1.0. General.

Port operations is an important part of the munitions inspection job. It is an area in which both the military and civilian inspectors must be proficient. Considerations must be given to receipt, storage, and shipment of munitions and other hazardous materials. Transportation regulations serve to minimize the dangers to life and property that are incidental to transportation of all types of explosive and dangerous articles. Hundreds of tons of munitions, explosives, and other dangerous materials are transported daily by rail, water, truck, and air, yet rarely does one hear of a disaster resulting from a shipment of munitions or explosives. Since you will be involved in the handling and transportation of this dangerous material, it is imperative that you be knowledgeable about the regulations governing its transportation, storage, and handling.

2.0. Types of terminals.

Terminals are key nodes in the total distribution system that support the commander's concept of operation at all levels of war and through the range of military operations. They provide loading, unloading, and handling of cargo and personnel between various transportation modes. When linked by modes of transport, they define the transportation structure for the operation. The two main categories of Army terminal operations consist of marine terminal operations and inland terminal operations. These are described below.

2.1. Marine terminals.

Marine terminals are classified into three types of facilities. These facilities include fixed-port, unimproved, and bare beach.

2.1.1. Fixed-port facilities.

Fixed-port terminals are an improved network of cargo-handling facilities de-signed to transfer oceangoing freight. These terminals are located worldwide. At these facilities, deep-draft oceangoing vessels berth themselves along a pier or quay and discharge cargo directly onto the apron. Most cargo is moved into in-transit storage areas to await terminal clearance. Selected cargo may be discharged directly to land transport. The type, size, number, and location of military marine terminals selected for use, dictate the number and types of units needed to sustain theater support requirements.

2.1.2. Unimproved port facilities.

An unimproved port facility is a site not specifically designed for cargo discharge. It does not have the facilities, equipment, and infrastructure characteristic of a fixed-port facility. The predominant characteristics of an unimproved port facility are insufficient water depth, insufficient pier length to accommodate oceangoing cargo vessels, and inadequate clearance network. As a result, shallow-draft lighterage must be used to discharge ocean going vessels anchored in the stream. Other facilities may be available, but they are

generally inadequate for cargo discharge operations on a scale associated with a fixed port. In most instances, US Army terminal service units using equipment organic to their table(s) of organization and equipment (TOE), operate unimproved port facilities. These terminals are established or used when developed fixed-port facilities are not available or are inadequate to support the workload.

2.1.3. Bare beach facilities.

A bare beach facility best fits the perceived definition of a logistics over-the-shore operations (LOTS). In a bare beach facility, Army lighterage is discharged across a beach. Normally no facilities, equipment, or infra-structure are available to support cargo loading, discharge, or port clearance operations. The terminal service and watercraft units must rely exclusively on equipment organic to their TOE or from engineer support units. Beach terminals require specifically selected sites where lighterage cargo is delivered to or across the beach and into marshaling yards or onto waiting clearance transportation. Landing craft, amphibians, and terminal units are used in a beach operation under the command and control of a terminal battalion. The same basic cargo-handling functions performed in a fixed port are the mission requirements at the beach terminal. However, beach operations are conducted under less than desirable conditions and usually require significant engineer support.

2.2. Inland terminals.

Inland terminals include, Air, Motor transport, Inland waterway, and Rail. Inland terminals provide cargo transfer facilities at interchange points between air, rail, truck, and water transportation nets. They also provide these facilities from connecting links between these modes when terrain and operational requirements cause a change in carrier.

2.2.1. Air terminals.

Air cargo transfer operations within the theater take place at Air Force and Army air terminals. The Air Force commander must provide terminal facilities at all points served by the United States Air Mobility Command (AMC) or tactical airlift aircraft. This includes loading and unloading the aircraft and Army clearance and delivery transport equipment.

2.2.2. Motor transport terminals.

Motor transport terminals are normally located at both ends of a line-haul operation. They form the connecting link between local hauls and the line-haul service. They may also be located at intermediate points along the line-haul route where terrain necessitates a change in type of carrier. Cargo transfer elements provide cargo handling service at motor transport terminals.

2.2.3. Rail terminals.

Rail terminals may include yard tracks, repair and servicing facilities, train crew accommodations, and railheads. They are located at originating and terminating points and at sites that mark the limits of rail operating divisions. A railhead can be any size yard or terminal on or at the forward end of a military railway where personnel, supplies, and equipment are transferred to other modes of transportation for further movement forward.

2.2.4. Inland waterway terminals.

Cargo transfer units are employed only at small intermediate cargo transfer points on the inland waterway systems (IWWSs). Limitations on their use at these points are the size and configuration of the waterway craft and capabilities and capacities of the unit's container handling equipment (CHE). When the waterway delivery is composed largely of barges, landing craft, and similar types of floating equipment, the cargo transfer company may be used in the transhipping process. However, when larger, ocean-type shipping is operated, transportation terminal service companies must be assigned for loading and discharge. In the latter situation, the cargo transfer unit may be assigned to support terminal service company shore platoons.

3.0. Surveillance branch functions.

The mission of the Surveillance Branch is to advise and assist the Chief, Safety and Security Division, and the Commander on all matters pertaining to explosive safety and to assure that safety requirements as promulgated by the Department of Defense (DOD), Department of the Army (DA), U.S. Coast Guard (USCG), and Department of Transportation (DOT) are met. The primary responsibilities of surveillance personnel at ports are:

- Inspect incoming and outgoing rail cars/trucks for sabotage and/or other unsafe conditions and to assure compliance with DOT regulations.
- To determine hazard classifications and Net Explosive Weight (NEW) of incoming rail cars/trucks prior to their transfer to appropriate holding areas.
- To monitor rail car and truck holding areas to assure compliance with DA explosive compatibility and Quantity-Distance criteria.
- To determine that munitions/explosives are handled correctly and safely while being unloaded from or loaded onto rail cars/trucks, barges, and ships.
- To assure development of vessel a stowage plan to determine that stowage is in accordance with Coast Guard compatibility charts.

- To see that all operations are safe and potential hazards are reduced to a minimum in accordance with DA, DOT and Department of Labor (DOL) regulations.

- To perform preloading safety inspections aboard vessels.

- To render technical aid and assistance as deemed necessary in connection with the movement, salvage, demolition and neutralization, or other disposition of Government owned shipments of explosives and other dangerous articles being transported by land carriers.

- To inspect munitions/explosives involved in accidents and determine the extent of damage and degree of hazard present.

- To destroy unserviceable and hazardous munitions/explosives which cannot be salvaged or is determined to be unfit for its intended purpose.

- To assure the packaging quality of munitions/explosives to be loaded is in keeping with DA standards.

- To maintain official current file of waivers that have been approved for the terminal.

4.0. Regulations pertaining to transportation.

4.1. Bureau of Explosives (BOE) Tariff BOE 6000-series.

This publication is published by the Association of American Railroads and contains rules and regulations covering packaging, placarding, and movement of explosive and hazardous materials. It is a reprint of Parts 171 through 180 of Title 49: Code of Federal Regulations (CFR) for Hazardous Materials.

CFR Title 49, Transportation, is divided into subtitles, chapters and subchapters as shown on the first page of the CFR Section of Student Handout 09C-HO1. The CFR is broken down further into parts, subparts, sections, and paragraphs. Parts are numbered sequentially using a 3 Digit Numbering System such as; 106, 107, 171, through 180. The CFR location of 177.202 is broken down as follows; the first three digits of this number represents the part. The number to the right of the decimal point is the individual section number which are numbered in sequence. Paragraphs are lettered with lower case letters or numbers.

- Each part in the publication has an index for material contained in the part. The index is located on the first of the part.

- Contents Of Applicable Parts:
    - Hazardous materials table for shipments by air, rail, highway, and water (part 172). Optional hazardous material table.
    - Labeling hazardous materials (part 172, subpart E).
    - Placarding hazardous material (part 172, subpart F).
    - Classes of explosives and definitions (part 173, subpart C).
    - Loading and storage chart, hazardous materials (rail only) (part 174, subpart C).
    - Carriage by vessel (part 176).
    - Loading and storage chart, hazardous materials (highway only) (part 177, subpart C).

4.2. Joint Hazard Classification System for Munitions and Explosives. (JHCS)

The JHCS is the highest reference for item Hazard Class/Division, storage compatibility group, and net explosive weight data used in this class as a source of United Nations Organization (UNO) hazardous material identification numbers. It is located in Student Handout 09C-HO1.

4.3. AR 55-355, Military Traffic Management Regulation.

AR 55-355 is published as an Army Regulation, Navy Publication, Air Force Manual, Marine Corps Order, and Defense Supply Agency Regulation. Chapter 33 governs transportation of explosives and other dangerous articles by all modes of commercial transportation within CONUS. The contents of the applicable parts of chapter 33 are:

- Section I - General. Contains general information such as the purpose and scope, responsibilities of military departments and transportation officer when shipping explosives and hazardous articles, labels and placards.
- Section II - Motor Vehicle Transportation. Points out that shipments of Classes A or B munitions and explosives, poisons, and radioactive yellow II and III label materials will only be tendered to motor carriers who are on the HQ MTMC list of motor carriers approved to transport Classes A and B munitions for the DOD and who comply with DOT and other transportation safety regulations, or to local drayage carriers that are complying or have filed a certificate stating they will comply with DOT safety regulations and all other applicable state and local laws and regulations.

Also covered in this section are the:

- Inspection of vehicles, which is required before loading and unloading.
- Preparation of DD Form 626, Motor Vehicle Inspection.
- Distribution of completed DD Form 626.
- Use of DD Form 836 (Special Instructions for Motor Vehicle Drivers) by TO's to provide emergency response instructions to drivers transporting explosives or certain other hazardous materials.
- Sealing of motor vehicles.

- Section III - Rail Freight Transportation. This section touches on car inspection, certification, and sealing, and directs the reader to the DOT regulations.
- Section IV - Commercial Air Transportation. Although channels exist to transport military explosives by commercial air, military air is the preferred method.
- Section V - Exemptions.

4.4. TM 9-1300-206, Ammunition Explosive Standards.

Chapter 6, Section II, Paragraphs 6-7 through 6-14 of this manual outlines regulations controlling the shipping and transportation procedures of explosives and munitions. The following is the material covered in each paragraph:

- Paragraph 6-11: Shipment by rail.
- Paragraph 6-12: Shipment by vessels.
- Paragraph 6-13: Shipment by motor vehicle.
- Paragraph 6-14: Shipment by aircraft (military and nonmilitary aircraft).

4.5. FM 55-60, Army Terminal Operations.

This publication is directed toward Army Terminal Operations in a theater of operations. It contains procedures and techniques to be used in planning, executing, and controlling Army water, motor, rail, and air terminal operations. Provides information for establishing holding areas, and conducting load, offload, and storage operations. Illustrates techniques to be used in a field environment. During emergency combat situations, procedures from this publication can be implemented in established ports.

5.0. Summary.

This lesson was an introduction to port operations. The material covered will be used and expanded upon in future lessons.

STUDENT CHECK

1. Where is the procedure found for preparing a rail car for a shipment of Class 1.1 explosives?

2. May Class/Division 1.1 explosives in SCG D and SCG E be transported together on the same motor vehicle?

3. What publication gives information on preparation of DD Form 626, Motor Vehicle Inspection?

4. What placard is required when shipping Class/Division 1.2 explosives by rail freight?

5. What length should fire hoses be during the handling, loading, or unloading of military explosives aboard vessels ?

STUDENT CHECK SOLUTIONS
LESSON C12

1. Answer: Consult the table of contents and use the following procedure to answer the question:

   (1) This question pertains to rail cars. Locate, the part for rail shipments. Rail shipments are covered in CFR Part 174.

   (2) A shipment is to be made, thus the rail car is to be loaded. Open part 174 and locate the subpart that covers the selection, preparation, inspection, and certification of cars (Subpart E, para 174.104).

2. Answer: Yes. According to note (ii) 2 in the Compatibility Table for Class 1 (Explosive) Materials, any combination of explosives from SCGs C, D, or E is assigned to SCG E; hence, SCG D and SCG E would equate to shipping E with E.

3. Answer: AR 55-355.

4. Answer: Explosive 1.2., (CFR 172.504, Table 1).

5. Answer: Fire hoses shall be of sufficient length to reach every part of the loading area, (part 176.164 (b)).