

ASSESSMENT OF DOD'S ARMS, AMMUNITION, AND EXPLOSIVES EMERGENCY RESPONSE NOTIFICATION PROCESS

REPORT LG401T2

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Executive Summary

Since September 11, 2001, the Department of Defense has responded to the heightened awareness of potential vulnerabilities to homeland defense with a renewed emphasis on protecting the distribution of its arms, ammunition, and explosives (AA&E). Recognizing the need to closely examine and strengthen the AA&E logistics chain, DoD developed the *Department of Defense Strategic Plan for the Distribution of AA&E*, which the Deputy Secretary of Defense approved and issued in May 2004. The strategic plan defines the mission, vision, goals, and objectives for improving the distribution of AA&E. It also identifies 23 actions to improve the current AA&E logistics chain. One of those actions is to improve the coordination and cooperation of emergency response to AA&E incidents.¹

The Assistant Deputy Under Secretary of Defense for Transportation Policy (ADUSD[TP]) is responsible for DoD policy affecting the efficient, effective, safe, and secure movement of defense materiel and personnel worldwide and has oversight of the strategic plan's implementation. The ADUSD(TP) requested LMI's assistance in assessing and recommending improvements to DoD's current AA&E emergency response process in direct support of the strategic plan and based on several recent events. The events included a breakdown in the emergency response notification process involving a rail movement of AA&E² and the decision to consolidate responsibility for AA&E in-transit emergency response notification and safety and security compliance oversight

¹ The Surface Deployment and Distribution Command Freight Traffic Rules Publication, No. 1C, 4 January 2004, defines an emergency as any "situation" associated with in-transit DoD AA&E or other sensitive materiel (OSM) that endangers the materiel, the general public, or the transporting carrier's personnel, equipment, or facilities, or threatens national security due to loss of ordnance-related high technology. The broad term "incident" includes accidents, fire, hijacking, theft, civil disturbance, equipment failure, labor strikes, natural disasters, and a threatened or real attack.

² In April 2004, a Federal Railway Administration (FRA) agent contacted the Army Operations Center (AOC) to inquire about a railcar containing military munitions near McAlester Army Ammunition Plant. The AOC watch officer who took the call was unfamiliar with operating procedures or contacts for rail-related emergencies, and was unable to assist the FRA agent. The FRA agent was transferred seven times in 44 minutes and then disconnected without receiving the requested information. SDDC personnel conducted several test calls to the AOC to determine if corrective action was taken and ensure AOC personnel were instructed in the correct response procedures. Each test failed.

(including transfer of the Defense Transportation Tracking System [DTTS]) under the Military Surface Deployment and Distribution Command (SDDC).³

BACKGROUND

The Secretary of the Army is the DoD executive agent for emergency response to transportation mishaps involving ammunition and explosives. This includes responsibility for developing command and control procedures and maintaining the DoD coordination center for the initial notification of accidents involving ammunition and explosives.⁴ This mission is executed through the Army Operations Center (AOC) and supported by DTTS satellite tracking of AA&E shipments, and by SDDC, which monitors carrier and shipper compliance with safety and security requirements. The Defense Logistics Agency (DLA) coordinates emergency response notification for other DoD hazardous material (HAZMAT) shipments. DLA's Defense Supply Center Richmond (DSCR) is charged with accomplishing this mission.

The AOC is actually the DoD focal point for numerous issues and incidents; only one of its roles is the coordination of emergency response to transportation incidents involving AA&E. DoD previously looked to the individual AA&E shipping activities as the principal contacts and emergency mitigation focal points for shipments originating at those activities. Following several serious AA&E accidents, DoD replaced this ineffective procedure with the central AOC focal point. Although not a perfect notification process, the AOC provides many advantages over other alternatives to initiating emergency response to an AA&E incident. We do not recommend changing the AOC's current role as DoD's coordination center for the initial notification of transportation incidents involving the AA&E, but we do recommend enhancing the current notification process.

Although DoD has experienced a relatively small percentage of emergencies compared to the total number AA&E shipments it makes each year (less than 0.2 percent), only one explosives incident—if not responded to quickly and correctly—could be catastrophic. This is especially true considering military munitions contain explosive and other hazards that may be unique to DoD and local emergency response personnel routinely are not familiar with information about the hazards of those materials. Examples include the 1984 Mark 48 Torpedo accident in Denver, Colorado, and the 1985 2000 lb. bomb accident in Checotah, Oklahoma. Both incidents had significant public safety and economic implications, resulted in Congressional and National Transportation Safety Board investigations and hearings, and produced sweeping changes to how DoD transports and monitors its movements of AA&E and responds to emergencies.

³ The Navy and SDDC agreed to transfer DTTS to SDDC in FY2005 to centralize oversight and management of in-transit AA&E within SDDC.

⁴ DoD Directive 6055.9, *DoD Explosives Safety Board (DDESB) and DoD Component Explosives Safety Responsibilities*, 29 July 1996.

OUR APPROACH

To meet the task objectives, we reviewed current emergency response policies, notification procedures, and roles and responsibilities and documented the current emergency response process. This included reviewing the emergency response procedures used by DSCR for DoD shipments of other HAZMAT to compare similarities and differences and to determine whether DoD can leverage best practices between the two processes. In addition, we analyzed FY2003 and FY2004 DTTS emergency response data and interviewed stakeholders.

OUR ASSESSMENT

Our assessment found deficiencies that DoD must address in order to significantly improve and streamline the current AA&E emergency response process.

- ◆ Lack of rail shipment visibility within DTTS will continue to hinder rapid response to rail-related incidents and place greater burden on AOC personnel to mitigate these incidents.
- ◆ Some AOC personnel charged with receiving the initial notification of an incident are not familiar with transportation emergency response procedures or knowledgeable of AA&E safety and security characteristics essential for determining the severity of an incident.
- ◆ There are only a few automated tools to assist AOC and other personnel in readily accessing commodity specifics, hazard characteristics, and mitigation guidance to determine the nature and severity of the emergency and render assistance in mitigating an incident.
- ◆ The emergency response process has too many organizations engaged in emergency notification and in dispatching Explosive Ordnance Disposal (EOD) assistance. This leads to confusion with respect to responsibilities and can result in duplication or gaps in the incident coordination process and increase response times.
- ◆ DoD organizations use operating procedures that lack sufficient detail and are too generic. (They do not distinguish between different commodities or modes of transportation that may often dictate different mitigation actions.)
- ◆ Internal operating procedures are not always consistent with procedures specified in governing regulations. Dated policies and regulations may contribute to this problem. Also, procedures and organizations involved in the emergency response process often differ depending on who receives the initial notification of an incident, and responses can vary widely by situation and mode of transportation.

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- ◆ There are different focal points, efforts, and emergency response procedures for transportation incidents involving AA&E and other HAZMAT. Potential efficiencies may be gained by combining or leveraging these separate programs.
 - ◆ Although there are a few published “goals,” there are very few metrics to determine the responsiveness or effectiveness of each participant involved in the current emergency response process.
 - ◆ While certain segments of the emergency response process are occasionally tested, the entire “end-to-end” emergency response process is not tested to ensure all process participants understand their roles and all assignments are executed effectively.

RECOMMENDATIONS

In view of our assessment findings, we propose ADUSD(TP) and the Army consider the following recommendations:

- ◆ Continue to use the AOC as DoD’s coordination center for the initial notification of accidents and incidents involving the transportation of AA&E.
- ◆ Designate the DTTS program office as the initial notification point for AOC personnel after being alerted of any AA&E in-transit incident and for disseminating incident alerts and follow-on status updates to DoD components and other interested parties.
- ◆ Expedite the expansion of DTTS to track rail shipments of AA&E.
- ◆ Train newly assigned AOC personnel (with refresher training thereafter) on AA&E hazard characteristics and procedures for mitigating incidents involving AA&E (and potentially other HAZMAT).⁵
- ◆ Acquire and implement an intuitive software or web-based emergency response and mitigation support system.
- ◆ Streamline the emergency notification process for notifying and requesting EOD assistance and incorporate technology to speed the notification process.
- ◆ Revise, de-conflict, and coordinate standard operating procedures across the multiple organizations involved in the emergency response process; add specificity to address incidents involving multiple modes of transportation and different commodities and emergency scenarios.

⁵ The intent here is not to train AOC personnel to directly mitigate incidents involving AA&E, rather, to be sufficiently familiar with the hazard characteristics of AA&E to be able to effectively collect pertinent information from the initial caller and communicate with emergency response personnel.

- ◆ Update and de-conflict emergency response policies and regulations to reflect enacted changes and the current security environment.
- ◆ Assess the feasibility of expanding AA&E emergency response policies and responsibilities to include “other” HAZMAT. The assessment should consider the viability of combining DoD AA&E and other (non-AA&E) HAZMAT response missions and functions or, at a minimum, expanding current AA&E emergency response oversight, procedures and DTTS tracking for selected DoD-unique HAZMAT (for example, nuclear waste, exotic fuels and toxic inhalation hazard material).
- ◆ Define emergency response metrics. Metrics could include times to complete steps in the emergency response process, times to dispatch EOD teams, number of resolved incidents, and any problems that arose as well as the quantity of missing information or number of process delays.
- ◆ Regularly exercise the AA&E and other HAZMAT end-to-end emergency response process, including different commodities, modes of transportation, and incident scenarios.

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Chapter 1

Introduction

In this chapter we present the background, objectives, approach and organization for this report.

BACKGROUND

Since September 11, 2001, the Department of Defense has responded to the heightened awareness of potential vulnerabilities to homeland defense with a renewed emphasis on the safe and secure distribution of its arms, ammunition, and explosives (AA&E). In May 2004, the Deputy Secretary of Defense approved the *Department of Defense Strategic Plan for the Distribution of AA&E*. The DoD sponsored the strategic plan to define the vision, goals and objectives for the distribution of AA&E, with an overall intent of dramatically improving the safe, secure, effective, and efficient movement of AA&E. The Assistant Deputy Under Secretary of Defense for Transportation Policy (ADUSD[TP]) is responsible for DoD policies that affect such movement of defense materiel and personnel worldwide and has oversight of the strategic plan's implementation, including coordinating implementation of the 23 actions identified in the plan.

One of the plan's 23 actions is to "review the current process of notifying management, investigative and incident assistance activities to determine if there are opportunities for streamlining the process to achieve a more timely and effective mode of operation." Several recent events support this priority assessment of the current AA&E emergency response notification process.

- ◆ The ADUSD(TP) recently sponsored an assessment of the Navy's Defense Transportation Tracking System (DTTS) and the Military Surface Deployment and Distribution Command's (SDDC) Intelligent Road Rail Information Server (IRRIS). That assessment identified redundancies and voids in the emergency response notification process and culminated in a decision to transfer the DTTS mission from the Navy to SDDC. This decision centralizes the in-transit AA&E oversight mission within SDDC and will become effective in FY2005.
- ◆ In April 2004, the emergency response notification process failed when a Federal Railway Administration (FRA) agent was unable to obtain assistance through AOC and SDDC contacts in response to an inquiry regarding a rail movement involving military munitions. In the days following this event, SDDC personnel again tested the emergency response notification process without success.

For these reasons the ADUSD(TP) requested LMI’s assistance to assess and recommend improvements to DoD’s AA&E emergency response process.

There are a number of DoD organizations that support the AA&E emergency response notification process. These organizations and their roles are discussed in Chapter 2. Effective and timely response to an in-transit AA&E emergency is contingent on every organization understanding and fulfilling their respective mission responsibilities, including having access to the necessary tools to capture critical information and to effectively share that information within DoD and with local emergency response personnel.

Table 1-1 reflects the number of reported emergencies¹ compared to the total number of DoD AA&E shipments tracked during FY2003 and FY2004. Ninety percent of the transportation incidents reported to the AOC are commercial motor carrier movements of AA&E and begin with a DTTS-triggered notification process—either through a panic button alert or through DTTS staff monitoring movement exceptions. It is the remaining 10 percent of transportation incidents (those that may involve rail movements or motor carrier incidents that are not detected immediately through DTTS) that presents the greatest challenge to the current emergency response notification process.

Table 1-1. Comparison of Reported Emergencies and Total AA&E Shipments

	FY2003	FY2004
Shipments monitored	57,694	56,933
Emergencies	92	109
Emergencies as a percentage of total shipments	0.16%	0.19%
Number of DTTS-triggered AOC notifications (90%)	83	98
Number of direct AOC notifications	9	11

Although DoD has experienced a relatively small number of emergencies compared to the total number AA&E shipments it makes each year, only one explosives incident, if not responded to quickly and correctly, could be catastrophic and result in loss of life and property or disrupt key transportation infrastructure. This is especially true considering military munitions contain explosive and other hazards that may be unique to DoD, and local emergency response personnel are not routinely familiar with information about the hazards of those materials.

¹ The SDDC Freight Traffic Rules Publication No. 1C, 4 January 2004, contains the criteria under which commercial carriers use DTTS and report emergencies or incidents under *Satellite Motor Surveillance Service*. An emergency is defined as any “situation” associated with in-transit DoD AA&E or other sensitive materiel (OSM) that endangers the materiel, the general public, or the transporting carrier’s personnel, equipment, or facilities, or threatens national security due to loss of ordnance-related high technology. The broad term “incident” includes accidents, fire, hijacking, theft, civil disturbance, equipment failure, labor strikes, natural disasters, and a threatened or real attack.

Examples of the potential far-reaching implications of military munitions incidents include the 1984 Mark 48 Torpedo accident in Denver, Colorado (Figure 1-1), and the 1985 2000 lb. bomb accident in Checotah, Oklahoma (Figure 1-2).

Figure 1-1. Accident Involving Mark 48 Torpedo (1984; Denver, CO)

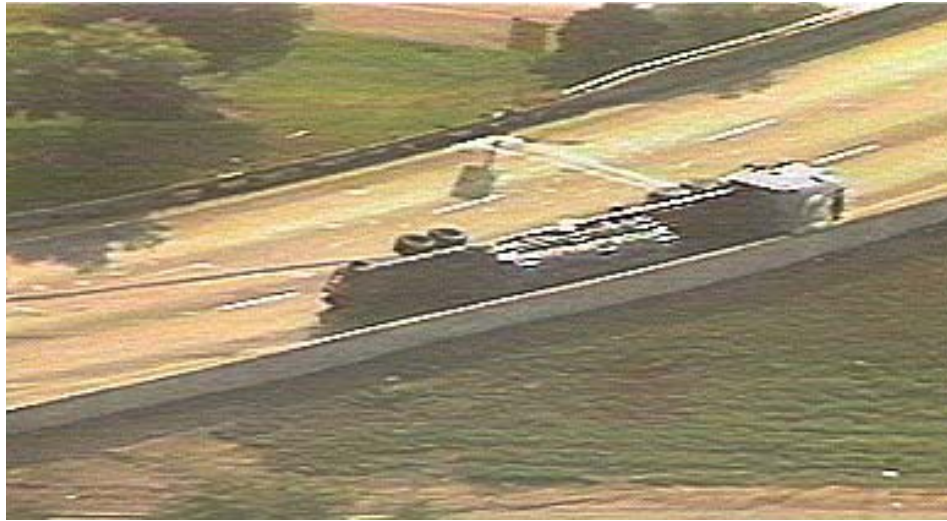


Figure 1-2. 2000 lb. Bomb Accident (1985; Checotah, OK)



The Denver accident closed two major interstate highways through the city for an entire day with enormous economic impact. During the Checotah accident several of the bombs being transported detonated, causing several million dollars in damage to the town's infrastructure, including damage to the elementary school and total loss of a fire truck. The detonation also closed Interstate 40 for several days until repairs to the highway could be made. Fortunately, there was no loss of life

in either incident. Both Congress and the National Transportation Safety Board conducted investigations and hearings on these accidents, and DoD invested millions of dollars and significant manpower to institute sweeping changes to how it transports, oversees, tracks, and responds to emergencies involving its AA&E shipments.

Following the Denver accident, the Navy convened a special commission to investigate ordnance transportation. The recommendations of this commission included the formation of a centrally managed program for tracking Navy AA&E shipments. The initial program, known as the Naval Ordnance Transportation Tracking System, began operation in June 1986. In 1989, the program was expanded to track all DoD AA&E shipments and renamed the Defense Transportation Tracking System.

OBJECTIVES

LMI's task objectives were fourfold:

1. Assess and diagram the current DoD emergency response notification process and identify deficiencies that may exist.
2. Assess roles, responsibilities and authorities.
3. Evaluate policy guidance and operating procedures.
4. Recommend improvements to fix any deficiencies identified and improve the process.

APPROACH

To meet these objectives, we reviewed current emergency response policies, notification procedures, and roles and responsibilities. In addition, we analyzed FY2003 and FY2004 DTTS emergency response data, interviewed stakeholders and developed as-is process flow diagrams that illustrate current mode-specific procedures.

While conducting our assessment, we considered solutions for

- ◆ streamlining, standardizing, and improving the notification and response process; and
- ◆ improving roles and responsibilities.

REPORT ORGANIZATION

In this report we document our review and assessment of current AA&E emergency response procedures and provide recommendations for process, organizational, and technical improvements.

- ◆ In Chapter 2, we describe the current emergency response process and identify areas of concern.
- ◆ In Chapter 3, we present our assessment findings.
- ◆ In Chapter 4, we present our recommendations.

In the appendices, we provide detailed descriptions of current notification processes by mode, present detailed roles and responsibilities by policy, list the organizations we interviewed, and list the regulations we reviewed.

- ◆ Appendix A, Flowcharts of Emergency Response Processes
- ◆ Appendix B, Roles and Responsibilities
- ◆ Appendix C, Organizations Interviewed
- ◆ Appendix D, Policies Reviewed
- ◆ Appendix E, Abbreviations.

Chapter 2

Emergency Response Process and Players

In this chapter, we introduce the key organizations that play a role in emergency responses to incidents involving DoD movements of AA&E, provide an overview of the initial notification processes, and discuss the metrics currently collected for the emergency response process.

EMERGENCY RESPONSE ORGANIZATIONS

Due to the critical nature of AA&E and the potential harm to the general public during an accident or incident, there are several organizations that play a variety of roles in the emergency response process.

The Army and the Army Operations Center

The Secretary of the Army serves as the DoD executive agent for emergency response to transportation mishaps involving ammunition and explosives and is tasked to develop command and control procedures and maintain the DoD coordination center.¹

The Deputy Chief of Staff for Operations and Plans (G3) has overall staff responsibility for emergency response support; the Deputy Chief of Staff for Logistics (G4) is responsible for staff supervision of Department of Army transportation services required for movement of conventional ammunition and explosives and for the Army Explosive Ordnance Disposal (EOD) Program.²

The Army Operations Center (AOC) is tasked to serve as DoD's coordination center for emergency response to transportation accidents that involve munitions and explosives within the continental United States (CONUS).³ The AOC's objective is to answer calls from any source—public or private—and contact the appropriate military service or command to initiate mitigation action. The AOC's responsibility includes munitions and explosives moving by all modes of transportation within CONUS.

¹ In accordance with DoD Directive 6055.9, *DoD Explosives Safety Board and DoD Component Explosives Safety Responsibilities*, 29 July 1996.

² Ibid.

³ In accordance with Army Regulation (AR) 385.14, *Transportation Accident Prevention and Emergency Response Involving Conventional Munitions and Explosives*, 8 April 1991.

DTTS Program Management Office

The DTTS Program Management Office (PMO) monitors sensitive CONUS shipments, including AA&E, classified, and high-value cargo moving via commercial motor carrier, as well as nearly all barge and towboat⁴ AA&E movements from consignor to consignee. Shipments are monitored using periodic satellite positioning and other coded and text messages⁵ from transponder-equipped vehicles. DTTS also receives driver-initiated “panic button” alerts and coordinates responses to in-transit accidents or incidents.

DTTS is a component of the Naval Operational Logistics Support Center and has been in operation since June 1986. The Navy recently agreed to an ADUSD(TP) proposal to transfer DTTS to SDDC in order to centralize management of in-transit AA&E under a single DoD component. The transfer is expected to be completed in FY2005.

The primary DTTS mission is to ensure the safe and secure movement of AA&E while it is in the public domain, and to provide in-transit visibility for AA&E and other sensitive materiel (OSM). DTTS is jointly funded by all of the military services, as documented in the DTTS Joint Service’s Memorandum of Understanding and Charter (last updated in December 2000), and receives tasking and direction from a joint service working group and Council of Colonels and Captains. Because of the impending transfer of DTTS to SDDC, regulations and internal emergency response procedures will require revision, synchronization, coordination, and testing with the AOC.

U.S. Forces Command

The U.S. Forces Command (FORSCOM) is the Army Component of the United States Joint Forces Command and the Army’s largest major command. FORSCOM includes both Army Active Component and Reserve forces in the continental United States and Puerto Rico. As the Army component of Joint Forces Command, FORSCOM provides military support to civil authorities, supports domestic counter-drug activities, and commands Joint Task Force Six. It provides domestic disaster and emergency response assistance and supports joint integration and joint experimentation missions of the Joint Forces Command. FORSCOM also has command over the 52nd Ordnance Group.

In accordance with AR-385.14, the AOC tasks FORSCOM to arrange for EOD service and support from the nearest explosive ordnance disposal unit—regardless of

⁴ Shipments include Port Canaveral to Andros Island; Indian Island, Washington, to Valdez, Alaska; and San Diego, California, to San Clemente Island. The only known barge movements not tracked by DTTS are Hawaii (inter-island) moves. Pacific Command considers the current safety and security features adequate for these shipments.

⁵ In accordance with the Defense Transportation Regulation (DTR) Part II, *Cargo Movement and SDDC Freight Traffic Rules Publication* (MFTRP) No. 1C, Item 47 (Motor) and No. 30, Item 44 (Barge).

the service affiliation—when assistance is needed at the scene of a transportation mishap involving DoD munitions or explosives. Current AOC procedures also call for FORSCOM to notify the nearest military installation and request their assistance for on-scene support.

The 52nd Ordnance Group

The 52nd Ordnance Group is the command and control headquarters for all Army EOD companies and battalions located within the continental United States, the U.S. Virgin Islands, and Puerto Rico. Although subordinate units are trained and equipped for combat operations, they may also support a variety of peacetime missions when tasked by FORSCOM, including coordination of EOD response to transportation incidents that involve military munitions.

Explosive Ordnance Disposal Teams

EOD teams have the training to evaluate, render safe, and remove conventional, chemical, biological, or nuclear ordnance or improvised explosive devices that pose an immediate threat to public safety. Located throughout the United States, EOD teams conduct various clearance and disposal operations and work with local emergency response authorities to establish a safe distance perimeter and ensure explosive materiel is rendered safe prior to handling, repackaging, or movement when assisting in accidents and incidents involving military munitions within the public domain.

U.S. Department of Transportation

The U.S. Department of Transportation (DOT) is responsible for ensuring the safe commercial transportation of hazardous material. This includes development and enforcement of transportation safety rules and regulations and emergency response and incident mitigation guidance. DOT safety statutes and regulations are promulgated in Title 49, *Code of Federal Regulations*.

Military Surface Deployment and Distribution Command

SDDC is a major Army command and the surface component command of the U.S. Transportation Command (USTRANSCOM). Among its numerous mission responsibilities, SDDC contracts for the transportation of sensitive AA&E and other materiel and monitors AA&E movements as part of its carrier performance responsibility to ensure shipper and carrier compliance with DoD safety and security requirements.

Local Authorities

Local authorities (for example, police and fire departments or other state and local safety officials) are usually the first responders on the scene of accidents or incidents

involving military AA&E. These authorities often place initial emergency calls to military authorities, such as the nearest military activity, shipping activity, or the AOC, because the shipping activity is identified and the AOC emergency phone number is reflected on shipping documentation.⁶ Whenever local emergency assistance is dispatched, these authorities also provide on-scene support by establishing and maintaining a safe-distance perimeter, evacuating the area, ensuring public safety, and performing other functions to facilitate resolution of the emergency.

Representatives from the nearest DoD activity may also be dispatched to the scene to provide immediate assistance in the form of public affairs, military liaison, security, legal, logistics, and environmental support.

Munitions Carrier

The munitions carrier is legally responsible and liable for ensuring corrective measures are taken to resolve the emergency under DOT regulations (Title 49, Code of Federal Regulations) and contractual provisions. This includes dispatching replacement equipment and operators to the site of the emergency, cleaning the site, and ensuring cargo is safely moved to its final destination or for other disposition, as determined by the DoD.

RESPONSE AND NOTIFICATION PROCESS

The initial emergency notification varies by situation and mode of transport. Currently, DTTS only tracks motor carrier, tow boat, and barge moves. It does not track rail, air, sealift, or international shipments.⁷ Truck or towboat and barge operators must activate a panic button to alert DTTS of an incident; however, an operator may be incapacitated, making notification via a DTTS panic button signal impossible. Non-activation of the panic button does not prevent DTTS from sensing an incident, but, absent such activation, significant time can be lost in the emergency response process. DTTS can sense an incident by monitoring a shipment's status and detecting non-movement. In these instances, DTTS staff will communicate via the carrier dispatcher to determine the reason for non-movement. In the event there is no response from the operator, DTTS staff contact local authorities and request assistance.

In the following sections, we highlight the emergency response process for DTTS-triggered incidents and non-DTTS-triggered incidents. In Appendix A, we present a step-by-step description and diagram of the current notification process by mode. The processes described below are the actual processes followed today. Their compliance with policy is addressed in our findings presented in Chapter 3.

⁶ The AOC phone number is also listed in the DOT *Emergency Response Guide*, which is available to police, fire departments, and other state and local safety authorities.

⁷ Rail incidents typically are reported via a phone call from local authorities or from railroad employees, and are usually passed to the AOC or SDDC, rather than DTTS, for action.

DTTS-Triggered Notification

During FY2004, 90 percent of the transportation accidents or incidents involving AA&E reported to the AOC began with a DTTS-triggered panic button alert or shipment monitoring and DTTS exception reports. The steps followed as a result of these notifications are as follows:

- 1) DTTS
 - a) receives the panic button signal (or senses an incident has occurred by monitoring movement status);
 - b) verifies the emergency and compiles actionable data on the shipment, such as current location, load contents, hazard class and highest security risk category (SRC);
 - c) as necessary, contacts the state police to inform them of the incident and request assistance.
 - d) contacts the motor carrier to determine if they are aware of the emergency and, if so, exchange details and advise them the state police have been contacted;
 - e) faxes the initial report to the AOC, USTRANSCOM, SDDC, and the Army Criminal Investigation Command to report the incident and provide the actionable data; and
 - f) contacts the AOC, service headquarters, shipping activity, SDDC Operations, and USTRANSCOM to provide the precise location and details of the incident. Updates are provided at approximately 3-hour intervals until the incident has been resolved.
- 2) The AOC
 - a) notifies SDDC, and
 - b) notifies FORSCOM if the AOC determines that EOD assistance is required.
- 3) FORSCOM
 - a) notifies the 52nd Ordnance Group to request and authorize EOD assistance, and
 - b) contacts the nearest military installation to request on-scene support and assistance.

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- 4) The 52nd Ordnance Group determines the nearest EOD team and dispatches them to the scene, with an established goal to arrive within 4 hours of the initial FORSCOM request.
 - 5) The designated EOD team organizes and responds to the site of the emergency within 4 hours of notification. The team assumes command and control of the site for the purpose of rendering the materiel safe for cleanup or onward movement.
 - 6) SDDC
 - a) coordinates replacement equipment and operators with the munitions carrier and arranges safe haven, as required;
 - b) issues an incident report and e-mail message to “distribution” (This e-mail facilitates information sharing; it is not intended to initiate emergency response or enhance on-scene incident resolution); and
 - c) follows up with after-action reports and takes corrective actions with the carrier, if needed.
 - 7) Local authorities, to ensure public safety or when requested by DoD authorities, assist in establishing a safe distance perimeter, evacuating the area, and performing other functions that facilitate the resolution of the emergency.
 - 8) Representatives from the nearest DoD activity report to the incident scene, as requested by FORSCOM, with an established goal to arrive within 2 hours of the initial FORSCOM request. They provide military liaison, public affairs, logistics, legal, security, environmental or other support functions as required at the site of the emergency.

Non-DTTS-Triggered Notification

The remaining 10 percent of FY2004 transportation accidents or incidents involving AA&E were reported directly to the AOC by some means other than DTTS. This process often begins when the AOC receives a phone call from the police, other state or local safety official, or a nearby DoD activity. The DOT *Emergency Response Guide* lists the AOC emergency phone number for police, fire, or other state and local safety authorities to report incidents involving military munitions and explosives. The AOC may receive a phone call to report an incident involving a rail shipment or a motor movement of AA&E (in which the driver is unable to activate the panic-button alert, for example) within minutes to several hours of the accident.

The steps followed as a result of this non-DTTS supported notification process are as follows:

- 1) The AOC
 - a) records the details of the incident (location, injuries, fire, etc.) and attempts to determine the shipment contents, and other relevant information, if possible, relying on local authorities or whomever called (If accessible, shipping papers or the drivers are often the primary source of this information. Also, placards mounted on the vehicle provide local responders with the hazard class of the shipment.);⁸
 - b) determines a proper response using available standard operating procedures (SOPs) and other reference material;⁹
 - c) notifies SDDC to assist in shipment identification and emergency response support; and
 - d) notifies FORSCOM if the AOC determines that EOD assistance is required.
- 2) FORSCOM notifies the 52nd Ordnance Group to request and authorize EOD assistance. FORSCOM also contacts the nearest military installation to request on-scene support and assistance, with an established goal to arrive within 2 hours of the initial FORSCOM request.
- 3) The 52nd Ordnance Group determines the nearest EOD team and dispatches them to the scene, with an established goal to arrive within 4 hours of the initial FORSCOM request.
- 4) The designated EOD team organizes and responds to the site of the emergency within 4 hours of notification. The team assumes command and control of the site for the purpose of rendering the materiel safe for cleanup or onward movement.

⁸ The AOC typically would capture this kind of information from a caller and enter it into its logbook to pass on to other responders; however, there are no pre-established checklists or list of questions to assist AOC personnel in capturing vital information upon notification of an incident.

⁹ Neither AOC's mission nor 49 CFR 172.602 specifically require the AOC to directly provide incident mitigation guidance to first responders. Rather, the AOC requires to serve as the initial entry into DoD's emergency response process and to have immediate access to the DoD "action" entity that possesses comprehensive emergency response and incident mitigation information.

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- 5) SDDC
 - a) coordinates replacement equipment and operators with the munitions carrier, and arranges safe haven, as required;
 - b) issues an incident report and e-mail message to “distribution” (This e-mail facilitates information sharing; it is not intended to initiate emergency response or enhance on-scene incident resolution.); and
 - c) follows up with after-action reports and takes corrective actions with the carrier, if needed.
 - 6) Local authorities assist to protect public safety, or, as requested by the AOC or the EOD team, establish a safe-distance perimeter, evacuate the area, and perform other functions to facilitate resolution of the emergency.
 - 7) The nearest DoD activity representatives report to the incident scene, as requested by FORSCOM, with an established goal to arrive within 2 hours of the initial FORSCOM request. They provide military liaison, public affairs, logistics, legal, security and environmental, or other support required at the site of the emergency.

METRICS

In conjunction with documenting the processes in place today, we investigated what metrics were defined to gauge emergency response effectiveness and what other metrics and historical performance data are being collected.

Army Regulation 385.14, *Transportation Accident Prevention and Emergency Response Involving Conventional Munitions and Explosives*, establishes response time goals to report to an accident scene

- ◆ Within 2 hours of notification of the incident for the nearest DoD activity
- ◆ Within 4 hours of notification of the incident by FORSCOM for the designated EOD team.

Beyond these goals and several internal DTTS metrics, there are no other documented target metrics regarding emergency response performance by any other entity involved in the emergency notification or response process.¹⁰ DTTS documents the time required to compile actionable information, and notify local authorities and the AOC. Each emergency situation is unique and cannot be perceived as a routine event by the DTTS staff. The DTTS program manager uses

¹⁰ LMI did not review AOC, EOD, or local activity logbooks to capture the events entered and determine actual emergency response times. Logbook entries for multiple incidents would need to be reviewed in order to gain a high degree of confidence for computing current AOC, EOD, or local activity emergency response metrics.

the documented time for each emergency alert (whether passed to the AOC or not) to identify potential internal process improvements and ensure unique events are captured in revised DTTS training materials.

HISTORICAL PERFORMANCE

DTTS keeps historical records of response times to notify local authorities and AOC of DTTS-triggered incidents. Table 2-1 highlights DTTS performance in FY2003 and FY2004.

Table 2-1. Response Time Performance

	FY2003	FY2004
Shipments monitored	57,694	56,933
Emergencies (accidents/incidents) ^a	92	109
Time to gather data and notify local authorities	6 minutes	6 minutes
Time to relay data to AOC	15 minutes	13 minutes

^aThe SDDC Freight Traffic Rules Publication No. 1C, 4 January 2004, defines an emergency as any "situation" associated with in-transit DoD AA&E or other sensitive materiel (OSM) that endangers the materiel itself, the general public, or the transporting carrier's personnel, equipment, or facilities, or threatens national security due to loss of ordnance-related high technology. The broad term "incident" includes accidents, fire, hijacking, theft, civil disturbance, equipment failure, labor strikes, natural disasters, and threatened or real attack.

These historical records indicate DTTS is fairly effective in providing actionable data to local authorities and to the AOC once it is alerted to an incident. The AOC does not track historical performance with regards to emergency response. Furthermore, we could find no available historical performance data that tracked the actual arrival time performance of the nearest DoD activity or the assigned EOD team to an incident versus the established policy of 2 hours and 4 hours, respectively.

Chapter 3

Findings

In this chapter, we present our findings concerning policies, procedures, roles and responsibilities, and metrics.

ARMY AND AOC CENTRAL COORDINATION ROLES

The Secretary of the Army is the DoD executive agent for emergency response to transportation mishaps involving ammunition and explosives. This includes responsibility for developing command and control procedures and maintaining the DoD coordination center for the initial notification of accidents involving ammunition and explosives.¹ The mission is executed through the AOC. The AOC responds to numerous issues and incidents, only one of its responsibilities is coordinating emergency response to transportation incidents involving AA&E.

DoD once looked to each AA&E shipping activity to be the principal contact and emergency mitigation focal point for the shipments originating from the individual activities. This ineffective approach was replaced with the current single, central AOC focal point. While not a perfect notification process, the AOC provides many advantages over the previous approach. Among these is the fact that the AOC emergency hotline number is published in the DOT *Emergency Response Guidebook*, which is widely distributed to local emergency response personnel. In addition, the AOC is a widely recognized authority in DoD and the public sector, and can direct other DoD activities (such as FORSCOM) and the nearest military installation to provide incident mitigation support.

For these reasons, we do not recommend changing the AOC's current role as DoD's coordination center for the initial notification of transportation incidents involving AA&E; however, we do recommend enhancing the Army's overall program oversight and the need for DoD to revise policies, regulations, roles and responsibilities, and procedures required to improve the effectiveness of the AA&E emergency response notification process.

Our findings are based upon stakeholder interviews and our first-hand observations. We present our recommendations, which are based upon these findings, in Chapter 4.

¹ DoD Directive 6055.9, *DoD Explosives Safety Board and DoD Component Explosives Safety Responsibilities*, 29 July 1996.

RAIL ENHANCEMENTS

Enhancements in rail emergency response procedures, data collection, and system integration are needed. One of the initial actions that prompted this report occurred in April 2004, when the AOC received an incident report from a Federal Railway Administration agent. The AOC watch officer who took the call was unable to assist the FRA agent, because the AOC does not have mode-specific procedures or contacts regarding rail-related emergencies. Following the incident, SDDC personnel attempted to correct this oversight and conducted several test calls to the AOC to ensure personnel were instructed in the correct response procedures. These follow-on tests failed.

Beyond the need for improved AOC rail operating procedures and points of contact, DoD's current approach to resolving rail incidents is too narrow. An effective rail tracking and emergency response capability consists of

- ◆ a means to electronically capture initial shipment identification and content detail, and
- ◆ an in-transit visibility capability, such as the satellite monitoring technology currently employed by commercial motor carriers and DTTS.

Although DoD's efforts to track AA&E rail shipments have been less successful than its experience with the motor carriers, the basic components are available and should be integrated properly. For example, SDDC captures initial rail shipment identification and content detail electronically in the Global Freight Management (GFM) system. Although there is no near-real-time positioning of individual railcars, SDDC does rely on IntelliTrans (a third party logistics software and information provider) to report railcar status using passive RFID tags attached to the individual railcars and readers strategically placed along the nation's major rail lines. Currently, this available rail data (provided via GFM or IntelliTrans) is not shared with DTTS—nor does SDDC incorporate this capability in internal emergency response procedures.

Our recommendations in regard to improved procedures, data sharing, and system integration are presented in Chapter 4.

AOC CAPABILITIES AND TRAINING

As discussed above, the AOC responds to numerous issues and incidents; coordinating an emergency response to transportation incidents involving AA&E is only one of its responsibilities. Because 90 percent of incidents are reported to the AOC via DTTS, the challenge is the remaining 10 percent of incidents reported directly to the AOC.

The AOC provides 24-hour coverage, 7 days a week, through 2-person watches (one non-commissioned officer and one officer). AOC watch personnel currently are not trained to ask callers for crucial information about the incident (such as highway route number, mile marker, direction, injuries, presence of fire, commodity identification, and police or fire response on-scene). Current emergency response procedures offer no guidance or checklists to help AOC personnel acquire such vital information, nor do current AOC procedures address mode-specific (motor, rail, towboat/barge, or air) incident data collection questions or specific actions to be followed by AOC personnel to begin the mitigation process. In addition, AOC personnel do not receive specific and recurring training in the safety and security characteristics of DoD AA&E, including hazard class, security risk category, evacuation distances, and fire fighting guides.

In Chapter 4, we present our detailed recommendations to enhance AOC capabilities and training.

AOC AUTOMATED TOOLS

While the tracking of motor carrier shipments involves high-end technology, the emergency response process triggered by DTTS or other notification methods remains primarily a manual process with little supporting technology to facilitate information gathering and collaboration among all the key organizations.

- ◆ Communication between the AOC, DTTS, EOD, and other emergency responders is a lengthy, manual process that involves phone calls, faxes, and email dissemination.
- ◆ Other than information resident in DTTS, there is no single automated source for all AA&E shipment information that is readily accessible by AOC or other responders.
- ◆ The AOC has no intuitive automated response tool (like those used by a 911 emergency operator) to help duty officers quickly identify and walk through the appropriate responses to each emergency. Once notified of an incident, AOC personnel access SOPs via their desktop computers and read the lengthy text to discern the appropriate actions.
- ◆ There is no database within the AOC that provides a ready source of supporting information typically found in emergency response guidebooks or a Material Safety Data Sheet (MSDS)²—including commodity characteristics, hazard, and resolution information—for AA&E or other hazardous material (HAZMAT).

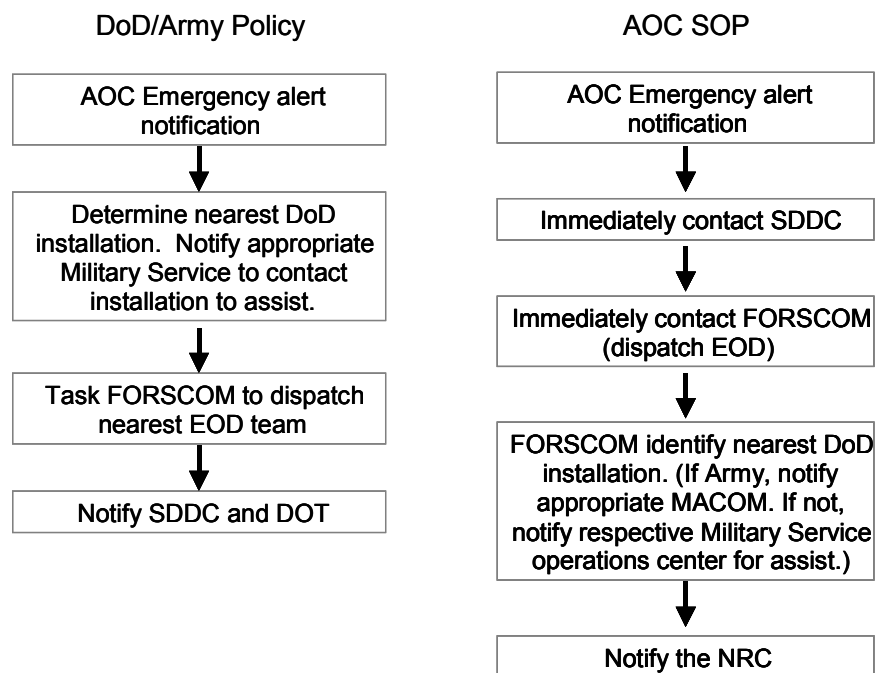
² The MSDS includes the identity of the HAZMAT; relevant physical and health hazards, manufacture's name, address and phone number; and fire-fighting and clean-up instructions.

OPERATING PROCEDURES

Inconsistent Standard Operating Procedures

In addition to having little in the way of automation, the current process does not reflect the actual DoD or Army policies for emergency response. Army regulations direct the AOC to contact the nearest DoD activity first, and then to contact FORSCOM; the AOC standard operating procedures direct personnel to contact SDDC first, then FORSCOM, which contacts the nearest DoD activity and EOD team. Inconsistent SOPs can result in conflicting guidance and can compromise the emergency notification and response process. Figure 3-1 highlights the differences in AOC processes described in Chapters 1–4 of AR385-14, *Transportation Accident Prevention and Emergency Response Involving Conventional Munitions*, and the process stated in AOC’s *Standard Operating Procedures*.

Figure 3-1. AOC Process



Note: MACOM = major Army command; NRC = National Response Center. The NRC is a DOT entity staffed by USCG personnel. It is the sole federal point of contact for reporting oil, chemical, radiological, biological and etiological discharges into the environment. Incidents reported to the NRC that involve transportation emergencies with DoD munitions are recorded and referred for action to the AOC.

Army regulations also direct SDDC to establish and maintain a program to evaluate the transportation safety program of commercial carriers. This policy identifies *post-accident* investigation procedures SDDC should follow to fulfill its carrier performance management role. Current AOC SOPs, however, place SDDC squarely in the notification chain *during* the incident—implying an “emergency response” role.

Although SDDC issues an incident notification report and email message to its “distribution” list, this email is not intended to enhance incident resolution. As a result, the AOC may be wasting valuable time and diverting its attention from immediately contacting the nearest DoD activity and EOD team for emergency assistance. Likewise, although SDDC’s alert email may facilitate information sharing, it also may result in multiple organizations (SDDC, AOC, and DTTS) disseminating the same (or potentially inconsistent) information. This can cause confusion as to what organization is coordinating the response.³

Current AOC SOPs do not require the DTTS be contacted to find out if a shipment is monitored by DTTS. Even if the emergency response is not triggered by a DTTS panic button, DTTS may have detailed cargo and location data that could be of significant and timely benefit to the AOC.

Established emergency response procedures for different organizations are sometimes in conflict. For example, AR385.14 specifically excludes accidents or incidents involving chemical agents; however, the AOC SOP contains incident notification procedures for several specific chemicals (i.e., nitrogen tetroxide [N2O4] and liquid fluorine [LF2]), and DTTS only has emergency response procedures for motor shipments of N2O4.

Lengthy Notification Process

Current procedures contribute to a lengthy notification process to engage an EOD team and the nearest DoD activity support. There are multiple “middle men” in the communications chain to request, authorize, and dispatch the EOD or nearest DoD activity personnel. Although this notification process may follow DoD protocol, it also can delay notification and timely response to a serious incident.

The current notification process reflecting the multiple organizations engaged in dispatching EOD team and nearest DoD activity support to the scene of an incident is illustrated in Appendix A.

PROCEDURAL VOIDS

Existing procedures do not address transportation mode or commodity specifics. For example, the AOC has a single generic emergency response procedure that covers all incidents regardless of whether they involve highway, rail, or air shipments. AOC does not have procedures for incidents involving AA&E movements via CONUS waterways.⁴ Although the U.S. Coast Guard (USCG) has jurisdiction for mitigating incidents over the nations’ waterways, the AOC should be

³ A recent DoD decision to transfer the DTTS mission from the Navy to SDDC should resolve this duplication of effort between SDDC and DTTS.

⁴ According to Army regulations, AOC will be the central focal point for incidents of AA&E movements for “all” modes of transportation, whereas AOC internal operating procedures exclude any reference to AA&E movements via CONUS inland or coastal waterways.

knowledgeable of procedures for engaging and coordinating military incidents with the USCG.

Similarly, current AOC procedures do not differentiate between the hazardous commodity or security risk category of the shipment. Each accident or incident is unique, as are the procedures and points of contact for the various modes of transport and the specific commodity involved. The various emergency notification processes diagrammed in Appendix A illustrate these modal differences.

Current AOC policies and procedures do not cover non-AA&E HAZMAT, even though the AOC might get the initial phone call for incidents involving these commodities. The Defense Logistics Agency's (DLA's) Defense Supply Center Richmond (DSCR) is the DoD's designated point of contact to facilitate emergency response for other HAZMAT incidents.⁵ Although DSCR is not involved directly with DoD AA&E, it is responsible for all emergency response oversight for other DoD HAZMAT cargo.⁶

DSCR has no procedure in place to notify DLA or other DoD components when alerted to a transportation accident involving DoD HAZMAT. Only a monthly report is compiled by DSCR and forwarded to Headquarters, DLA. Likewise, AOC SOPs do not include the DSCR hotline in the event of a non-AA&E hazardous incident. The AOC does have the phone number for CHEMTREC⁷ in case of chemical incidents.

Although this assessment focused on improving the emergency response notification process for AA&E, synergies and efficiencies may be gained by combining the two separate AA&E and other HAZMAT emergency response processes. Therefore, DoD should consider and assess the viability of combining AA&E and other designated HAZMAT emergency response processes within a single organization rather than continue to maintain separate missions, processes, contacts and capabilities.

INCONSISTENT AND DATED POLICIES AND REGULATIONS

Over time, DoD has written and published multiple directives, regulations, memoranda of understanding (MOUs) and SOPs that define varying roles for the AOC, DTTS, SDDC, and DLA.

⁵ In accordance with DoD 4500.9-R, *Defense Transportation Regulation*, Part II, Chapter 204.

⁶ We interviewed the DSCR fire chief to determine what notification and mitigation procedures were in place for DoD HAZMAT. The fire department at the DSCR receives phone calls from across the country about incidents involving military HAZMAT and only provides the caller with product MSDS information available on the commodity.

⁷ CHEMTREC is an emergency response information service provided by the nation's chemical manufacturers to assist responders or others in dealing with chemical spills or other chemical- and HAZMAT-related incidents.

As illustrated below, various policies designate different organizations as the “co-ordinator” or “focal point” for DoD’s emergency response process:⁸

- ◆ DoD Directive 6055.9 states that the Secretary of the Army maintains “the DoD coordination center” using DTTS as the “DoD focal point” for initial notification of accidents involving AA&E.
- ◆ AR385.14 states the AOC acts as “the DoD coordination center” for emergency response to transportation accidents involving munitions and explosives within CONUS.
- ◆ DoD5100.76M states USTRANSCOM and its components serve as the “DoD focal point” for the security of AA&E in transit by commercial carriers and for monitoring the performance of such carriers in providing requisite security services to AA&E shipments.
- ◆ According to both AR190-11, *Physical Security of Arms, Ammunition and Explosives*, and AR385.14, the Commander, SDDC, serves as the “DoD focal point” for security and performance monitoring and oversight relative to the security of AA&E in transit in the custody of commercial carriers.
- ◆ The MOU for DTTS states the role of DTTS “is to ensure the safe and secure movement of AA&E in the public domain and to provide in-transit visibility for AA&E and other sensitive materials.”

The multitude of policies, regulations, and other implementing documentation contribute to the confusion over mission responsibilities and lines of authority and can potentially result in redundant or conflicting efforts by multiple organizations.

In addition, many directives, regulations, and other implementing documentation that govern emergency response procedures have not been updated in many years. For example, DoD Directive 6055.9, *DoD Explosives Safety Board and DoD Component Explosives Safety Responsibilities*, is 8 years old, and AR385.14, *Transportation Accident Prevention and Emergency Response Involving Conventional Munitions and Explosives*, is 13 years old. The world has changed in the intervening years. Because threats are different and new organizations, roles, and missions have evolved, many of these documents do not reflect the current operating or security environment.⁹

⁸ We provide additional excerpts regarding roles and responsibilities from Army and DoD policies in Appendix B.

⁹ ADUSD(TP) has recognized this shortcoming and has included a complete policy and organizational review as one of the 23 actions identified in the *DoD Strategic Plan for the Distribution of AA&E*, May 2004. Also, the Secretary of Defense has recently directed all policy directives be updated.

LIMITED EMERGENCY RESPONSE METRICS

There are no metrics specified or collected for most segments of the current DoD emergency response process beyond what is routinely used by DTTS to evaluate its internal effectiveness. Although DoD regulations identify goals for EOD teams (4 hours) and the nearest DoD activity (2 hours) to arrive at an incident scene after notification, there are no published performance measures that indicate whether DoD is achieving these goals or whether they are realistic. Without accurate metrics for each segment of the emergency response notification process, there is no viable way to determine overall process effectiveness or where training and specific assignments need strengthening.

LIMITED TESTING

Beyond SDDC testing the AOC notification process following a recent rail incident, we identified only one other instance when DoD routinely tests the current AA&E emergency response notification process, which involves only a limited motor segment of the end-to-end process. This entails periodic testing sponsored by SDDC, and involves SDDC's Transportation Safety and Security (TRANSS) Team, commercial carrier drivers, DTTS and the state police nearest the location of the test. As part of this limited testing, SDDC asks the carrier driver to activate the panic button to test DTTS as well as the response of the TRANSS Team and state police to an emergency. The test does not engage the AOC, EOD teams, the nearest DoD activity, or any other potential process participants; nor are similar tests conducted for other modes of transportation.

End-to-end testing of the DoD emergency response process has been discussed among process participants; however, there have been no attempts to carry out these tests. Routine testing of all segments of the DoD process, including other modes of transportation and performance metrics, will identify specific weaknesses in procedures and training that must be resolved.

Chapter 4

Recommendations

We propose ADUSD(TP) and the Army consider the recommendations presented in this chapter. We developed these recommendations based on the findings identified in Chapter 3.

AOC CENTRAL COORDINATION

In Chapter 3 we discussed the Army's designation as the DoD executive agent for emergency response to transportation mishaps involving ammunition and explosives and AOC's role in executing this mission. We believe this is the correct assignment; and with program enhancements, process changes, and added Army oversight, AOC remains the best entity to serve as DoD's central focal point for incidents involving the movement of AA&E.

IMPROVE RAIL TRACKING AND RESPONSE PROCEDURES

Recent rail incidents indicate current AOC and SDDC procedures are ineffective and DoD is not fully capitalizing on available automated rail shipment data and current car location reporting (passing report) capabilities. To correct these deficiencies SDDC, in coordination with the railroad industry, should use DTTS and real-time tracking technologies similar to those used by the motor carrier industry. Because this capability is not immediately available, SDDC should pursue the following interim solutions:

- ◆ Centralize initial rail emergency response notification within DTTS.¹
- ◆ Develop rail-specific emergency procedures and metrics within DTTS similar to those used for motor carrier and barge incidents.
- ◆ Initiate database changes within DTTS to incorporate rail AA&E shipment identification and car-level content detail.
- ◆ Incorporate rail data in routine data transfers from GFM to DTTS.

¹ DoD recently decided to transfer the DTTS mission to SDDC. Under this mission assignment, SDDC should leverage its existing contract with IntelliTrans and relationships with the nation's railroads to capture railcar status within DTTS.

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- ◆ Establish an interface between DTTS and IntelliTrans to capture car location data within DTTS or restore the DTTS direct link to the Association of American Railroads (AAR) Rail-Link capability to provide round-the-clock railcar location reporting.
 - ◆ Expand the current DTTS web capability to permit access by DoD shippers and receivers to query the status of in-transit rail shipments.
 - ◆ In coordination with the AOC, develop revised AOC rail incident operating procedures to reflect the changes and new capabilities listed above.

EXPAND AOC CAPABILITIES AND TRAINING

The ongoing challenge to AOC personnel involve the 10 percent of in-transit AA&E incidents that are reported directly to the AOC. Without the benefit of DTTS-provided information, the AOC does not have all the necessary support tools or training needed to adequately respond to the wide spectrum of potential emergencies that may be directly reported to the AOC for mitigation support. Although expanding DTTS to capture rail movement information will improve this situation, the Army, with support from SDDC, should implement the following recommendations to assist AOC personnel in obtaining crucial incident information and speed the mitigation process.

- ◆ Develop a series of mode-specific (motor, rail, air, and towboat or barge) electronic checklists that help AOC watch personnel obtain crucial incident details.
- ◆ Once crucial data are obtained, expand AOC electronic emergency response SOPs to include mode-specific contacts and actions to be followed when initiating the mitigation process.
- ◆ Develop training for newly assigned AOC personnel—with regular refresher training thereafter—on AA&E safety and security incident mitigation procedures, including a basic understanding of munitions and explosives characteristics (such as explosive hazard classes, security risk categories, evacuation distances, and fire-fighting guidance).²

² The intent is not to train AOC personnel to directly mitigate incidents involving AA&E, but to be sufficiently familiar with the hazard characteristics of AA&E to be able to effectively collect pertinent information from the initial caller and communicate with emergency response personnel.

EMPLOY AUTOMATED TOOLS

In order to facilitate quicker, more robust information transfer, the Army should acquire and implement within the AOC an intuitive emergency response and mitigation support system.³ This system should

- ◆ contain the most recent versions of all emergency response guidance that can be quickly accessed and navigated by AOC personnel;
- ◆ use an interactive rules-based user interface to help AOC personnel (and others, as needed) enter key incident information and obtain mode-specific and cargo-specific mitigation guidance;
- ◆ provide remote access for all key organizations involved in emergency response to view and add pertinent incident response and resolution information;
- ◆ provide an automated logbook entry and after-action report generation capability; and
- ◆ collect metrics to assess processes for effectiveness and improvement when key emergency response actions are completed.

Although this capability will give AOC personnel the capability to quickly obtain essential information to readily assess the severity of an incident and intelligently communicate with callers or emergency responders, it is not the intent of this recommendation that the AOC directly mitigate AA&E emergencies. This responsibility should remain with qualified emergency response personnel.

STREAMLINE AND REVISE OPERATING PROCEDURES

The findings identified in Chapter 3 highlight the disparity between AOC SOPs and DoD and Army policies and regulations regarding the emergency response notification process. Current emergency response procedures also follow a lengthy notification chain before any EOD teams or DoD activities located near the incident scene are notified of the emergency. While this procedure follows protocol, it delays preparation and mobilization of the EOD team or DoD activity to the emergency site.

³ Investment in automated capabilities to enhance AOC response to AA&E incidents may not be justifiable based purely on a cost-benefit analysis given the relatively small number of AA&E incidents processed within the AOC. But the potential ramifications of a single catastrophic incident should outweigh cost considerations. The Army may be able to achieve cost efficiencies and operational effectiveness by enhancing its entire AOC operations rather than updating only the processes that deal with AA&E incidents. Various systems, software, web-based applications, and technologies support emergency response requirements. AOC should evaluate which tools best meet its unique requirements, and adopt tools that can satisfy other AOC mission requirements beyond coordinating responses to transportation-related AA&E incidents.

To resolve these deficiencies and streamline the current emergency notification process, the Army, in coordination with SDDC and other stakeholders, should revise emergency response notification operating procedures as follows:

- ◆ Revise Army regulations and AOC SOPs to allow the AOC or DTTS personnel to directly notify the nearest EOD team and DoD installation to reduce the time required to provide on-scene support to an AA&E incident. This would allow the EOD team as much advance notice as possible to prepare for mobilization and coordinate with local on-scene responders early in the emergency to help assess the situation on the ground, and provide risk and explosive characteristics of the materiel involved.

The actual approval and mobilization order could still be issued by higher headquarters, but initiated by a verbal request from the nearest EOD team. This change gives the EOD team more time to assess the incident, get organized, and depart once the verbal order is confirmed.

- ◆ Designate the DTTS program office⁴ as the initial notification point for AOC personnel to contact upon notification of “any” AA&E in-transit incident—regardless of mode of transportation. The DTTS program office and AOC personnel should also have ready access to EOD expertise in order to seek guidance and assess the immediate nature and extent of the emergency. This can be achieved by having an EOD-qualified representative on each DTTS shift, or an EOD point of contact that DTTS or AOC personnel can immediately contact, no matter the time or day.
- ◆ Designate the DTTS program office as the single DoD entity for disseminating the initial incident alert notice and follow-on status updates to DoD and other interested parties.⁵

FIX PROCEDURAL VOIDS

AA&E shipment monitoring and emergency response procedures must be revised to recognize the different procedures required for different modes of transport and for unique commodity hazards and security risk categories. We recommend the following to fix these procedural voids:

- ◆ SDDC should expedite the development of a DTTS capability to monitor rail movements so all AA&E shipments, regardless of mode, are tracked and managed by DTTS.
- ◆ SDDC, in coordination with the AOC, should develop mode-specific emergency response SOPs that also recognize commodity hazard and

⁴ DTTS will transfer to SDDC in FY2005, which will further streamline the notification process and avoid confusion by having a single SDDC/DTTS focal point vice both organizations engaging in the notification process.

⁵ Ibid.

security nuances, including procedures to follow when AOC is notified of an incident involving barge or towboat movement of AA&E. These SOPs should also incorporate the proposed revised procedures and include detailed actions and contact information.

- ◆ DoD should assess the non-AA&E DoD HAZMAT emergency response notification process. Although the Defense Transportation Regulation designates DSCR as the DoD focal point for emergencies involving in-transit non-AA&E hazardous material, we found no DoD policy, directive, or charter that assigns non-AA&E HAZMAT emergency response responsibility to DLA or DSCR. The assessment should consider leveraging AA&E processes and capabilities and the recommendations in this report for application to the non-AA&E HAZMAT emergency response notification process. The assessment should also explore the feasibility of combining the emergency response organizations, missions, and procedures for AA&E with those for other (or selected) hazardous material. DSCR relies on a local automated hazardous material information system to provide MSDS information to local response authorities. The potential consolidation of emergency response missions and procedures would provide a single DoD focal point, further streamlining the emergency response process and assisting shippers, commercial drivers, and local emergency responders by eliminating separate (AA&E versus non-AA&E HAZMAT) phone numbers placed on bills of lading and listed in the DTR and DOT *Emergency Response Guidebook*.

When pursuing this consideration, care must be taken not to dilute or diminish the effectiveness of the AA&E emergency response mission. Accordingly, initial consideration should be given to differentiate high-visibility HAZMAT that is unique to DoD (nuclear waste, exotic fuels, toxic inhalation hazards, etc.) from commercial HAZMAT that is routinely distributed nationwide.

REVISE AND UPDATE POLICIES AND REGULATIONS

Following the transfer of DTTS to SDDC, OSD should direct a review, update, and ensure consistency across the following key emergency response policies, regulations, and SOPs:⁶

- ◆ DoD 5100.76M, *Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives*
- ◆ DoD Directive 6055.9, *DoD Explosives Safety Board and DoD Component Explosives Safety Responsibilities*

⁶ The DoD *Strategic Plan for the Distribution of AA&E* recognizes the need to review those organizations and policies that affect the safe, secure, effective, and efficient distribution of AA&E. Policies that affect the AA&E emergency response process could be part of this review.

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- ◆ DoD Regulation 4500.9-R, *Defense Transportation Regulation*, Chapters 204 and 205
 - ◆ AR 190.11, *Physical Security of Arms, Ammunition, and Explosives*
 - ◆ AR 385.14, *Transportation Accident Prevention and Emergency Response Involving Conventional Munitions and Explosives*
 - ◆ *Army Operations Center Standard Operating Procedures*
 - ◆ *DTTS Emergency Response Standard Operating Procedures*
 - ◆ *SDDC Emergency Response Standard Operating Procedures.*

The policy review should incorporate changes that reflect the current operating environment and organizations involved in the monitoring of AA&E shipments, as well as the oversight and execution of the AA&E emergency response process. Common terminology should be defined and employed within all of these documents to eliminate any confusion and avoid multiple or redundant “focal points” and “coordinators.” Relevant excerpts from these policies, regulations, and procedures are listed in Appendix B.

DEVELOP EMERGENCY RESPONSE METRICS

In order to truly assess the effectiveness of DoD’s end-to-end emergency response process and identify areas for improvement, the AA&E community needs to define key emergency response metrics, including the following:

- ◆ Time of incident and initial DoD notification (process starting point)
- ◆ Time to obtain crucial data (location, shipment content, hazard class, etc.)
- ◆ Time to contact participants in the emergency response process
- ◆ Time to dispatch and arrival by EOD team and nearest DoD activity personnel on scene
- ◆ Number of resolved incidents and any problems that arose
- ◆ Incidents of missing information or process delays.

The Army, with support from SDDC, should define the final metrics and incorporate them in the updated policies and standard operating procedures. The SDDC, in support of the Army, should collect and review the metrics on a quarterly basis, noting any gaps in data collection or trends in performance, and comparing performance against agreed-upon targets. When actual performance exceeds agreed-upon targets, the affected component must determine if additional training is

needed, modification of the procedure is needed, or unique circumstances caused the target to be exceeded.

TEST THE END-TO-END PROCESS

The findings in Chapter 3 acknowledge that segments of the emergency response process are routinely tested using SDDC-sponsored TRANSS teams. These test only a segment of the process—from the time the driver activates the panic button until the state police are notified. They do not test other elements of the process (for example, AOC or EOD responsiveness) or other transportation modes or scenarios.

The Army, with support from SDDC, should develop and regularly exercise a test plan that addresses all elements and participants in the emergency response process, including other relevant organizations that are now charged with homeland security and homeland defense. Testing should be conducted on a regular and ad hoc basis to identify specific weaknesses in procedures or training that require resolution.

Appendix A

Flowcharts of Emergency Response Processes

Motor, rail, and barge and towboat emergency response processes are depicted in the following flowcharts:

- ◆ Figure A-1, Motor Emergency Response Process—DTTS Supported
- ◆ Figure A-2, Motor Emergency Response Process—Non-DTTS Supported
- ◆ Figure A-3, Rail Emergency Response Process—Non-DTTS Supported
- ◆ Figure A-4, Barge and Towboat Emergency Response Process—DTTS Supported.

Appendix B

Roles and Responsibilities

During our analysis of the emergency response processes, we reviewed various documents, which are listed in Appendix D. In this appendix we highlight some of the major documents and provide excerpts that provide guidance concerning roles and responsibilities in the emergency response process.

AR190.11

Below is an excerpt from Army Regulation 190.11 *Physical Security of Arms, Ammunition and Explosives*, 12 February 1998, Chapter 7 Transportation, paragraph 7.2, “Responsibilities Relating to Transportation”:

- a. Within their respective areas of responsibilities, overseas theater commanders, and the Commander, Military Traffic Management Command (MTMC)¹, are responsible for:
 - (1) Ensuring that the transportation protective measures used for AA&E items are established in applicable tariffs, government tenders, agreements or contracts.
 - (2) Negotiating with commercial carriers for establishment of transportation protective measures to meet shipper requirements.
 - (3) Determining the adequacy of the services provided by commercial carriers for movement of AA&E items.
 - (4) Routing when requested by shipper.
- b. In addition, the Commander, MTMC, will:
 - (1) Develop, administer, and maintain joint transportation security procedures for the commercial movement of AA&E.
 - (2) Serve as the DoD focal point for security and performance monitoring and oversight relative to the security of AA&E in transit in the custody of commercial carriers.
- c. The Military Airlift Command (MAC)² is responsible for ensuring the adequacy of the services provided for movement of AA&E items by military aircraft procured by MAC.

¹ MTMC was renamed the Military Surface Deployment and Distribution Command in 2004.

² MAC has subsequently been renamed the Air Mobility Command (AMC).

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- d. The Military Sealift Command (MSC) is responsible for insuring the adequacy of the services provided by military and commercial ocean carriage for movement of AA&E items.
 - e. This chapter does not relieve accountable officers of their responsibility to safeguard and account for property.

AR 385.14

Below is an excerpt from Army Regulation 385.14, *Transportation Accident Prevention and Emergency Response Involving Conventional Munitions and Explosives*, 8 April 1991, Chapter 1-4, Responsibilities:

- a. The Secretary of the Army serves as the DoD Executive Agent for emergency response to transportation accidents involving munitions and explosives.
- b. The Assistant Secretary of the Army for Installations, Logistics and Environment (ASA [I, L&E]) exercises policy and program oversight for the secretary of the Army.
- c. The Deputy Chief of Staff for Operations and Plans (DCSOPS) has overall staff responsibility for emergency response support provided under this regulation.
- d. The Deputy Chief of Staff for Logistics (DCSLOG) is responsible for general staff supervision of:
 - (1) Department of Army transportation services required for movement of conventional ammunition and explosives.
 - (2) The Army EOD program.
 - (3) Procurement instructions, to include a requirement that shippers of munitions or explosives provide 24 hour emergency points of contact, with telephone numbers, for entry on the shipping documents.
- e. The Army Operations Center AOC will serve as the DoD coordination center for emergency response to transportation accidents in CONUS involving munitions and explosives.
 - (1) The AOC will determine the military installation nearest the accident to be tasked to provide immediate and/or support, and will notify the appropriate military department to contact the installation.
 - (2) The AOC will task the Forces Command Operations Center to arrange for EOD service/support from the nearest EOD unit regardless of the service affiliation.

- (3) The AOC will notify Headquarters, MTMC and the DOT of all transportation accidents involving munitions and explosives.
- f. The Commander in Chief (CINC) and commanding generals of major Army commands (MACOMs) are responsible for establishing procedures to ensure that all accidents or incidents covered by this regulation are reported as required in paragraph 2-1.
- g. The CINC, FORSCOM, will arrange for EOD support, from within the Army or other military services, so that it reaches the accident scene within 4 hours of the initial FORSCOM request.
- h. The Commander, MTMC, will:
 - (1) Establish and maintain a program to evaluate the transportation safety program of commercial carriers of DoD munitions or explosives.
 - (a) Ensure that commercial carriers and drivers meet qualifications established by the DOT and MTMC.
 - (b) Review the adequacy of procedures used to prepare routings plans and sample actual plans.
 - (c) Act quickly to ensure the safety of affected DoD munitions and explosives shipments when unsatisfactory evaluation results are identified.
 - (d) Notify the DOT Federal Highway Administration (Office of Motor Carrier Safety) of unsatisfactory evaluation results.
 - (2) Instruct commercial carriers concerning actions to be taken following an accident involving DoD munitions and explosives requiring an emergency response. Disseminate the information to all DoD approved munitions carriers.
 - (3) Instruct commercial carriers to notify the AOC immediately in the event of an accident involving DoD munitions or explosives, and DoD emergency response is required.
 - (4) Develop a Memorandum of Understanding (MOU) between the DoD and the Chemical Transportation Emergency Center (CHEMTREC) and the National Response Center (NRC) for the mutual exchange of information on transportation accidents involving DoD munitions and explosives.
 - (5) Provide input to the DOT Emergency Response Guide.

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- (6) Establish commercial carrier and driver qualifications and supplementary training requirements, in cooperation with the DOT, for the transportation of DoD munitions and explosives. Drivers will carry proof of required training or experience.
 - (7) Coordinate with the Association of State Police, Highway Patrol, Commercial Vehicle Safety Alliance, or other similar organizations, to ensure prevention and emergency response cooperation.
- i. Overseas commanders will ensure that the procedures required by this regulation are implemented, subject to host-nation restrictions.
 - j. Commanders of subordinate installations or activities, will:
 - (1) Ensure the development and coordination of emergency response planning with federal, state, local, and foreign government officials, as appropriate.
 - (2) After being informed of accident/incidents by a carrier or by any other means, including news media reports, make the initial report as required by paragraph 2-1.
 - (3) Assist the carrier as instructed by the MACOM headquarters.
 - (4) Ensure that the AOC and shipper 24 hour contact telephone numbers are placed on DD Form 836 (Emergency Instructions for Motor Vehicle Drivers and Initial Responders) for all off-post shipments of munitions and explosives.
 - k. The transportation officer initiating shipments of explosives or other dangerous articles by commercial carrier is responsible for furnishing the carrier with written instructions on SF 1103 (U.S. Government Bill of Lading), and DD Form 836 in accordance with AR55-355.³ Instructions will include addresses and telephone numbers of the consignor and the AOC, so that the driver or carrier will know who to contact in the event of an accident or incident in which the carrier requires or requests military assistance.
 - l. The EOD team dispatched to the accident or incident scene, is responsible for rendering the explosives cargo safe. Members of the EOD team involved in the operation will not be distracted from their hazardous tasks to provide information or other assistance not related to the mission.

³ AR55-355 has been combined with other service-equivalent regulations into DoD Regulation 4500.9-R, *Defense Transportation Regulation*.

DoD 5100.76M

Below is an excerpt from DoD 5100.76M, *Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives*, 12 August 2000, Chapter C6, Transportation, para. C6.2, “Responsibilities”:

C6.2.1. Within their respective areas of responsibilities, Combatant Commanders and the Commander, USTRANSCOM, are responsible for:

C6.2.1.1. Ensuring that the security requirements of this chapter are included in applicable tariffs, tenders, agreements, or contracts for the transportation of sensitive, conventional AA&E.

C6.2.1.2. Establishing and publishing rules and requirements for in-transit security of DoD shipments within their area of operations in accordance with the requirements of this chapter.

C6.2.1.3. Establishing oversight programs to ensure the adequacy of in-transit security provided DoD shipments by commercial carriers.

C6.2.2. USTRANSCOM and its components (Air Mobility Command (AMC), MTMC, and MSC in addition to the tasks enumerated in section C6.2., above, shall:

C6.2.2.1. In coordination with the OASD (C3I),⁴ develop, administer, and maintain, joint transportation security requirements for the commercial movement of AA&E via all modes.

C6.2.2.2. Serve as the DoD focal point for the security of AA&E in transit by commercial carriers and for monitoring the performance of such carriers in providing requisite security services to AA&E shipments.

C6.2.2.3. Develop, administer, and maintain policy and procedures for the protection of DoD AA&E awaiting transportation in commercial terminals.

⁴ The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) has been redesignated the Assistant Secretary of Defense for Networks and Information Integration (OASD[NII]).

DoD DIRECTIVE 6055.9

Below is an excerpt from DoD Directive 6055.9, *DoD Explosives Safety Board (DDESB) and DoD Component Explosives Safety Responsibilities*, 29 July 1996, Chapter 5, “Responsibilities”:

- 5.5. The Secretary of the Army shall:
 - 5.5.1. Provide administrative support for the DDESB to include budgeting, funding, civilian personnel, security, and any other required administrative services.
 - 5.5.2. Serve as the DoD Executive Agent for emergency response to transportation mishaps involving ammunition and explosives; develop command and control procedures; and maintain the DoD coordination center using the DTTS as the DoD focal point for initial notification of accidents involving ammunition and explosives.
 - 5.5.3. N/A
 - 5.5.4. Establish procedures, personnel qualifications, and training to ensure the safe commercial movement of ammunition and explosives and the prevention of mishaps. Take timely actions following a mishap by a commercial carrier involving the transportation of DoD ammunition and explosives.
- 5.6. The CINC, USTRANSCOM shall:
 - 5.6.1. Designate a knowledgeable official who, in addition to other assigned duties, shall serve as a nonvoting, advisory member when the business before the DDESB concerns USTRANSCOM.
 - 5.6.2. Establish a program to evaluate the safety of commercial carriers of DoD ammunition and explosives, and maintain coordination with the DDESB and the Department of Transportation to ensure its effective implementation.

DTTS MEMORANDUM OF UNDERSTANDING

Below are excerpts regarding roles and responsibilities from the *DTTS Joint Services Memorandum of Understanding*.

1. PURPOSE: To specify responsibilities, requirements, procedures, and interfaces among participating Military Services, DLA, and MTMC (a USTRANSCOM Joint Transportation Component Command), regarding the design, development, and deployment of DTTS.

2. SCOPE: This Memorandum of Understanding (MOU) applies to each Military Service, DLA and MTMC. The Military Services agree to allocate the necessary resources to support sustainment and further development of DTTS (see paragraph 4.h. herein).
4. RESPONSIBILITIES AND INTERFACES:
 - a. General: The primary mission of DTTS is to ensure the safe and secure movement of AA&E in the public domain. DTTS will also support emerging Services' requirements for monitoring the movement of OSM. The program's secondary mission is to provide in-transit visibility (ITV) for AA&E and OSM.
 - b. DTTS Program Management Office (PMO): Joint-focused program office under the management of the Naval Supply Systems Command providing a number of services, including, but not limited to: AA&E/OSM tracking, near real-time intransit safety/security monitoring; emergency response coordination; consignor due-in reports; programmed in-transit exception reporting; system enhancements incorporating new technologies/capabilities; assisted modal/theatre expansion; expansion to monitor OSM at the prerogative of the owning Services, and, other duties and responsibilities as directed by the DTTS Joint-Service Working Group or the Council of Colonels/Captains (COCC).

49 CFR 172.604

Below are excerpts from 49 CFR 172.604, Section G, "Emergency Response Information," which pertains to the establishment, responsibilities, and expectations for emergency points of contact:

Subpart G: Emergency Response Information

Section 172.604 Emergency response telephone number.

1. A person who offers a hazardous material for transportation must provide an emergency response telephone number, including the area code or international access code, for use in the event of an emergency involving the hazardous material. The telephone number must be:
 - a. Monitored at all times the hazardous material is in transportation, including storage incidental to transportation;
 - b. The number of a person who is either knowledgeable of the hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information; and

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- c. Entered on a shipping paper, as follows:
- i) Immediately following the description of the hazardous material required by subpart C of this part; or
 - ii) Entered once on the shipping paper in a clearly visible location. This provision may be used only if the telephone number applies to each hazardous material entered on the shipping paper, and if it is indicated that the telephone number is for emergency response information (for example: ``EMERGENCY CONTACT: * * *').⁵
2. The telephone number required by paragraph (a) of this section must be the number of the person offering the hazardous material for transportation or the number of an agency or organization capable of, and accepting responsibility for, providing the detailed information concerning the hazardous material. A person offering a hazardous material for transportation who lists the telephone number of an agency or organization shall ensure that agency or organization has received current information on the material, as required by paragraph (a)(2) of this section before it is offered for transportation.

⁵ In addition to the shipping paper, the AOC emergency contact number is also listed in the DOT *Emergency Response Guidebook* that is widely distributed to state and local police, fire, and other safety officials.

Appendix C

Organizations Interviewed

Below is a list of organizations that we interviewed during our assessment.

- ◆ Defense Transportation and Tracking System (DTTS)
- ◆ Defense Logistics Agency (DLA) Headquarters
- ◆ DLA, Defense Supply Center Richmond (DSCR)
- ◆ Military Surface Deployment and Distribution Command (SDDC)
- ◆ U.S. Air Force, Headquarters, I&L
- ◆ U.S. Army, G4
- ◆ U.S. Army, Army Operations Center (AOC)
- ◆ U.S. Army, Forces Command (FORSCOM)
- ◆ U.S. Army, 52nd Ordnance Group
- ◆ U.S. Marine Corps, HQ, I&L
- ◆ U.S. Navy, Naval Ordnance Safety and Security Activity (NOSSA)
- ◆ U.S. Navy, Naval Supply Systems Command (NAVSUP), Naval Operational Logistics Support Center (NOLSC)
- ◆ U.S. Transportation Command (USTRANSCOM), J5.

Appendix D

Policies Reviewed

Below is a list of policy and procedure documents that we reviewed during our assessment.

- ◆ DoD 5100.76M, *Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives*
- ◆ DoD Directive 6055.9, *DoD Explosives Safety Board and DoD Component Explosives Safety Responsibilities*
- ◆ DoD Regulation 4500.9-R, *Defense Transportation Regulation*
- ◆ AR190.11, *Physical Security of Arms, Ammunition, and Explosives*
- ◆ AR385.14, *Transportation Accident Prevention and Emergency Response Involving Conventional Munitions and Explosives*
- ◆ Army Operations Center, *Standard Operating Procedures*
- ◆ DTTS *Emergency Response Standard Operating Procedures*
- ◆ DTTS *Joint Services Memorandum of Understanding and Charter*, December 2000
- ◆ SDDC *Emergency Response Standard Operating Procedures*
- ◆ 49 Code of Federal Regulations 172.600, *Emergency Response Information*
- ◆ DLA, *Standard Operating Procedure*, “DoD Emergency Response, Hazardous Transportation HOTLINE for Non-Explosive Shipments”

Appendix E

Abbreviations

AA&E	arms, ammunition, and explosives
AAR	Association of American Railroads
ADUSD(TP)	Assistant Deputy Under Secretary of Defense (Transportation Policy)
AOC	Army Operations Center
AR	Army regulation
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CONUS	continental United States
DDESB	DoD Explosives Safety Board
DLA	Defense Logistics Agency
DOT	U.S. Department of Transportation
DSCR	Defense Supply Center Richmond
DTR	Defense Transportation Regulation
DTTS	Defense Transportation Tracking System
EOD	explosive ordnance disposal
FORSCOM	U.S. Forces Command
FRA	Federal Railway Administration
GAO	Government Accountability Office
GFM	Global Freight Management System
HAZMAT	hazardous material
IRRIS	Intelligent Road and Rail Information Server
MACOM	major army command
MOU	memorandum of understanding
MSDS	Material Safety Data Sheet
NRC	National Response Center
OSM	other sensitive materiel
PMO	Program Management Office

SDDC	Military Surface Deployment and Distribution Command
SOP	standard operating procedure
SRC	security risk category
USCG	U.S. Coast Guard
USTRANSCOM	U.S. Transportation Command