

**FISH AND WILDLIFE SERVICE
OCCUPATIONAL SAFETY AND HEALTH**

Occupational Safety and Health

Part 244 Explosives

Chapter 1 Explosives Safety

244 FW 1

1.1 What is the purpose of this chapter? This chapter:

- A. Describes the authorities, responsibilities, and terms we use for the chapters in Part 244, Explosives;
- B. Describes the types of explosives and storage devices and facilities we use in the Service;
- C. Provides requirements to ensure the safety of the public, as well as the personnel who handle, store, transport, or use explosives and explosive materials; and
- D. Introduces the other chapters in Part 244 on blasting (244 FW 2) and rocket netting (244 FW 3).

1.2 What is the Service policy on the use of explosives? Our policy is to:

- A. Use explosives, blasting materials, and rocket netting as efficient and cost-effective tools to accomplish our work;
- B. Provide authorization to Service personnel, as directed by their Project Leader, supervisor, or facility manager to use commercially available explosives; and
- C. Prevent occupational illness, injury, or property damage associated with handling, storage, transport, and use of explosives or explosive materials by establishing safe and effective procedures and controls to guard against and minimize mishaps.

1.3 What is the scope of the chapters in Part 244?

A. The chapters in Part 244 cover handling, storing, transporting, and using explosives by:

- (1) Service employees, and
- (2) Others performing official work for the Service or on Service property.

B. Specific requirements for:

- (1) Blasting are in 244 FW 2, and
- (2) Rocket netting of wildlife are in 244 FW 3.

C. The chapters do not cover:

- (1) The use, handling, storage, or transport of ammunition;
- (2) Transportation of explosives by aircraft (see 330 FW 4, Service Aviation Operations and Maintenance for information);
- (3) The management of unexploded ordnance or munitions of concern that we discover on Service property and were deposited as the result of Department of Defense (DoD) activities. See section 1.10F and the Service handbook, "Military Munitions and Explosives of Concern: A Handbook for Federal Land Managers, with Emphasis on Unexploded Ordnance," February 2006, for more information); and
- (4) Projects involving the use of explosives by contractors and other Federal agencies. Contractors and other Federal agencies must comply with the safety and health clauses in their contract agreements and with Federal, State, and local requirements. They must coordinate with station staff to ensure Service

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personnel are aware of the planned explosives use and that all safety procedures and processes have been implemented.

1.4 What are the authorities for the chapters in Part 244?

- A. Occupational Safety and Health Act (OSHA) of 1970; Federal Agency Safety Programs and Responsibilities (Public Law 91-596, Sec.19).
- B. OSHA Standards, Safety and Health Regulations for Construction (29 CFR 1926, specifically Subpart U, Blasting and the Use of Explosives).
- C. OSHA Standards, Safety and Health Regulations for General Industry, (29 CFR 1910, specifically 29 CFR 1910.109, Explosives and Blasting Agents).
- D. Bureau of Alcohol, Tobacco, Firearms, and Explosives; Commerce in Explosives (27 CFR 555).
- E. Bureau of Alcohol, Tobacco, Firearms, and Explosives, Publication 5400.7, Federal Explosives Law and Regulations (ATF Pub. 5400.7).
- F. Department of Transportation (DOT) Emergency Response Guidebook (DOT ERG).
- G. Regulations for Transportation, Office of the Secretary of Transportation (49 CFR Parts 105-180).
- H. Institute of Makers of Explosives (IME), Safety Publication Library No.22, Recommendations for the Safe Transportation of Detonators in a Vehicle with Certain Other Explosive Materials (IME SLP-22).

1.5 Who is responsible for the Service's explosives safety program? Table 1-1 shows who is responsible for the Service's explosives safety program.

Table 1-1: Responsibilities for the Explosives Safety Program	
This official...	Is responsible for...
A. The Director	<ul style="list-style-type: none"> (1) Ensuring that the Service maintains an effective and comprehensive occupational safety and health program, and (2) Approving our explosives safety program policy.
B. The Assistant Director - Business Management and Operations	<ul style="list-style-type: none"> (1) Ensuring we have an effective explosives safety program, and (2) Providing sufficient support and resources to the Chief, Division of Safety and Health, to ensure that the Chief can effectively accomplish program goals.
C. Regional Directors	Ensuring that there are sufficient resources and support in place to implement an effective and comprehensive explosives safety program within their areas of responsibility.
D. The Chief, Division of Safety and Health	<ul style="list-style-type: none"> (1) Setting explosives safety policy by revising and updating this and the other chapters in Part 244, and (2) Interpreting the requirements in Part 244 and resolving Servicewide issues and questions about our explosives safety program.
E. Regional Safety Managers	<ul style="list-style-type: none"> (1) Advising managers and Collateral Duty Safety Officers on the implementation of our explosives safety program in their Regions, (2) Interpreting program requirements and resolving Regionwide issues and

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Table 1-1: Responsibilities for the Explosives Safety Program	
This official...	Is responsible for...
	<p>questions,</p> <p>(3) Assisting with workplace assessments to determine the need for explosives safety, and</p> <p>(4) Providing guidance to Project Leaders/supervisors/facility managers on the following:</p> <p style="padding-left: 20px;">(a) Using engineering or administrative controls when workers are, or may be, exposed to chemical, physical, or biological hazards at or above established permissible exposure limits or threshold limit values when using explosives on the job,</p> <p style="padding-left: 20px;">(b) Buying and using personal protective equipment when engineering and administrative controls are not adequate (see 241 FW 3), and</p> <p style="padding-left: 20px;">(c) Evaluating the management of explosives during field station safety program evaluations.</p>
F. Contracting Officers	<p>(1) Ensuring that any contracts for transporting, handling, storing, or purchasing explosives and explosive-related materials contain the appropriate safety clauses and meet Federal, State, and local requirements; and</p> <p>(2) Ensuring contracts for work involving the use of explosives have the appropriate Federal Acquisition Regulation (FAR) accident prevention clause (e.g., FAR 52.236-13 "Accident Prevention" with Alternate 1 and Special Provisions).</p>
G. Project Leaders/Supervisors/Facility Managers	<p>(1) Ensuring personnel who handle, store, transport, or use explosives and explosive materials:</p> <p style="padding-left: 20px;">(a) Comply with this and the other chapters in Part 244 when using explosives on the job;</p> <p style="padding-left: 20px;">(b) Are current in Cardiopulmonary Resuscitation (CPR) and first aid; and</p> <p style="padding-left: 20px;">(c) Are authorized through training and experience to perform their particular function related to explosives (see 244 FW 2 and 3 for more information on training and authorization);</p> <p>(2) Entering information showing employees' completion of explosives training (blasting or rocket netting), including refresher training, into the Department's Learning Management System (e.g., DOI Learn);</p> <p>(3) Issuing and, if necessary, revoking blasting and rocket netting authorizations;</p> <p>(4) Evaluating operations and developing Job Hazard Assessments (JHA) to identify and guard against potential hazards associated with explosives (see 240 FW 1, Exhibit 1);</p> <p>(5) Providing the necessary personal protective equipment;</p> <p>(6) Providing access to medical service providers for those employees who get sick or experience ill effects from working with or being exposed to workplace hazards. We provide these medical services at no cost to the employee. Medical coverage must be consistent with the Federal Employee's</p>

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Table 1-1: Responsibilities for the Explosives Safety Program	
This official...	Is responsible for...
	<p>Compensation Act (see 242 FW 4);</p> <p>(7) Ensuring that appropriate personal exposure sampling data is provided to the servicing Human Resources/Human Capital office for inclusion in the employee's medical files. Appropriate sampling data is information we collect to comply with OSHA regulations (e.g., audiograms as described in 242 FW 3);</p> <p>(8) Ensuring secure storage, inventory, and physical inspection requirements of explosives, explosive materials, and storage magazines are in compliance with this and the other chapters in Part 244;</p> <p>(9) Ensuring Material Safety Data Sheets (MSDS) are available for each type of explosive and explosive material used and in stock; and</p> <p>(10) Immediately reporting any theft or loss of explosives or explosive material from their stock to:</p> <p style="padding-left: 40px;">(a) Their immediate supervisor or manager, and</p> <p style="padding-left: 40px;">(b) The Service's National Serious Incident Reporting Line at 1-888-519-3606. Also see 054 FW 1, Serious Incident Notification Procedures.</p>
H. Employees	<p>(1) Complying with this and the other chapters in Part 244 when working with explosives;</p> <p>(2) Successfully completing and maintaining current CPR and first aid qualifications;</p> <p>(3) Becoming authorized through training and experience to perform their particular function related to explosives (see 244 FW 2 and 3 for more information on training and authorization);</p> <p>(4) Wearing and maintaining personal protective equipment to reduce or eliminate potential workplace exposures;</p> <p>(5) Notifying their Project Leader/supervisor/facility manager if they are experiencing any adverse health effects;</p> <p>(6) Not smoking in or near the work area where explosives or explosive materials are stored, transported, or used;</p> <p>(7) To the greatest extent possible, avoiding use of two-way radios and cell phones in proximity to explosives because some explosives are sensitive to electric stimulus;</p> <p>(8) Using every reasonable precaution to ensure the safety and security of other personnel and the public; and</p> <p>(9) Immediately reporting to their Project Leader/supervisor/facility manager any theft or loss of any explosives or explosive material from their stock.</p>

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1.6 What terms do you need to know to understand the chapters in Part 244? Table 1-2 provides definitions of several terms we use in Part 244.

Table 1-2: DEFINITIONS OF TERMS: Click on a letter below to find a term.	
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z	
A	None
B	<p>Binary explosives (or two-component explosives). Consist of a liquid and a solid (powder). The components are not explosive until they are mixed. When the two components are mixed, they become a Division 1.1D explosive.</p> <p>Blast area. An area that includes the blast site and area immediately adjacent to the blast site that is within the influence of flying rock, missiles, and concussion.</p> <p>Blaster (authorized). The person or people authorized to use explosives for blasting purposes and meeting the qualifications in 29 CFR 1926.901.</p> <p>Blaster-in-charge. Blaster designated by the Project Leader/supervisor/facility manager and who has authority over all actions and operations related to the particular blasting operation.</p> <p>Blasting. The intentional activity of using explosives to perform a specific job function (e.g., tree removal, beaver dam removal, rock/boulder reduction, demolition, etc.).</p> <p>Blasting agents. A material or mixture, consisting of fuel and oxidizer, that is intended for blasting and not otherwise defined as an explosive (e.g., ammonium nitrate-fuel oil and certain water-gels).</p> <p>Blasting galvanometer. An electrical resistance instrument designed to test electrical circuits used with explosives. Used to measure resistance or check electrical continuity.</p> <p>Blasting machine. Firing source or igniter.</p> <p>Blast site. The area where explosive material is handled during set up and 15.2 meters (50 feet) in all directions from the perimeter.</p>
C	<p>Cannon net. An alternative to the rocket net. The only significant difference between it and the rocket net is the method by which the projected nets are pulled over the catching area. In cannon-netting, electrically-detonated cartridges simultaneously fire the projectiles that are attached to the net from smooth-bore cannons. Electric matches used to initiate cannon net charges are classified as Division 1.4D (minor hazard) explosives (see section 1.7). Smokeless powder designed for small arms ammunition and used to propel cannon nets is not explosives material.</p> <p>Cord, detonating, flexible. An article that has a core of detonating explosive enclosed in spun fabric with plastic or other covering (49 CFR 173.59).</p>
D	<p>Day-box. A portable magazine for the temporary and attended storage of explosives. (See Table 1-3).</p> <p>Deflagrate. The extremely rapid burning of a material. This is much faster than normal combustion, but slower than detonation.</p>

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Table 1-2: DEFINITIONS OF TERMS: Click on a letter below to find a term.

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

	<p>Detonator. A device containing an activating charge to trigger an explosion. The term includes, but is not limited to:</p> <ol style="list-style-type: none"> (1) Electric blasting caps of instantaneous and delay types, (2) Blasting caps for use with safety fuses, (3) Detonating-cord delay connectors, and (4) Nonelectric, instantaneous and delay blasting caps (27 CFR 555.11).
E	<p>Electric match. In the use of cannon netting, a firing device that initiates electric current and spark designed to ignite black powder. Electric matches are designated as Division 1.4D (minor hazard) explosives.</p> <p>Explosive materials. Any chemical compounds, mixtures, or devices that function by instantaneously releasing gas and heat, unless they are otherwise specifically classified by DOT.</p> <p>Explosives. Any chemical compound, mixture, or device that has the primary purpose of exploding. The term includes, but is not limited to:</p> <ol style="list-style-type: none"> (1) Dynamite; (2) Black powder; (3) Pellet powder; (4) Initiating explosives (e.g., lead azide, lead styphnate, diazodinitrophenel (DDNP)); and (5) Detonators, electric matches/squibs (miniature explosive devices), detonating cord, safety fuses, igniter cords, and igniters.
F - N	None
O	<p>Oxidizer. A material that may, generally by yielding oxygen, cause or enhance the combustion of other materials.</p>
P- Q	None
R	<p>Rocket net. Device used to quickly entrap various species of wildlife by propelling a shell and net through the air. Internal combustion rockets are connected to the nets with shock cords and ropes and are propelled by electrically fired Division 1.3C (fire hazard and minor blast/projection hazard) explosives.</p>

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Table 1-2: DEFINITIONS OF TERMS: Click on a letter below to find a term.

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

	<p>Rocket net area. An area that includes the rocket net site and area immediately adjacent to the rocket net site that is within the influence of flying net, rocket shell, and concussion.</p> <p>Rocket net propellant. Consists of M-6 240mm howitzer nitrocellulose propellant, primed with a starter packet of black powder and small 75mm howitzer pellets, initiated with an electric match.</p> <p>Rocket net site. The area where explosive material is handled during set up and 30.4 meters (100 feet) in all directions from the perimeter.</p> <p>Rocket netter (authorized). The person or people authorized to use explosives for rocket netting purposes.</p>
S	<p>Shunt. Clipping or twisting of two lead wires firmly together when preparing explosives.</p> <p>Standoff distance. Safe distance to keep people, buildings, vehicles, etc. from explosive source.</p>
T-Z	None

1.7 What are the different classes of explosives? We use two authorities to classify explosives. For transportation, classifying explosives is governed by 49 CFR, parts 105-180. For storage, classifying explosives is governed by 27 CFR part 555.

A. For transporting explosives: There are nine Hazard Classes for transporting hazardous materials. The DOT also established compatibility tables that govern how we may group hazardous materials together or keep them separate during transportation (49 CFR 173.52). Explosives are DOT Hazard Class 1. Hazard Class 1 is further divided into six divisions (49 CFR 173.50):

(1) Division 1.1 consists of explosives that have a mass explosion hazard. A mass explosion is one that affects almost the entire load instantaneously.

(2) Division 1.2 consists of explosives that have a projection hazard but not a mass explosion hazard.

(3) Division 1.3 consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

(4) Division 1.4 consists of explosives that present a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is expected. An external fire will not cause virtually instantaneous explosion of almost the entire contents of the package.

(5) Division 1.5 consists of very insensitive explosives. This division is comprised of substances that have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

(6) Division 1.6 consists of extremely insensitive articles that do not have a mass explosion hazard. This division is comprised of articles that contain only extremely insensitive detonating substances and are highly unlikely to accidentally detonate.

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B. For storing explosives: There are three classes for storing explosives (see 27 CFR 555.202):

(1) High explosives. These are explosives such as dynamite and flash powder that can be detonated with a blasting cap when unconfined.

(2) Low explosives. These are explosives that can deflagrate when confined (e.g., black powder, safety fuses, igniters, igniter cords, fuse lighters, and display fireworks).

(3) Blasting agents. These are materials or mixtures, consisting of fuel and oxidizer, that are used for blasting, but would not otherwise be an explosive (e.g., ammonium nitrate-fuel oil and certain water-gels).

1.8 What are the requirements for storing explosives and explosive materials? Buildings or other structures we use to store explosives and explosive materials are called magazines. Magazines must conform to the requirements in 27 CFR 555.203.

A. Types of Magazines. There are five types of magazines. You use them depending on the class of explosive you want to store (see Table 1-3). (You can find information on magazine construction in 27 CFR 555.)

Table 1-3: Storing Explosive Materials			
Magazine Type	Description	Classes of Explosives You Can Store	For Mobile Magazines, Before Entering a Roadway...
Type 1	Permanent magazine (e.g., a building).	HIGH EXPLOSIVES LOW EXPLOSIVES BLASTING AGENTS	Not applicable
Type 2	Mobile and portable indoor and outdoor magazines.	HIGH EXPLOSIVES LOW EXPLOSIVES BLASTING AGENTS	You must comply with transportation regulations (see 49 CFR 177.848, Segregation for Hazardous Material, and 49 CFR 173.52, Explosives Compatibility Table).
Type 3	Portable outdoor magazines or day-boxes for the temporary storage of explosives while attended.	HIGH EXPLOSIVES LOW EXPLOSIVES BLASTING AGENTS	
Type 4	Magazines used for storing low explosives, blasting agents, and detonators that will not mass detonate.	LOW EXPLOSIVES BLASTING AGENTS DETONATORS	
Type 5	Magazines used only for storing blasting agents.	BLASTING AGENTS	

B. Storage.

(1) Storage restrictions: Do not store detonators in the same magazine as explosives except:

(a) In a Type 1 or Type 2 magazine, you may store detonators with delay devices, electric squibs, igniters, and igniter cord; and

(b) In a Type 4 magazine, you may store detonators that will not mass detonate with electric matches/squibs, igniters, and igniter cord.

(2) Indoor magazines: For the indoor use of a Type 2 magazine, storage of explosives must not exceed a quantity of 50 pounds. More than one indoor magazine may be in the same building if the total quantity of explosive materials stored does not exceed 50 pounds. Type 2 indoor magazines must be equipped with substantial wheels or casters for easy removal in case of a fire. Paint Type 2 magazines red and put "Explosives – Keep Fire Away" in white lettering that is at least 3 inches tall on all sides and the top.

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(3) Binary explosives (see section 1.6B):

(a) Storage regulations do not apply to binary explosives until the two separate components are mixed. When the two components of binary explosives are mixed, they are a Division 1.1D explosive and you must not store them. You can store binary explosive components in the same space, and you do not need to keep them in a magazine. You may store binary explosive components in a well-ventilated locked cabinet designated to hold flammable liquids or a well-ventilated magazine that is approved for either detonator storage or explosive storage.

(b) Do not store the liquid compound nitromethane with other flammable or explosive materials. You can store the solid compound ammonium nitrate in the same magazine with and designated for storage of blasting agents.

1.9 Where can the Service build or locate magazines?

A. Table 1-4 provides CFR references that describe minimum distances where we may place or locate magazines.

Table 1-4: Building or Locating Magazines	
This type of magazine you want to build/locate...	Must be located no closer to other magazines in which explosives are stored, inhabited buildings, passenger railways, or public highways than the minimum distances specified in ...
Outdoor magazines for storing high explosives	27 CFR 555.218
Outdoor magazines for storing low explosives	27 CFR 555.219. (You cannot reduce the distances in CFR 27 555.219 by using barricades.)
Outdoor magazines for storing blasting agents in quantities of more than 50 pounds (if the agent is in a quantity of less than 50 pounds, the distances do not apply)	27 CFR 555.206 27 CFR 555.218

B. When storing ammonium nitrate in a magazine where you are storing blasting agents, you can store them no closer to magazines in which high explosives or other blasting agents are stored than the minimum distances for separation in 27 CFR 555.220.

C. You must keep the land surrounding a magazine clear of brush, dried grass, leaves, and similar combustibles for a distance of at least 25 feet. Do not store combustible and flammable materials within 50 feet of magazines.

D. For security reasons, the Project Leader or facility manager may decide whether or not to put signs or placards on buildings and outdoor magazines. Regardless of whether there are signs/placards, the Project Leader/facility manager must ensure that local responders (Federal/State/local law enforcement and firefighters) know in advance where the magazines are and the type and estimated quantities in storage at any given time. If the Project Leader/facility manager decides that buildings or outdoor magazines should show that there are explosives present, he/she must use the following signage on the building or magazine:

(1) "Explosives - Keep Off," and

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(2) "Danger-Never Fight Explosives Fires."

1.10 What are the general requirements for managing explosives? Project Leaders/supervisors/facility managers must ensure that they and their staff meet the following requirements:

A. Station Safety Plan. If you store or use explosives at a Service facility, the station safety plan must include specific instructions about storage, use, and emergency procedures.

B. Fire suppression. If a fire threatens to come in contact with explosive materials, stop all fire suppression activities and evacuate the area or facility.

C. Notification. Locations storing or using explosives must comply with notification procedures established by local management committees, fire departments, law enforcement, etc.

D. Inventory and Responsibility.

(1) Maintain a written inventory of all explosive materials within a magazine.

(2) Record receipt, removal, return, and use of explosives, including a total quantity remaining on-hand, on the inventory records.

(3) Keep explosives that are not in use locked in a magazine or in a locked day-box rated for the specific type of explosives. Keys or combinations to the locks should be available only to authorized personnel.

E. Inspection of Magazines.

(1) If you are responsible for storing explosive materials, open and inspect the magazine at least every 7 days. You do not have to inventory every 7 days, but this inspection should allow you to determine whether there has been unauthorized entry or attempted entry into the magazine(s) or unauthorized removal of the contents.

(a) Maintain a record showing dates of these inspections.

(b) During periods when no explosives are used or stored on site, you do not have to perform these inspections if the documented inventory properly reflects the period of time that explosives are not stored (e.g., during seasonal periods when explosives stocks are not needed).

(2) Perform and document magazine inspections in conjunction with scheduled facility inspections.

F. Management of Outdated, Deteriorated, or Found Explosives. Do not touch or move explosives that are outdated, deteriorated, or if you don't know where they came from ("found" explosives).

(1) The station safety plan must include phone numbers for local law enforcement who typically employ an Explosives Ordnance Disposal (EOD) team. If local law enforcement does not employ an EOD team, the station safety plan must include phone numbers for the nearest U.S. military base that employs an EOD team.

(2) A trained EOD team will dispose of outdated, deteriorated, or "found" explosives. You may also contact the Bureau of Alcohol, Tobacco, Firearms and Explosives for disposal assistance.

(3) Notify your Regional Environmental Compliance Coordinator and the Regional Safety Officer about any outdated, deteriorated, or "found" explosives.

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(4) Refer to the Service handbook, "Military Munitions and Explosives of Concern: A Handbook for Federal Land Managers, with Emphasis on Unexploded Ordnance," February 2006, for more information.

1.11 What are the requirements for transporting explosives? You can find specifics on the transportation of explosives in 49 CFR 105-180 and on the compatibility of explosives in 49 CFR 173.52. You must transport explosive materials in accordance with procedures in this chapter.

A. By motor vehicle:

(1) When the two components of binary explosives are mixed, they are a Division 1.1D explosive and you must not transport them. Transport binary agents in separate containers to prevent mixing in case of an accident.

(2) If you are transporting explosives, blasting agents, and blasting supplies on public highways, you must:

(a) Comply with local and State regulations, as well as 49 CFR Parts 105-180.

(b) During transit:

(i) Explosives other than detonators or blasting caps (including electric blasting caps) must be transported in a locked Type 3 magazine/day-box, or in a compartment or portable container that meets IME SLP-22 standards. Temporarily or permanently secure the Type 3 day-box or IME SLP-22 portable container to the vehicle (with direct access from outside of the vehicle) or secure them within the cargo-carrying space of the vehicle so that it is readily accessible.

(ii) Detonators or blasting caps (including electric blasting caps) must be transported in a separate container from other explosives. The container must meet IME SLP-22 standards. Temporarily or permanently secure the IME SLP-22 portable container to the vehicle (with direct access from outside of the vehicle) or secure it within the cargo-carrying space of the vehicle so that it is readily accessible.

(iii) When loading different explosives for transport, you must consider the divisions and compatibilities of explosives. While there are exceptions, generally explosives with different compatibility group letters should not be transported together on the same motor vehicle. See IME SLP-22 standards or 49 CFR 177.848.

(c) You must turn off the engine when loading or unloading Class 1 explosive materials.

(d) Vehicles we use for transporting explosives must:

(i) Be in good repair and mechanically sound.

(ii) In addition to carrying one fire extinguisher rated at 10-B:C (see requirements in 243 FW 1), each vehicle transporting explosive materials must contain one 10 pound fire extinguisher with a rating of at least 3-A:40-B:C. The fire extinguisher must be kept where the operator can get to it. Although you may use the extinguishers to fight fires near vehicles, you must never fight a fire in a vehicle that is carrying an explosive. Vehicles transporting bulk shipments (for other than immediate field use) must carry two 10 pound fire extinguishers with a rating of at least 3-A:40-B:C.

(e) Do not load vehicles beyond their rated hauling capacity. Secure explosives to prevent shifting of the load or dislodgment from the vehicle. Do not extend loads beyond the walls of the truck bed.

(f) Do not leave vehicles transporting explosives, detonators, or blasting agents unattended.

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B. By non-motorized means. When carrying explosives or transporting them in some way other than by motor vehicle, the requirements are:

(1) Only qualified employees who have been properly trained and certified in the safe handling and transportation of explosive material may transport explosives to blast or rocket net areas (see 244 FW 2 and 3 for more information about training).

(2) Do not carry explosive materials, including detonators and electric matches, in the pockets of your clothing.

(3) Carry explosives in a Type 3 portable magazine/day-box or in a bag or container that is water-proof and constructed of non-sparking and nonconductive material.

(4) Wrap detonators in suitable padding and carry them in a separate day-box, container, or bag from other explosives.

C. By watercraft:

(1) When loading, handling, or unloading Class 1 (explosive) materials:

(a) You must take adequate measures to prevent the packages from becoming wet, such as placing explosives in a waterproof magazine or day-box, or covering them with a waterproof tarpaulin.

(b) The watercraft must exhibit the following signals:

(i) By day, flag "B" (Bravo) of the international code of signals; and

(ii) By night, an all-round fixed red light.

(2) The lines you use to moor the watercraft must be strong enough and of the right type and quantity for the size of the watercraft and local conditions.

D. By aircraft: See 330 FW 4, Service Aviation Operations and Maintenance for information.

/sgd/ Rowan Gould
ACTING DIRECTOR

Date: November 24, 2010