

USAWC STRATEGY RESEARCH PROJECT

**CONSEQUENCE MANAGEMENT --
READY OR NOT?**

by

ROSALENE E. GRAHAM
United States Army

LTC DEBRA R. LITTLE
Project Advisor

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U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

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ABSTRACT

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Consequence management is a critical issue addressed in the new National Military Strategy. It tells our foes that the Department of Defense will have sufficient capability and be ready to respond to a Weapons of Mass Destruction/Effects attack. An effective consequence management strategy deters and dissuades the enemy's use of weapons of mass destruction. The threat from weapons of mass destruction is real. As the Department of Defense adopts the National Military Strategy and its consequence management approach, it must identify Weapons of Mass Destruction/Effects threats and appropriate responses. The National Military Strategy contains a consequence management strategy that meets three ends: enhanced protection for the force while fighting through a Weapon of Mass Destruction/Effects event; response to an internal Department of Defense Weapons of Mass Destruction/Effects attack; and meeting the needs of a lead federal agency should a foreign or domestic Weapons of Mass Destruction/Effects event occur.

The Department of Defense has done much to ensure it is ready but it can improve. It still must conduct a thorough analysis to address gaps and duplications in the technical response system. The Department of Defense relies on many assets to provide consequence management response. This paper recommends that the Department of Defense: develop Weapons of Mass Destruction/Effects performance standards for response assets; implement a consequence management readiness reporting system for technical assets; combine guidance on foreign and domestic Weapons of Mass Destruction/Effects events into one overarching consequence management document; use the Federal Emergency Response Agency model to study "means" gaps for assets listed in Joint Chiefs of Staff Instruction 3110.16; and establish performance standards for tactical and operational consequence management response assets.

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PREFACE

This document would not be possible without the encouragement and assistance of many people. I owe a considerable debt to the staff of the Safety/RadWaste Office, Joint Munitions Command, who inspired the topic and who ran the Office during my tenure at the Army War College.

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CONSEQUENCE MANAGEMENT – READY OR NOT?

Let him who desires peace prepare for war.
— Vegetius (c. 4th Century)

The United States and its military must be prepared to respond if an enemy uses a Weapon of Mass Destruction (WMD). That response consists of the military and civilian force, first responders, and many strategic technical assets. Effective response will deter and dissuade the enemy's use of WMD. By using an ends, ways, and means analysis, this paper will examine consequence management and the new National Military Strategy (NMS) to learn if the Department of Defense (DoD) can improve its preparedness. The three military ends for consequence management strategy are protecting the United States, protecting the force, and responding to attacks on DoD property. The DoD ways are still evolving. This paper will illustrate the capabilities "means" gap and redundancies that exist in DoD technical response capability by using a dirty bomb case study. To achieve the ends, the main recommendations for DoD include: establishing performance standards for the entire consequence management technical capabilities area; using a proven life cycle model to assess capability "means" gaps; combining domestic and foreign consequence management guidance; and implementing a readiness reporting system.

Consequence management is a critical issue that the NMS addresses by stating that:

Protecting the U.S. and operating in the environment described in the strategy requires an enhanced capability to effectively deal with the consequence of a WMD/E¹ attack. **Consequence management**² includes actions to protect the force, both military and DoD civilian, from the effects of WMD/E while continuing to operate effectively in a WMD/E environment. Military forces must also have the ability to assist in restoring areas, both at home and abroad affected by WMD/E use through actions to contain, neutralize, and decontaminate.³

THE BACKGROUND AND CONTEXT

The NMS is the advice of the Chairman, Joint Chiefs of Staff, on implementing the President's National Security Strategy. The consequence management strategy portion is a broad statement of what should be important to DoD and congressional policy makers as they determine how to prepare the military for a potential weapons of mass destruction/effects (WMD/E) event. It states that the nation will call upon the military, if needed, to assist after a WMD/E attack domestically and in foreign areas. The NMS is consistent with the President's National Security Strategy that requires that the United States effectively respond to the effects of WMD. Minimizing the effects of WMD against our people will help deter those who possess

such weapons and dissuade those who seek to acquire them by persuading enemies that they will not attain their desired ends. If deterrence fails, the United States must respond to the effects of WMD.⁴

The other major strategy document complimenting the NMS is the National Strategy for Homeland Security. It describes a national vision of a fully integrated national emergency response system that can deal with the hazards caused by any WMD/E event with one all encompassing plan and one single coordinator for emergency response. Although acknowledging that first responders come from the local level of government, it also recognizes that capabilities at the national level need enhancement because many localities and states have insufficient capability to respond to a WMD/E event.⁵

The new NMS uses the term WMD/E throughout. The WMD definition in traditional use includes chemical, biological, and nuclear weapons. The DoD defines WMD as --

Weapons that are capable of a high order of destruction and/or of being used in such a manner as to destroy large numbers of people. Weapons of mass destruction can be high explosives or nuclear, biological, chemical, and radiological weapons, but exclude the means of transporting or propelling the weapon where such means is a separable and divisible part of the weapon.⁶

The definition includes radiological weapons but restricts itself to massive destruction or destroying large number of personnel. Adding the "E" admits that WMD do not necessarily kill to cause an effect on the victims. Effects can be psychological, environmental, or economic. An example of WMD that may not do a great deal of destruction or kill a large number of people but have significant psychological or environmental effects is a dirty bomb.

A dirty bomb contains radioactive material, but does not use that material to produce a nuclear explosion, as is the case with a nuclear weapon. Dirty bombs would be constructed of conventional explosives and radioactive material, the detonation of which would result in the dispersion of the radioactive material contained in the bomb. As with any explosion, people in the immediate vicinity could be killed or injured by the blast itself. The dispersed radioactive material could lead to exposure of people in the vicinity. It is difficult to predict the level of exposure of persons, as this would depend on many factors such as the physical and chemical form of the radioactive material, size and type of explosive and proximity of persons to the blast. In all likelihood, the most severe tangible impacts of a dirty bomb would be the social disruption associated with the evacuation, the subsequent clean-up of contaminated property and the associated economic costs.⁷

A dirty bomb is but one example of WMD that would cause disruption – another could be dispersal of biological agents such as anthrax. Adding the "E" – effects -- is important because it adds a dimension other than destruction with which those responsible for consequence

management must deal. When the term WMD/E is used in this paper it will include chemical, biological, nuclear, radiological, high explosives, and industrial hazardous material weapons that when used causes massive destruction, disruption, or loss of life. Industrial hazardous material is included because of its availability. Virtually every large city has material that could cause havoc.⁸ Consequence management reduces the risk for those who encounter the WMD effects.

CONSEQUENCE MANAGEMENT VERSES CRISIS MANAGEMENT⁹

Consequence management is the ability to deal with the aftermath effectively. The DoD defines consequence management as --

Those measures taken to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of a chemical, biological, nuclear, and/or high-yield explosive situation. For domestic consequence management, the primary authority rests with the States to respond and the Federal Government to provide assistance as required.¹⁰

Besides dealing with the physical, emotional, and economic aftermath of a WMD/E event, consequence management deals with the response, the recovery, and the mitigation of effects. It ensures that more catastrophic events do not happen as secondary effects of the WMD/E.¹¹ In looking at the military consequence management strategy, the objectives are limited to the physical aftermath and, to a small extent, the emotional aftermath. The material aspect of the event includes the agent, the medical concerns, the damage, and the people. Dealing with the economic aftermath is outside military objectives. The Federal Emergency Management Agency (FEMA) is the lead federal agency for domestic response and the Department of State for foreign response.

The DoD may also respond in a crisis management situation. The DoD definition of crisis management is a --

Measure to resolve a hostile situation and investigate and prepare a criminal case for prosecution under federal law. Crisis management will include a response to an incident involving a weapon of mass destruction, special improvised explosive device, or a hostage crisis that is beyond the capability of the lead federal agency.¹²

Many of the same technical capabilities needed in responding to a crisis management event are the same as those needed in responding to a consequence management event. For example, the technical capabilities needed to handle radiological material in a dirty bomb before it detonates are the same as needed after detonation. Currently, the Federal Bureau of Investigation is the lead federal agency for a Crisis Management event.

According to the NMS, the military must be ready to deal effectively with the consequence of a WMD/E attack and protect the United States and itself. It also must operate effectively in a WMD/E environment and be ready to assist our friends and allies if others attack them.¹³ To better understand why the military needs to prepare for a consequence management mission, we must know the threat environment described in the NMS.

THE THREAT ENVIRONMENT

The Chairman, Joint Chiefs of Staff, describes the security environment as “dangerous and uncertain.” He takes particular note of the threat posed by WMD/E. “Such weapons can give catastrophic power to lesser states and/or small groups who may not hesitate to use them to achieve their goals.”¹⁴ Accessibility to WMD/E is growing. The materials and equipment needed to make them usually have a justifiable nonmilitary application and are increasingly available to state and nonstate actors.¹⁵ As an example, an enemy can find radioactive material in medical, industrial, and research facilities across the world. According to the International Atomic Energy Agency, “the radioactive materials needed to build a ‘dirty bomb’ can be found in almost any country in the world, and more than 100 countries may have inadequate control and monitoring programs necessary to prevent or even detect the theft of these materials.”¹⁶ Our deterrence capabilities including the use of human intelligence, sensors, coercion, persuasion, or adequate controls are unlikely to counter all the people who potentially have access to a range of WMD/E. While an effective consequence management capability is a deterrent in itself, it likely will not dissuade every potential enemy from using WMD/E.

Just as the September 11, 2001 events showed, the United States is vulnerable to asymmetric attacks through indirect methods. In addition, the NMS clearly points out that “actors may seek these weapons because of their relative affordability, ability to deliver mass effects, the international political influence that results from having such capabilities, and the potential coercive and deterrent power that such weapons convey.”¹⁷

When considering the possibility of a terrorist using our own hazardous material against us, we only need to look a small distance to see a potential weapon. Many of the nation’s chemical and industrial sites remain vulnerable to attack. In February 2001, Greenpeace activists gained access to a critical control panel in a Dow Chemical Plant in Louisiana. In doing so, they demonstrated security problems in the chemical industry that, if not corrected, could allow terrorists similar access to chemicals that they can easily use as weapons. An additional concern is the nation’s transportation network, especially rail, through which industry routinely

ships its hazardous chemicals.¹⁸ Hazardous material could become a weapon of choice because of our vulnerability.

One can imagine a variety of scenarios involving WMD/E. To date, attackers have used conventional explosive weapons rather than chemicals and biological agents as their weapons. There is a low probability of high consequence attacks that may involve the full range of unconventional weapons materials.¹⁹ While the probability is low, the consequences are high if a WMD/E is used. In the recent past, there has been an increasing use of unconventional weapons by state and nonstate actors.

The threat from WMD is real. There are several recent examples of WMD events that may be instructive. Recent events include the bombing of the Murray Federal Building in Oklahoma with diesel-laden fertilizer, the 1994 Matsumoto Japan sarin attack, the 1995 sarin subway attack in Japan,²⁰ and the 2001 anthrax attacks through the postal system in Washington, D.C. As for a dirty bomb, no one has ever used one successfully. "One known case of an attempt to terrorize using radioactive material was the 1995 case when Chechen rebels placed a container with cesium-137 in a Moscow park. Fortunately, the material was not dispersed."²¹

The United States military is likely to be a target for a WMD/E. The enemy can target the forces as they conduct operations. The military forces must continue their warfighting mission in hazardous environments. For DoD, consequence management is not just dealing with the aftermath of a WMD/E event but with operating through its effects as well. The DoD must be ready if the unthinkable happens. A threat analysis is a needed first step to assure that the ends, ways, and means of the strategy can manage WMD/E consequences.

ANALYSIS USING AN ENDS, WAYS AND MEANS FRAMEWORK

A useful way of studying military strategy is through an ends, ways, and means methodology.

'Ends' can be expressed as military objectives. 'Ways' are concerned with the various methods of applying military force. ... 'Means' refers to the military resources (manpower, materiel, money, forces, logistics, etc.) required to accomplish the mission. This leads us to the conclusion that military strategy equals military objectives plus military strategic concepts, plus military resources.²²

In examining the consequence management strategy in the NMS, the overarching military objective (end) is protection of the United States and the military and DoD civilian force. The strategic concepts (ways) are operating effectively in an environment affected by a WMD/E

attack and the ability to assist in restoring areas affected by WMD/E use. The military resources (means) of achieving the objective are enhanced capabilities. The NMS is a long-range look at what the military strategy should be. It does not attempt to fit past or current ways and means into a future framework. It must examine the strategy ends so it can focus on future needs, especially its technical capabilities.

STRATEGIC ENDS

The National Security Strategy “end” for consequence management is to have an effective global response to WMD/E used against the United States and its allies. The “ways” are to deter and dissuade enemies from using these weapons by causing them to believe that the aftermath of their use will not achieve their desired goals.²³ The NMS uses consequence management as a deterrent as well. Using the dirty bomb example, if the enemy has the goal of stopping U.S. military action against them, they might use a dirty bomb on our forces. If U.S. military forces have a capability to fight through radioactively contaminated areas, then the enemy is less likely to use a dirty bomb. Similarly, the National Strategy for Homeland Security discusses the national ends for consequence management -- to “minimize the damage and recover from any future terrorists attacks that may occur.”²⁴ The response system envisioned will involve local, state, and federal level including the military, if needed.

Within the broad NMS statement on consequence management, there are three supporting military ends: protecting the United States, protecting the force, and responding to attacks within DoD. The discussion of military ends that follows contains a limited examination of operational and tactical ways and means. The strategic ways and the strategic means sections will focus on an analysis of the technical capabilities methods and resources.

PROTECTING THE UNITED STATES

The DoD supports other lead federal agencies in domestic and foreign consequence management. The National Strategy for Homeland Security outlines several missions for DoD including augmenting response personnel, providing specialized skills and transportation assets, and upfront training.²⁵ For a domestic event, if the local community does not have sufficient resources to respond to an attack, then the community officials ask for help from the state. If the governor does not have sufficient resources to respond, then he or she asks for help from the President.²⁶ The FEMA, as the federal coordinator, can request assistance from other federal agencies including DoD in conformity with the National Response Plan. They may request follow-on logistics and technical capabilities. Likewise, in a foreign event, if other countries do not have sufficient resources, then they would ask the President for help and the

lead agency, Department of State, would coordinate the U.S. response including assets from DoD.

If FEMA calls on DoD after a WMD/E event, DoD must respond using existing ways and means. Fortunately, the responding capabilities are virtually the same as conducting a mission within DoD. The limitations in the Stafford Act preclude federal agencies from enhancing its capabilities solely for potential domestic consequence management needs. This act only allows them to use its existing authorities and resources in support of state and local disaster assistance efforts including a WMD/E event.²⁷ Therefore, when DoD determines its consequence management ways and means, it must do so based the other two military objectives.

PROTECTING THE FORCE

The second military objective is protecting military forces in an environment where there was a WMD/E event.²⁸ The military concept for coping with a WMD/E event in the past has been to protect the force and withdraw from the area. In the future, the military will have to protect the force and fight through the area affected.²⁹ The DoD must design ways and means to protect the force to the level of performance that DoD expects of the force in a WMD/E environment.³⁰

The DoD challenge is enhancing the forces fighting ability while protecting them well enough to cause minimal mission degradation. This requires greater capability to operate (ways) in hazardous environments. The capability must be robust enough not to hinder operations but allow for seamless integration of the protection when needed. There must be sufficient sensors that detect the effects of a WMD before the force suffers from the effects.

Recently, the RAND Corporation studied the Air Force's ability to respond to a hazardous material WMD/E event and concluded that the military had insufficient ways and means to counter the attack.³¹

In sum, the U.S. military is aware of the threat of toxic warfare, and some progress is being made to raise awareness through U.S. strategy and doctrine. However, more work remains to be done in identifying and locating toxic threats, developing operational and tactical responses to toxic warfare, expanding training for responding to toxic attacks, and devising adequate cleanup procedures.³²

RESPOND TO WMD/E ATTACKS WITHIN DOD

The third military objective is providing first response to WMD/E attacks and subsequent containment, neutralization, and decontamination of DoD assets both at home and abroad. The

National Strategy for Homeland Security continually emphasizes that the first response to WMD lies with the local jurisdiction. For DoD, the local jurisdiction equates to the first response capability at its posts, camps, and stations.

The local fire departments, hazardous material response units, and similar first response organizations are the tactical and operational level assets that will respond immediately to a WMD/E within DoD's jurisdiction. These trained and equipped units can respond to hazardous material incidents already. They have safety and environmental plans for catastrophic events involving hazardous material within their boundaries and they have mutual support agreements with other first response organizations in the local communities. The worst-case scenario is a material, chemical, biological, nuclear, or radiological, that is not part of the local hazardous material inventory and thus not part of its planning. The locality may not be ready to respond to these unfamiliar threats. Additionally, DoD organizations outside of the continental United States may be in areas without local first response units that can respond to a WMD/E attack. The DoD assets must have the organic capability to provide the first response if the local infrastructure cannot.

The DoD must determine the performance standards for tactical and operational level assets in a WMD/E event. Another RAND study suggested that first responders should use the following planning factors to ensure they are ready for a WMD/E event:

- For chemical weapons, plan for 5,000 exposures with half of them needing medical treatment.
- For biological attacks, plan for incidents where 5,000 people could die if not treated.
- For radiological incidents, plan to evacuate 25,000 people.
- For nuclear events, plan for 1000,000 deaths.³³

While these performance standards may not suit isolated DoD posts, camps, and stations, they are a beginning mark for planning.³⁴ The first responders cannot handle WMD effects alone. Strategic ways and means must be available.

STRATEGIC WAYS

The civilian control within DoD of consequence management policy and installation preparedness is currently in the Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (ASD (SO/LIC)).³⁵ The Secretary of Defense withdrew consequence management from the Secretary of the Army, DoD Executive Agent for Civil Support, on 1 April 2000.³⁶ A principal reason was the need for interagency coordination on

consequence management issues at the principals and deputy principal level committee levels.³⁷ The Secretary of Defense will make the decision on DoD response to a WMD/E event and direct the Chairman, Joint Chiefs of Staff, to act.

To aid response, the Joint Staff published CONPLAN 0500 for domestic consequence management³⁸ and CONPLAN 0400 for foreign consequence management. The CONPLAN 0400 requires the Combatant Commander to create a Joint Task Force Command and Control Organization within their area of responsibility to respond to consequence management missions.³⁹ The DoD does not have separate domestic and foreign WMD/E consequence management technical response capabilities. The DoD technical capabilities will respond as needed, where needed. However, the Joint Staff separated their guidance into domestic and foreign consequence management. Both scenarios apply equally to responding technical assets. In all likelihood, if a dirty bomb exploded in Washington, D.C. or in Heidelberg, Germany, and DoD gets an assist mission, the same DoD technical units would respond. The event's nature and type of hazard dictate which technical capability goes, not the location. Because of limited technical response assets, if multiple events occur, the Joint Staff must prioritize where to send the asset. Therefore, the Joint Staff should rework their guidance into one overarching consequence management document that covers both foreign and domestic events and outlines a basis for prioritizing the capabilities when needed. This improvement will lead to consistent planning by the technical assets.

PLANNING

Consequence management planning is continuing to improve. Planning started with foreign consequence management. The Unified Command Plan now includes the domestic response responsibilities. The Joint Staff and the Combatant Commanders have made great strides in developing plans with command and control mechanisms. The Joint Task Force concept used in Military Operations Other Than War is a mature concept that Combatant Commanders can use effectively with WMD/E response.⁴⁰

Another major player in consequence management planning is the Combatant Commander, U.S. Northern Command, who has the mission for homeland security and civil support for most of North America. Commander, U. S. Northern Command, will coordinate military assistance to civil authorities but is not the force provider. He is developing the military operational plans for support. The Joint Task Force – Civil Support (JTF-CS) at Fort Monroe, Virginia, provides command and control for DoD elements that support the lead federal agency in consequence management.⁴¹ The JTF-CS is actively conducting deliberate planning to

develop ways for response to WMD/E events. This planning must include response criteria for strategic technical assets.

USING STANDARDS TO FOCUS TECHNICAL CAPABILITIES

The DoD must provide consequence management focus to its strategic technical capabilities. The ASD (SO/LIC) ought to establish a consequence management readiness reporting system for the service components and DoD Agencies. Just as the first responders need performance standards, so do the follow-on technical organizations. Without them, their readiness is uncertain. For example, the follow-on assets needed after a dirty bomb detonation must have performance standards for tasks such as radiation site characterization of the contamination, verifying the contamination boundaries, decontamination, and processing and disposing of contaminated waste. These are tasks beyond the first-responder function requiring specific radiation-related skills. The DoD must use a systematic performance standard approach from the WMD/E event through disposal activities.

This system will benchmark DoD's means to conduct consequence management. The DoD will know how quickly it can respond with the appropriate asset, what tasks it can perform, and what are the expected results. It will provide a baseline to the DoD components for meeting response needs and determining strategic means. An advantage of setting performance standards is that it will allow components to preposition material to meet the readiness requirements if needed. The DoD's dilemma is how much resources to allocate to consequence management given the many critical warfighting missions that it must fund.

STRATEGIC MEANS

The DoD does not stand alone in preparing for the aftermath of a WMD/E event. In making funding decisions, DoD must remember that it is just one of the federal agencies with a consequence management role. In 2001, over 40 federal agencies spent an estimated \$11 billion on disparate aspects of consequence management. To complicate matters, up to 25 congressional committees have some degree of oversight.⁴² At the federal level, agencies use this funding money for preparedness, training, and research and development. The DoD uses its resources in a similar way although it does not track the cost as consequence management funding. Within DoD, service components and other agencies have consequence management capabilities. The organizations allocate resources as they see fit, resulting in different levels of preparedness. There must be an analysis of what DoD needs and how it uses its resources. The organizations already in place must be part of this analysis.

WEAPONS OF MASS DESTRUCTION CIVIL SUPPORT TEAMS

The U.S. Northern Command has Weapons of Mass Destruction Civil Support Teams (WMD-CST) in the National Guard in many states for domestic consequence management. The Larsen and Peters study on preparing the Army for Homeland Security criticized the WMD-CST teams for being a reconnaissance team who determines requirements before the critical response elements can deploy thus using precious time when time may be critical. The study questions whether the teams can be at the event site within four hours or if it can work a 24 hour seven day a week schedule effectively. Also unknown is if it or any of the technical consequence management assets have the mobility assets to respond quickly. The study suggests that DoD should put decontamination capability into this initial response element.⁴³

The WMD-CST and follow-on technical assets should periodically war game with those they will support. Without these training exercises, there may be different expectations about the scope and effect of DoD's capabilities.⁴⁴ If DoD routinely does a task one way and the supported community does it another, there could be unneeded friction in an already tense environment after a WMD/E attack. Different expectations can lead to having the wrong capability or not having a capability where or when it is needed.

IDENTIFYING THE DOD TECHNICAL CAPABILITIES FOR A WMD/E EVENT

Service Components have undertaken various studies to assess their consequence management capabilities.⁴⁵ Each begins by outlining the current capabilities that DoD has and how DoD would use them. They then identify possible long-range means and ways. This is as it should be. Current capabilities must not constrain future strategies because the strategies must look forward to assess threats, requirements, and opportunities.⁴⁶

The Joint Staff in Joint Chiefs of Staff Instruction 3110.16 has identified 56 separate types of military assets and capabilities within the Army, Air Force, Navy, Marines, and some DoD agencies that have unique technical application for consequence management. These assets either will deploy to the event or are available through reach back to provide technical assistance.⁴⁷ This list does not include the first responder organizations at post, camps, and stations nor does it consider combat support and combat service support units like signal, medical, logistics, or engineer units that will likely play a role in the WMD/E aftermath.

Because the capabilities listed for each asset were self-identified, there is little consistency on how they did the reporting which further muddies the water. The self-identified capabilities vary in the richness of their descriptions. Unless the Joint Staff understands the capabilities of each asset, the action officer cannot easily determine from which component to

request help. For instance, if the Joint Staff action officer is from the Air Force, he or she may be more familiar with the Air Force capability and will call upon that asset even though another component's asset may be a better mission fit.

At least one identified organization did not have a consequence management mission, per se, until they responded to a data call asking if they have the capability to respond to a chemical, biological, radiological, nuclear, or explosive event. In the late 1990's, the Army Materiel Command (AMC) had a data call asking for consequence management capabilities and assets within the command. An AMC action officer urged the Army Contaminated Equipment Retrograde Team (ACERT) to respond that it had a capability for response to low-level radiological incidents.⁴⁸ The Joint Staff subsequently become aware of the role of the ACERT and put them first in a listing of Army assets available for consequence management events.⁴⁹ Since the ACERT's self-identification, it has not participated in any WMD/E response planning or exercise.

This team gained a consequence management mission without thorough analysis of how much they can contribute or in what specific areas. Their description was in terms of their present mission of responding to accidents and incidents involving Army equipment contaminated with low-level radioactive material. This experience illustrates that merely having a listing of capable assets does not equate to having assets ready to respond to every WMD/E event. The Joint Chiefs of Staff must analyze the required capabilities listed in Joint Chiefs of Staff Instruction 3110.16 to ensure sufficient and efficient use of the capabilities available.

A Dirty Bomb Case Study

A method to analyze whether DoD has the means to respond to WMD/E attack is to look at a case study involving a dirty bomb. Of the 56 organizations listed in Joint Chiefs of Staff Instruction 3110.16, approximately 22 organizations have capability to provide reach back and strategic response to a dirty bomb detonation.⁵⁰ The number does not include command and control units. There are capability overlaps and niches. As an example of overlap, three service teams are dedicated to radiological incident response. The teams have similar missions yet each service reports their capabilities differently. The Navy's Radiation Control (RADCON) team in Norfolk, Virginia is a fixed, dedicated asset supporting the Navy nuclear submarine program. The Army's RADCON team is at the Communication-Electronics Command at Fort Monmouth, New Jersey. It is a mobile team having a radioanalytical laboratory and is able to do radiological detection. The Air Force Radiation Assessment Team is part of the Air Force Institute for Environment, Safety, and Occupational Health Risk Analysis at Brooks AFB, Texas.

The team is a mobile team that has a radioanalytical laboratory and can do more extensive radiological detection operations.⁵¹ Similarly, each service has radiological medical support capabilities that they described differently and provide like capabilities. Every service component and some DoD agencies have some capability for responding to radiological events.

Originally, these three organizations as well as most of the other 19 designed their capabilities around a potential nuclear event; however, DoD can also use these capabilities in a radiological event if required. The difference between a nuclear detonation event and radiological dispersal event (a dirty bomb) is the material used. A nuclear detonation involves nuclear material that can produce a nuclear blast with explosive damage and radioactive dispersion. A dirty bomb needs an explosive initiator and the damage comes from the explosive used. Because a dirty bomb contains radioactive material, it also has radioactive material dispersion. The greatest hazard from a dirty bomb is from the blast itself. The dispersal of the radioactive material is a contamination problem and poses a slight physical hazard. The dispersal takes a solid radioactive source such as Cobalt-60 that can cause serious injury from its high radiation output and highly disperses it. The effect of the blast actually dilutes the radioactive material into a less hazardous form. The physical hazard from a dispersed powdered radioactive source such as Cesium-137 comes from either breathing or ingesting the resultant powdered particles. Where the fragments and particles fall localizes the radiation within the dispersal area.⁵² The greatest impact on the public would be psychological effect rather than the radiation hazard. The differences between the type of event and the capabilities of the technical assets responding (nuclear versus radiological) shows that DoD needs to do some tailoring within the assets for broad-spectrum consequence management capabilities.

Using Life Cycle Analysis for Means Capability Determination

A better method of cataloging response capabilities is to examine a WMD/E event using a life cycle model similar to the one shown at Figure 1. It illustrates the process through which organizations can prepare for catastrophic events, respond to them when they occur, help people and institutions, recover from them, mitigate their effects, reduce the risk of loss, and prevent other catastrophic events from happening.⁵³ The FEMA uses this methodology for emergency management preparedness. The DoD could expand this methodology to include WMD/E events, so that each organization reports in common terms. For example, do the assets have response capabilities that can secure the area, identify the hazards (e.g., radioactive, explosive, chemical), determine the physical form (chunks/particulates;

soluble/insoluble), conduct a risk assessment, and determine surface, depth, and air boundaries?⁵⁴



Figure 1. The disaster life cycle⁵⁵

When DoD or the Joint Chiefs of Staff complete this study for all life cycle phases, then the “means” gaps can be identified and addressed. Until then, the listing of available WMD/E capable assets is just that, a listing of available assets. Using the disaster life cycle model, DoD can determine if there is unneeded duplication in resources, capabilities, and assets. It will also show where make their capabilities more robust. Without it, DoD could expend valuable resources by sending redundant capabilities or having ad hoc capabilities develop during the mission. An illustrative example of how ad hoc capabilities develop, while not because of a WMD/E event but because of depleted uranium rounds use in wartime, is the retrograde of Army’s equipment after Operation Desert Storm. The Army had never used depleted uranium in battle. Because of fratricides and accidental fires, several pieces of Army equipment became radioactively contaminated. The Army called forward a team from the AMC to characterize and prepare the radioactively contaminated equipment for retrograde. The team’s mission before Operation Desert Storm was packaging and disposal of Army low-level radioactive waste. The Army had to develop, out of an existing capability, a new one that could deal with retrograde of radioactive material. The Army formalized this mission in 1998 and formed the ACERT.⁵⁶

Just as there was a “means” gap in capability to retrograde radioactive contaminated equipment, there is one in determining which technical capability will respond if two mediums are involved in a WMD/E attack. Most assets train for only one medium (e.g., radiation, chemical, nuclear, or biological) and cannot provide capability if mixed with another. The DoD can use this model to identify these gaps. When coupled with a WMD/E threat analysis, using FEMA’s disaster life cycle model will provide the ability to prioritize effort and allocate resources.

The power of conducting an in-depth analysis using the FEMA model can result in the means to provide the enhanced capabilities that the NMS requires. This effort will also bring into focus the true consequence management capabilities of DoD and allow decision makers to make policy and resource decisions because they know the entire consequence management picture.

CONCLUSION

As DoD adopts the new NMS and its consequence management strategy, it must identify WMD/E threats and appropriate responses. Clearly, DoD can respond now to a WMD/E event. The NMS envisions an enhanced DoD capability to deal with a WMD/E event. To meet this challenge, DoD can use an ends, ways, and means analysis to examine the overall strategy. This paper's analysis produced several recommendations:

- Seamlessly integrate WMD/E protection when the force needs it.
- Develop and provide sufficient sensors to detect WMD effects before the effects impact the force.
- Develop technical responses to WMD hazards.
- Develop WMD/E readiness performance standards for response assets
- Implement a consequence management readiness reporting system for technical assets.
- Combine guidance on foreign and domestic WMD/E events into one overarching consequence management document.
- Determine how to prioritize using technical capabilities if needed in several places.
- Have JTF-CS conducting deliberate planning which includes response criteria for technical assets.
- Have the WMD-CST and technical assets practice with the agencies they will support.
- Use the FEMA model to study "means" gaps for assets listed in Joint Chiefs of Staff Instruction 3110.16. Use results to --
 - Tailor assets to meet the needs.
 - Allocate consequence management resources.

By meeting its military ends of protecting the force while fighting through a WMD/E event and by adequately responding to an internal WMD/E event, DoD is ready to meet the needs of a lead federal agency should a foreign or domestic WMD/E event occur. Performance standards for

the entire consequence management technical capabilities area will provide consistent readiness across DoD.

The consequence management ways are still evolving. The DoD has done much to get ready for a WMD/E event. The Joint Staff and the geographical combatant commanders have plans for consequence management. However, there still exist concerns involving responsiveness, mobility, expectations, and capabilities. The Joint Chiefs of Staff have separate guidance for foreign and for domestic WMD/E events. They should combine the guidance because only one set of strategic technical capabilities exist.

During the examination of DoD's technical capabilities, especially those that will respond to a dirty bomb scenario, a "means" gap emerged. This gap showed that DoD must conduct a thorough study of its technical means using FEMA's disaster life cycle model. This study will determine what technical capabilities DoD needs for consequence management and replace the current data call system. By providing a method to determine "means" duplications and gaps, DoD can properly allocate resources.

As part of the National Security Strategy, effective consequence management can help dissuade and deter enemies. The NMS, in addressing consequence management, makes it known to our foes that DoD will have sufficient capability and will be ready to respond should the need arise. The challenge now is to make it so.

WORD COUNT = 6268

ENDNOTES

¹ WMD/E is the acronym for Weapons of Mass Destruction/Effects.

² Emphasis contained in original document.

³ U.S. Joint Chiefs of Staff, Draft National Military Strategy of the United States of America (Washington, D.C.: U.S. Department of Defense, September 2002), 29.

⁴ George W. Bush, A National Security Strategy, (Washington, D.C.: The White House, September 2000), 14.

⁵ George W. Bush, National Security Strategy for Homeland Security, (Washington, D.C.: The White House, July 2002), 42.

⁶ U.S. Joint Chiefs of Staff, Department of Defense Dictionary of Military and Associated Terms, Joint Publication 1-02, (Washington, D.C.: U.S. Department of Defense, 12 April 2001 (as amended through 9 January 2003)); available <http://www.dtic.mil/doctrine/jel/doddict/>; Internet; accessed 15 Mar 2003.

⁷ International Atomic Energy Agency, "Inadequate Control of World's Radioactive Sources," (Press Release, 24 June 2002); available from http://www.iaea.org/worldatom/Press/P_release/2002/prn0209.shtml; Internet; accessed 4 January 2003.

⁸ Theodore William Karasek, Toxic Warfare, (Santa Monica, CA: Rand, 2002), 3; available from <http://www.rand.org/publications/MR/MR1572/>; Internet; accessed 15 March 2003.

⁹ Both the Draft National Military Strategy and the National Security Strategy address consequence management but the National Strategy for Homeland Security merges the terms "Crisis Management" and "Consequence Management" into one term – "Incident Management."

¹⁰ U.S. Joint Chiefs of Staff, Department of Defense Dictionary of Military and Associated Terms,

¹¹ Federal Emergency Management Agency, "About FEMA," available from <http://www.fema.gov/about/what.shtm>, Internet; accessed 21 February 2003.

¹² U.S. Joint Chiefs of Staff, Department of Defense Dictionary of Military and Associated Terms.

¹³ U.S. Joint Chiefs of Staff, Draft National Military Strategy of the United States of America 29.

¹⁴ *Ibid*, ii.

¹⁵ Richard A. Falkenrath, "The Problems of Preparedness: Challenges Facing the U.S. Domestic Preparedness Program," BCSIA Discussion Paper 2000-28, ESDP Discussion Paper

ESDP-2000-05, (Cambridge, MA: John F. Kennedy School of Government, Harvard University, December 2000), 11.

¹⁶ International Atomic Energy Agency.

¹⁷ Draft National Military Strategy of the United States of America 6.

¹⁸ Karasek, 40 - 41.

¹⁹ John V. Parachini, "Combating Terrorism: Assessing Threats, Risk Management, and Establishing Priorities (Statement of John V. Parachini, Center for Nonproliferation Studies, Monterey Institute of International Studies before the House Subcommittee on National Security, Veterans Affairs, and International Relations, 26 July 2000); available from <http://cns.miis.edu/pubs/reports/paraterr.htm>; Internet; accessed 15 march 2003.

²⁰ Robyn Pangi, "Consequence Management in the 1995 Sarin Attacks on the Japanese Subway System," BCSIA Discussion Paper 2002-4, ESDP Discussion Paper ESDP-2002-01, (Cambridge, MA: John F. Kennedy School of Government, Harvard University, February 2002), 8 - 9.

²¹ International Atomic Energy Agency.

²² A. F. Lykke, Jr., "Toward an understanding of military strategy," in Military strategy: theory and application (5th ed.), ed. Colonel Arthur F. Lykke, Jr. (Carlisle Barracks, PA: U.S. Army War College, 1989); available from <http://www.amsc.belvoir.army.mil/ecampus/gpc/prework/strategy/understand.htm>; Internet; accessed 4 January 2003.

²³ Bush, A National Security Strategy, 14.

²⁴ Bush, National Security Strategy for Homeland Security, 41.

²⁵ *Ibid*, 42-44.

²⁶ The federal law governing this process is The Robert T. Stafford Disaster Relief And Emergency Assistance Act, as amended, U.S. Code, vol. 42, secs. 5121, 22 May 1974.

²⁷ *Ibid*.

²⁸ U.S. Joint Chiefs of Staff, Draft National Military Strategy of the United States of America, 26.

²⁹ The author bases these ideas on remarks made by a speaker participating in the Commandant's Lecture Series.

³⁰ Eric V. Larson and John E. Peters, Preparing the U.S. Army for Homeland Security: Concepts, Issues, and Options, (Santa Monica, CA: RAND, 2001), 31.

³¹ Karasik, 37-38.

³² Ibid.

³³ Ibid, 56.

³⁴ Burt B. Tussing and Jeffery C. Reynolds, ed., Responding to Terror: A Report of the U.S. Army War College Consequence Management Symposium 21 – 23 August 2001, (Carlisle, PA: U.S. Department of Army, Strategic Studies Institute, May 2002), 203. Ideas attributed to Mr. Frank Lane, Territorial Security, Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict, who emphasized the need for a baseline for emergency responders on DOD installations.

³⁵ Ibid, 199.

³⁶ U.S. Joint Chiefs of Staff, Military Assistance To Domestic Consequence Management Operations In Response To A Chemical, Biological, Radiological, Nuclear, Or High-Yield Explosive Situation, Chairman of the Joint Chief of Staff Instruction 3125.01, (Washington, D.C.: U.S. Department of Defense, August 2001), 2.

³⁷ Tussing and Reynolds, 191.

³⁸ Ibid, 195.

³⁹ Ibid, 209.

⁴⁰ Ibid, 249 – 266.

⁴¹ A good overview of U. S. Northern Command's role and responsibilities can be found the U. S. Northern Command web site <http://www.northcom.mil>.

⁴² Tussing and Reynolds, 11.

⁴³ Larson and Peters, 185 - 192.

⁴⁴ Ibid, 196.

⁴⁵ This paper quotes from only two of the studies - both by Rand - Karasik and Larson and Peters.

⁴⁶ Lykke.

⁴⁷ U.S. Joint Chiefs of Staff, Military Capabilities, Assets, and Units for Chemical, Biological, Radiological, Nuclear, and High Yield Explosive Consequence Management Operations, Chairman of the Joint Chiefs of Staff Instruction 3110.16 (Washington, D.C.: U.S. Department of Defense, 10 November 2000).

⁴⁸ This is the author's personal experience while serving as the Chief, Safety/Rad Waste Office, Operations Support Command, during the episode discussed.

⁴⁹ U.S. Joint Chiefs of Staff, Military Capabilities, Assets, and Units for Chemical, Biological, Radiological, Nuclear, and High Yield Explosive Consequence Management Operations, B-1.

⁵⁰ The document never uses the term dirty bomb. Many assets self-identified themselves as having radiological or nuclear capabilities. The number represents the author's best determination of the assets that could respond to a dirty bomb event.

⁵¹ Scott M. Nicholson and Darren D. Medlin, Radiological Weapons of Terror, Research Project (Maxwell Air Force Base, AL: Air University, April 1999), 38-39.

⁵² Kelly Crooks, Senior Health Physicist, Joint Munitions Command clarified this idea during his peer review of this section.

⁵³ Federal Emergency Management Agency.

⁵⁴ The details on the difference between a nuclear and a radiological event came from Kelly Crooks, Senior Health Physicist, Joint Munitions Command, during his peer review of this section.

⁵⁵ Federal Emergency Management Agency.

⁵⁶ General Accounting Office, Operation Desert Storm: Army Not Adequately Prepared to Deal with Depleted Uranium Contamination, (Washington, D.C.: U.S. Government Printing Office, 1993), 24 – 26.

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