Disregard for sound safety practices is cause to remove individuals from the exercise area and grounds for permanent decertification.

- 3.3. Only authorized personnel will retrieve training munitions from the munitions storage area. "Authorization is determined by AF Form 68, Munitions Authorization Record. See Paragraph **9.1**. Of this instruction."

4. Explosive Limits: Use type of training and quantity of explosives required for training to determine explosive limit requirements.

5. Personnel Limits: At least two qualified personnel are required to fire munitions. Exercise participants will maintain a safe distance from areas used to fire munitions, as required by AFMAN 91-201 (Explosive Safety Standards). Annotate personnel Limits in **Attachment 1** of this instruction.

6. Location: Conduct operations at McChord AFB “Base X” and “South Forty” training areas.

7. Equipment: Required safety equipment and materials are outlined in Section III of all T.O.’s for all explosive and operations.

8. Transportation:

8.1. Use only government vehicles or properly configured GSA vehicles to transport explosives.

8.2. Inspect vehicles for serviceability. Correct major discrepancies before using vehicles to transport explosives. Document minor discrepancies not affecting the safe operation of the vehicle. Dents, scratches, and others minor discrepancies are not causes to prohibit vehicle use.

8.3. Pack all explosives in original or authorized containers prior to transport to exercise area.

8.4. Equip vehicles with two fire extinguishers rated at 2A/10BC. Store one extinguisher in the vehicle cab (passengers side) and place the second extinguisher on exterior of the vehicle (driver’s side) in a readily accessible location.

8.5. Notify the Fire Department each time you transport Class/Division 1.1, 1.2, 1.3 explosives, or 1.4 explosives in excess of 1,000-lbs. gross weight on-base.

8.6. Placard all vehicles transporting explosives I.A.W. AFMAN 91-201, paragraph. 2.71 and CFR 49, Part 172, Subpart F.

8.7. Remove all combustible materials from vehicles (i.e., wood, paper, plastic, and cloth) prior to transporting explosives.

8.8. Do not transport explosives in a passenger compartment of a vehicle. Some exceptions are outlined in AFMAN 91-201.

8.9. Secure explosive containers in the vehicle using tie-down straps, cargo nets, blocking or a similar method prior to movement.

8.10. Do not transport passengers in the cargo compartment of vehicles transporting explosives.

8.11. Open flames of any type are not allowed within 50 feet of an explosive-laden vehicle. Smoking is prohibited in an explosive-laden vehicle.

8.12. Do not leave the engine of a vehicle running during loading or unloading of explosives. Set the parking brake and place the transmission “Park” on vehicles with an automatic transmission and in “Reverse” on vehicles equipped with a manual transmission. Chocks are required if vehicle is not parked on a flat surface.

- 8.13. Stopping off-base, except for emergencies, is not authorized. If it becomes necessary to stop off-base, park at least 300 feet from public buildings and ensure at least one person remains with the vehicle at all times.
- 8.14. Equip vehicles traveling with munitions off-base with an emergency road kit.
- 8.15. Never transport ammunition/explosives in civilian vehicles.

9. Storage and Munitions Control Procedures:

- 9.1. Use AF Form 2005 (**Issue, Turn-in Request**) to request munitions from the Munitions Maintenance Flight. Personnel listed in Part II of the AF Form 68, **Munitions Authorizations Record** are authorized to submit munitions requests. Personnel designated in Part III of the AF Form 68 are authorized to sign and receive munitions. For issue and receipt of conventional munitions, follow procedures outlined in AFI 21-201 and 62 AWI 21-18, *Conventional Munitions Support Procedures*. Submit munitions requests 10 days in advance to allow for adequate processing time.
- 9.2. Munitions items will remain in their outer and inner packaging as issued until ready for actual use. Repackage all unused munitions in original packaging. Maintain an inventory record of all explosives issued. Account custodians will ensure all unused munitions items are properly packaged into original configuration prior to return for storage or turn-in from the account as applicable.
- 9.3. Return unused munitions and packaging materials (metal containers, cardboard containers, and loading equipment) to the Munitions Flight Inspection Element.
- 9.4. Return expended munitions and brass to the Munitions Flight for certification and disposal.
- 9.5. Store ammunition/explosives in properly sited, licensed, and secure facilities. Contact the Weapons Safety Office for proper procedures.

10. Safety Precautions:

- 10.1. Unauthorized employment or makeshift riggings of explosives is extremely dangerous and prohibited.

CAUTION:

Fire hazards exist when using incendiary devices. Ensure all fires are extinguished prior to termination of exercise/operation.

- 10.2. Remove only necessary quantities of explosives from storage to support current operations.
- 10.3. Supervisors and instructors are responsible for ensuring complete compliance with this instruction and all other safety, security, and accountability instructions.
- 10.3.1. Individuals will follow safety precautions and comply with **Attachment 1** of this manual.
- 10.4. Ensure one portable radio or cell phone is available at all explosives operations for emergency notification procedures in the event of accident/incident.
- 10.5. In the event of a munitions miss-fire, notify the Command Post (4-2635). Command Post will notify Explosive Ordnance Disposal Flight (EOD) of any munitions items that have failed to fire. Only qualified EOD personnel will handle all "DUD" or miss-fired munitions.

10.5.1. Cordon off and mark areas containing “DUD” munitions to prevent encroachment of unauthorized personnel.

10.6. Upon completion of training, collect all ammunition and munitions residue for turn-in to munitions storage area for proper disposal.

CAUTION:

Ensure live ammunition/munitions are not mixed with munitions residue. Supervisors or training instructor are responsible for ensuring live ammunition is properly segregated from munitions residue.

10.7. Procedures, cautions, and warnings for the firing of specific ammunition, munitions, and pyrotechnic devices are contained in **Attachment 1** of this instruction.

11. Simulators and Smoke Producing Munitions:

11.1. Fire simulators and smoke producing munitions I.A.W. AFMAN 91-201, para 2.15.

11.2. Only DOD stock-listed items are authorized for use. Other military services using Air Force training areas are restricted to DOD stock-listed items while using designated training ranges.

11.3. Only trained and qualified personnel will prepare, transport, store, and function these devices. EOD will provide training annually to personnel whose duties require them to initiate training simulators. If EOD support is not available consult with the Weapons Safety Manager for training. It is the responsibility of the using organization to request training and maintain training records. Higher headquarters evaluation teams using these devices must present proof of training, as designated by AFMAN 91-201, to the Weapons Safety Office prior to use.

11.4. Smoke from grenades and smoke pots is toxic in high concentrations. Contact Environmental Management and the Fire Department prior to use. These items along with pyrotechnic devices present a fire hazard. Remove combustible materials before firing and consider winds and fire hazards, such as dry grass, prior to beginning any operation.

11.5. Follow guidelines in AFMAN 91-201, Table 3-2 and T.O. 11A8-2-1 when firing smoke grenades.

12. Battlefield Simulators:

12.1. Battlefield simulators e.g., such as ground burst and hand grenade simulators present a blast hazard. Exercise extreme caution when firing these items around people, facilities, and equipment. Ensure area is free of combustible material and extraneous items in a ten-foot circumference of the firing area. (Firing of simulators in a sand-bagged pit is the preferred method). Notify EOD when munitions malfunction and maintain the following safe distances:

12.1.1. Personnel or vehicle: Maintain a minimum 125-foot separation. Personnel who initiate these munitions may be closer than 125-foot, but should be as far away as possible and have their back turned to the firing munitions.

12.1.2. Facilities without a Facing Window: Maintain a minimum separation of 100 feet.

12.1.3. Facilities with a Facing Window: Maintain a minimum separation of 200 feet.

12.1.4. Hardened Facilities, including Hardened Aircraft Shelters: Maintain a minimum separation of 50 feet.

12.1.5. Petroleum, Oil and Lubricants Storage: Maintain a minimum separation of 200 feet.

12.1.6. Aircraft in the Open: Maintain a minimum separation 100 or 200 feet if aircraft are explosive-loaded.

12.1.7. Explosive Operating Locations, Holding Areas, Open Storage Areas or Butler-Type Storage Facilities: Maintain a minimum separation of 200 feet.

12.1.8. Above Ground Magazines of Block, Brick, or Concrete Construction and Earth-Covered Igloos: Maintain a minimum separation of 50 feet.

NOTE:

Reduce distances specified in AFMAN 91-201 if they meet the required specifications of AFJMAN 32-1092, Explosive Facility Design. Reductions of distances must be approved by Headquarters Air Force Safety Center (HQ AFSC/SE).

12.2. I.A.W. environmental standards and T.O. 11A-1-60, dispose of expended simulators, smoke pots, packing material and un-expended items to the munitions flight.

WARNING:

Use of “Real World” security forces, armed with live ammunition within a training environment where blank ammunition is present, poses a significant potential for a deadly accident. Use of “Real World” security forces with live ammunition is prohibited from all exercise and training environments. Use within all training environments.

12.3. Post real world security forces outside of “Exercise Area” to maintain ability to respond to real world needs. For areas that do not physically allow for an “outside” area, create an exclusive area with clearly marked boundaries. *Mixing live and blank ammunition within an exercise area is prohibited. All magazines used for blank small arms ammunition during exercises will have the bottom one third of the magazine painted light blue to signify training use only magazines.*

12.4. Develop clear instructions to ensure real world and training forces fully understand response requirements. Instructions will include requirements for a thorough communication check with all participants prior to the start of an exercise. Additionally, ensure all forces clearly understand that the exercise will cease immediately when responding to a real world requirement. The Exercise Team Chief will thoroughly brief all exercise participants that any one can, and must stop exercise activity (call a time out), when safety infractions are detected.

12.5. Do not store live ammunition inside an “Exercise Area”.

12.6. All exercise weapons will have blank adapters affixed to them while in the exercise area. The Exercise Team Chief will brief safe firing distances to all exercise participants prior to the start of an exercise. Personnel will not use M-9 pistols during exercises, since blank adapters are not available.

13. Training and Exercise Plans:

13.1. I.A.W. AFMAN 91-201, para 2.16, the Exercise Team Chief prepares a risk assessment, a detailed list of explosives authorized for use in the exercise, and a detailed list of locations where munitions will be deployed and fired. The Installation Commander and Weapons Safety manager must approve the plan. Include safety personnel in exercise planning and risk assessment. Commanders will ensure personnel, not normally associated with explosives operations, are not exposed to explosives hazards. Personnel will not use or carry explosives in public assembly areas, except when required by mission essential needs or immediate security requirements.

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Commander, 62d Airlift Wing

Attachment 1

OPERATIONAL/SAFETY BRIEFINGS

A1.1. This attachment establishes emergency procedures used during explosive operations. It clearly defines each persons responsibilities to successfully perform the explosive operation at hand. It also addresses the proper procedures for each individual to follow in the event of an accident or incident involving explosives. The Exercise Evaluation Chief or training facilitator(s) will ensure compliance. Guidelines set forth in this attachment are applicable to all personnel functioning, handling, storing, or transporting munitions for exercise purposes.

A1.2. References. AFMAN 91-201, AFMAN 24-306, DODR 6055.9, AFI 21-201, and 11A specific munitions technical orders.

A1.3. Pre-operational Safety Briefing: Exercise Chief will brief all exercise facilitators and visitors prior to performing an explosive operation.

A1.3.1. Type of operation to be performed _____.

A1.3.2. Hazard Class/Division of highest hazard involved with operation _____.

A1.3.3. Principle Hazard Involved _____.

A1.3.4. Check and post appropriate fire/hazard on facility storing explosives _____.

A1.3.5. Location (s) of the Operation (s): _____.

A1.3.6. Personnel Limits: Team Chief _____ Team Members _____ Vis-
itors _____.

A1.3.7. Safety Equipment required: Gloves ____, Ear Protection ____, Eye Protection ____, Safety
Kits_____.

A1.4. Operations/Task breakdown.

A1.4.1. General Task Precautions:

A1.4.1.1. Remove all jewelry prior to the start of an explosive operation.

A1.4.1.2. Do not park vehicles parked closer than 25 feet of an explosive operation or facility storing explosives.

EXCEPTION: When operation at hand requires the immediate upload/download of explosive assets

A1.4.1.3. Chock all explosive laden vehicles when they are not parked on a flat surface and ensure parking brake is set. NOTE: Parking brakes are a primary safety device and will be set any time vehicle is parked. **EXCEPTION: When chance of freezing weather is imminent do not set parking brake, this will eliminate possibility of hung brakes.**

A1.4.1.4. Use spotters prior to backing any explosive laden vehicle. When backing sound horn before proceeding.

A1.4.1.5. Loading and unloading explosives from a motor vehicle with the engine running is prohibited.

A1.4.2. _____ will drive transport vehicle. (if applicable to operation)

A1.4.3. _____ will coordinate all explosive movements through the Fire Department and ensure facility storing explosives is properly placarded.

A1.4.4. _____ will ensure vehicle load has been properly secured and vehicle is properly placarded to reflect highest hazard for transport.

A1.4.5. _____ will ensure the most direct route is taken from munitions storage area to "Base X" or "South Forty" training areas.

A1.4.6. _____ will responsible for exercise munitions storage facility and keys.

A1.5. Emergency Response Actions.

A1.5.1. _____ and _____ will man fire extinguishers.

A1.5.2. _____ will notify Fire Department via radio, telephone, or runner.
(Fire Dept. 911)

A1.5.3. _____ will sound the alarm.

A1.5.4. _____ will evacuate all non-essential personnel. Evacuation and assembly point in the event of an accident or incident will be at _____.

A1.5.5. _____ will direct operations until the Fire Department or EOD arrive on scene, and will record the time munitions were engulfed in flames or time at which mishap or accident occurred.