

The Future of Chemical, Biological,

Between 1991 and 2001, life became more complex for those addressing the issue of nuclear, biological, and chemical (NBC) defense of military forces. Prior to 1991, only warring superpowers were expected to use NBC weapons during major combat operations, and nations needed both NBC defense capabilities and nuclear and chemical weapons with which to threaten

retaliation. The possibility that U.S. forces might be exposed to such weapons was a known factor but not a constant concern or high priority at the operational or tactical levels. NBC meant “No Body Cares” to those who thought Soviet threats of using chemical or biological (CB) weapons on the battlefield would be countered at the strategic level, obviating much of the need for NBC defense training and large stocks of defense gear.

The first Gulf War changed the calculus. Despite clear indications in the mid-1980s that other nations were developing unconventional weapons, the U.S. military was caught unprepared for the possibility of chemical or biological warfare.

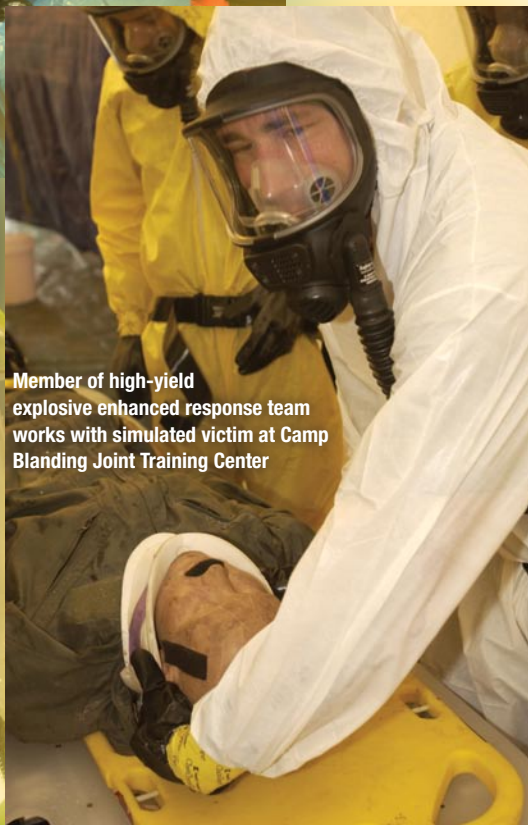
The Armed Forces got a pass on CB defenses in 1991, but dodging the bullet that time did not inspire confidence. Following the Gulf War, the Department of Defense (DOD) initiated work on a counterproliferation concept for responding to a nonnuclear nation-state that

might use CB weapons as an “asymmetric” measure against U.S. military operations.¹ NBC defense was renamed “passive defense,” probably by an Air Force advocate of Cold War doctrine when *counterforce*, *active defense*, and *passive (civil) defense* were terms of art in discussing response options to Soviet strategic nuclear strikes.

While concepts and definitions were being furiously debated, Aum Shinrikyo developed the nerve agent sarin in its own laboratories (notably, without any nation-state assistance). In March 1995, cult

125th Fighter Wing (Shaun Withers)

Chemical Reaction Team prepares to decontaminate building and search for victims, Exercise Vigilant Guard



Member of high-yield explosive enhanced response team works with simulated victim at Camp Blanding Joint Training Center

151st Communications Flight (Michael D. Evans)

COMMENTARY



Airman in HAZMAT mask and suit during chemical munitions training class with fire department

6th Communications Squadron (Bradley A. Lail)

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Radiological, and Nuclear Defense

By ALBERT J. MAURONI

members left containers of sarin in several subway cars in Tokyo, causing 12 deaths and nearly 1,000 casualties (most later recovered). This has been the only successful chemical attack by terrorists since they began looking to unconventional hazards as weapons 30 years earlier.

Similarly, there was only one successful biological terrorist attack between 1965 and 2001: the Bhagwan Shree Rajneesh cult's use of salmonella to sicken more than 700 people in Oregon in 1984.

Responding to the attack in Japan (and without any indications as to a terrorist CB threat within or targeted against the United States), the Federal Government mandated a nationwide emergency responder training program and the creation of a military rapid reaction force and National Guard civil support teams for responding to chemical, biological, radiological, and nuclear (CBRN) events.²

A Surprise in the Mail

In the fall of 2001, the Nation faced an unknown assailant who was mailing anthrax-laden letters to media outlets and congressional offices. Simultaneously, White House officials debated the rationale and processes for invading Iraq and stopping what they termed a *nexus of terrorism* and weapons of mass destruction (WMD). In December 2002, the White House released the *National Strategy to Combat Weapons of Mass Destruction*, detailing plans to counter both nation-states armed with unconventional weapons and terrorist groups those nations might arm. Combining the military's response to traditional battlefield threats of NBC weapons with the Federal Government's response to overseas and domestic terrorist CBRN capabilities was deliberate, in part due to the George W. Bush administration's belief that terrorists would get their materials from "rogue nations" with WMD programs. Defense Secretary Donald Rumsfeld designated U.S. Strategic Command to "integrate and coordinate" all combating

WMD functions for DOD in January 2005. Finally, a plan was neatly wrapped up in one nice package, right?

Wrong. The anthrax letters catalyzed actions to deploy BioWatch, a system of expensive, time-consuming, and not entirely reliable air samplers in more than a dozen cities to warn of potential biological warfare agent exposure. It was hardly a promise of blanket protection, but rather a knee-jerk reaction to a poorly diagnosed challenge. The WMD Civil Support Team program floundered between 1998 and 2001, as

critics demanded to know how a 22-person military team, arriving with minimal equipment 4 hours or more after an event, would offer any real benefit to the local response in the face of a CBRN terrorist attack.³ Each state was to receive 1 team, without any analysis of where the 55 teams would optimally serve the Nation in terms of high and low threat areas.

The criticism was muted after 2001, although nothing had changed in the scope of the teams' ability, timeliness, or locations. In the fall of 2002, the Office of the Secretary of Defense for Policy (OSD[P]) initiated a "pick-up game" to develop a WMD exploitation task force designed to roll up Iraq's WMD program while the conflict unfolded, a completely new and untested military concept.⁴ In April 2003, OSD(P) recommended that DOD obligate more than a billion dollars in antiterrorism funds to emplace specific CB defense capabilities at 200 U.S. military installations and facilities, although the Services saw CBRN terrorism as a low priority threat to their bases.⁵

As the U.S.-led coalition tore through Iraq in 2003, it became clear that there was no active WMD program there, and indeed, only a few chemical munitions manufactured prior to 1991 were found. Despite the efforts of a specialized military unit expressly dedicated to exploiting WMD-related sites and a Central Intelligence Agency-sponsored Iraq Survey

Group, as David Kay would tell Congress later, "We were almost all wrong."

On the home front, the White House released a national biodefense strategy for homeland security, focusing nearly all its efforts on anthrax and smallpox threats and requiring years and billions of dollars to execute.⁶ U.S. Strategic Command's new combating WMD responsibilities, previously limited to nuclear strike topics, have yet to be deconflicted with U.S. Northern Command's homeland security responsibilities and U.S. Special Operations Command's counterterrorism responsibilities. Despite all indications that the nature of the unconventional weapons threat has significantly changed since 1995, few have changed their attitudes. Most still focus on both terrorist- and second-power nation-state WMD threats as if each attack was a massive Soviet-style chemical-filled Scud missile barrage against a European airbase. Nothing reflects this more than the *National Military Strategy to Combat Weapons of Mass Destruction* (NMS) and debates between the combating terrorism, homeland security, and combating WMD communities—three different groups addressing the common threat of CBRN hazards.

Too Many Players

The NMS identifies how the military is to carry out its responsibilities within the scope of the national strategy. It acknowledges that "the global WMD threat has grown more complex, diverse, and has broadened from a focus on state threats to one that includes both state and nonstate actors." It offers "an active strategy to counter transnational terror networks, rogue nations, and aggressive states that possess or are working to acquire WMD." It identifies eight mission areas that fall into the three major topics of nonproliferation, counterproliferation, and consequence management (see figure). That is to say, the NMS offers the traditional counterproliferation approach designed for a military battlefield. It does not fit when applied against a mission to counter and respond to the threat of overseas and domestic terrorist WMD incidents. Yet DOD officials still try to apply passive defense

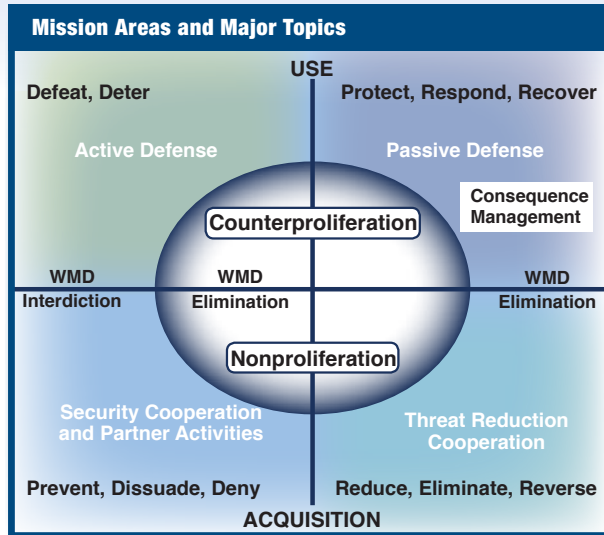
despite all indications that the unconventional weapons threat has significantly changed since 1995, few have changed their attitudes

equipment and concepts to antiterrorism and civil support missions, resulting in the confused and inefficient execution seen to date.

Combating WMD Military Mission Areas

The term *weapons of mass destruction* overwhelmingly floods the NMS, to our detriment. When politicians and military analysts talk about the threat of WMD in China, India, Iran, North Korea, and Pakistan, 9 times out of 10, what they really mean is *nuclear* weapons. When White House officials talked about Iraq's WMD program in 2002, they noted how "we don't want the smoking gun to be a mushroom cloud." When President Bush and Senator John Kerry were questioned about the issue of terrorist WMD incidents during the Presidential debate in 2004, both stressed the threat of nuclear terrorism. The Intelligence Community offers "WMD program" assessments that fall short in addressing CB weapons effectiveness and adversarial nations' intent to use these systems, while offering vague and unclear estimates on how terrorists might develop and employ improvised CBRN hazards against noncombatants. The term *WMD* unnecessarily complicates this strategy by equating CB weapons to nuclear weapons, and at the same time, equating terrorist capabilities with those of nation-states.

The debate between the antiterrorism community and the CBRN defense community has been particularly acrimonious since 2002. While there are few indications that any terrorist group (with the possible exception of al Qaeda) has any real capability or intent to use CBRN hazards against noncombatants, the antiterrorism community has pushed the term *CBRNE* (including the threat of high-yield *explosives*) in nearly all top defense policy and concepts issues. The 2002 and 2005 versions of the Universal Joint Task List saw an unprecedented change: the national task formerly known as "strategic deterrence of WMD" became "manage strategic deterrence of CBRNE weapons." This is not an isolated case. In many defense memos coming out of the Office of the Secretary of Defense (OSD) addressing both counterproliferation and



antiterrorism issues, the term *CBRNE* has been repeated, with its use often attributed to the influence of OSD(P) staffers.

This is not merely an issue of semantics. While the Bush administration's focus on the war on terror is well known, how the military addresses the terrorist CBRNE threat is very unlike how it addresses the threat of NBC weapons on the battlefield. These two missions require different concepts of operation, equipment, and specialists. While there is a jointly funded OSD program for the research and development of CBRN defense equipment and concepts, there is no joint program addressing the research and development of counterexplosives measures. Notwithstanding a joint publication on antiterrorism, each Service and combatant command and perhaps every installation commander has a unique antiterrorism concept of operations. Even antiterrorism experts admit that the overwhelming majority of priorities address conventional terrorism rather than CBRN terrorism. Yet the antiterrorism community has been far more successful in pushing its term *CBRNE*, continuing to confuse all involved on exactly who is in charge and what defense capabilities are required to address terrorist CBRN incidents and battlefield NBC weapons effects.

The antiterrorism community has recognized lately that the term *WMD* is unique as a descriptor for mass casualty events, and not all terrorist CBRN incidents will cause mass casualties. As a result, we have seen the term *weapons of mass effects* (WME) emerge

to reflect a two-fold concept. WME refers to those CBRNE weapons as well as other asymmetrical weapons that may rely more on disruptive impacts than destructive kinetic effects. This might include cyberthreats as well as other nonlethal, disruptive attacks on the public or government. Under this view, WMD are a subset of WME, even though they may create more casualties and destruction.⁷ What we are seeing here is a stubborn desire to meld the two concepts of combating terrorism and combating WMD together—by force if necessary—even though the fit is not perfect.

Over the past 3 years, the antiterrorism community has been trying to craft a national security Presidential directive for combating terrorism that identifies Federal Government responsibilities within the context of the White House's *National Strategy for Combating Terrorism*, but continued infighting has prevented the smooth formation of such a document. Developing the interagency roles for the Defense Department is increasingly important in combating both terrorism and WMD. In the meantime, combatant commands are trying to figure out

whether addressing the threat of terrorist WMD is a responsibility of the combating terrorism staff or the combating WMD staff or both. It has been suggested that an annex for combating terrorist WMD will become part of combating terrorism *and* combating WMD plans, dividing responsibilities for specific functions between the two.

People tend to focus on the technical nature of CBRN hazards and the need for specialized equipment and training, when instead they should

understand that the operational requirements under which military units, specialized units supporting emergency responders, and antiterrorism planners operate require unique and focused capabilities. DOD would rather develop dual-use military units than expensive, single-focus response forces. As a result, Federal agencies argue over jurisdictions and resources, while state and local communities panic over the idea that al Qaeda terrorists are walking across the U.S. border with nuclear

developing the interagency roles for the Defense Department is increasingly important in combating both terrorism and WMD

weapons and dirty bombs strapped to their backs. Instead of arguing about terminology and concepts, we should accept the fact that each community has a distinct, tailored mission, specific funding limitations, and different policies that guide its efforts (see table).

Instead of developing different but complementary concepts and equipment, each community is trying to execute multiple missions with the same set of generic equipment. The Department of Homeland Security, for example, executes the BioWatch program by doling out air monitors and detection kits to major cities as if it were a military division on the battlefield. Is it feasible to monitor the air for biological weapons agents across the Nation for the next decade? The Department of Defense wants to develop CBRN defense equipment that addresses both military requirements and domestic response missions by adopting guidelines from the Occupational Safety and Health Administration and National Institute for Occupational Safety and Health. Is it reasonable to expect warfighters to be held to occupational safety health standards on the battlefield? Military installations are receiving expensive, complex CB defense equipment meant for a battlefield saturated with CB warfare agents, although they cannot afford to run the equipment throughout the year. Is it necessary for every installation to have the full capability of CBRN defense equipment like a military unit? Everyone argues over the equipment standards, concepts of operation, and who is in charge of developing and executing the plans because, to them, it is all the same NBC defense “stuff.” Something must change.

Appreciating Mission Uniqueness

First, understanding that there are three distinct scenarios with fundamentally different threats is key to ensuring that U.S. forces can execute all three mission areas (see table). Unless Russia or China starts another Cold War with the United States, nuclear weapons remain the only real WMD threat. Any other nation using chemical or biological weapons cannot hope to develop, stockpile, and use the quantities of CB warfare agents against U.S. forces necessary to create mass casualties (unless noncombatants are targeted), given modern counterproliferation strategies and advanced protective equipment.

Similarly, terrorists (in particular those with political agendas) do not have catastrophic dreams of killing millions of U.S.

citizens and simultaneously attacking multiple cities with massive amounts of anthrax and smallpox. It is much more likely that they will execute small-scale individual attacks using less toxic (but more available) industrial chemicals, commercial radioactive material, or homegrown toxins to kill a handful of individuals while panicking thousands. And certainly dirty bombs are not the same as improvised nuclear devices, as much as people fail to distinguish between them. We must either change or lose the WMD label.

Also, we should understand that there are differing users and requirements for the three military mission areas. Military CB defense equipment is expensive and designed to be used by specialists in high-threat situations during relatively limited periods of engagement, where one has a good idea of where the enemy is and what he has in the way of agents and delivery systems. Military commanders expect the whole range of equipment (detectors, protective gear, medical countermeasures, decontaminants) to diminish the impact of CB weapons and ensure the success of the mission. The equipment and concepts of operation are developed to provide a minimal to moderate level of protection to the troops, while emphasizing the ability to complete the mission. Antiterrorism efforts at

a military installation must continue throughout the year, addressing protection of non-combatants and combatants alike. Because antiterrorism funding is limited, installation commanders must address the more probable (conventional) threats first. Given shortages of trained personnel, limited funding, and large noncombatant populations, it may be that an installation can only afford manual detectors and protective equipment for its on-base responders. Concepts such as “shelter-in-place” and evacuation may be the desired protection for the general population instead of issuing masks and medical countermeasures to everyone. That is basic risk management.

Units that might deploy to a national security event or respond to a no-notice terrorist incident—the WMD Civil Support Teams, Marine Corps’ Chemical-Biological Incident Response Force, the Army’s 22nd Support Command (CBRNE), and other units—need a blend of military and civilian equipment. They assist in the analysis of unknown supertoxic materials and recommend actions, while supporting first responders who must work under stringent occupational safety standards. Yet they also have wartime missions to support the combatant commands in the areas of CBRN sample analysis, WMD elimination, and consequence

Comparison of Passive Defense, Antiterrorism, and Civil Support			
Issues	Passive Defense	Antiterrorism	Civil Support
Who is in charge of developing defense policy?	Spec. Asst. for Chemical and Biological Defense and Chemical Demilitarization Programs; Asst. Sec. of Def. for Humanitarian Affairs; Dep. Undersec. of Def. for Technology Security Policy and Counter Proliferation	Asst. Sec. of Def. for Special Operations/Low-Intensity Conflict; Asst. Sec. of Def. for Homeland Defense	Asst. Sec. of Def. for Special Operations/Low-Intensity Conflict; Asst. Sec. of Def. for Homeland Defense
What is the threat?	NBC weapons affecting a large area of the battlefield	Improvised CBRN hazards affecting a small area within a military base or facility	Improvised CBRN hazards affecting a small area within an urban center
Who is the target?	Servicemembers	Servicemembers and untrained civilians	Civilians and emergency responders
What is the mission?	Ensure that military personnel survive and sustain combat operations in a hazardous environment	Reduce the vulnerability of individuals and critical infrastructure under the commander’s scope	Protect public health and safety, restore essential government services, and provide emergency relief
When and where is the attack?	On a battlefield in all conditions, during military combat operations	At military bases across the Nation	In cities across the Nation
What is the allowable risk for CBRN exposure?	High risk; emphasis on mission over long-term health and safety	Moderate risk to noncombatants, very low risk for very important persons	Very low to emergency responders
What equipment is used by the responders?	Military equipment designed for acute exposure	Mix of specialized military equipment and standard equipment	National Institute for Occupational Safety and Health specification, protects against long-term chronic exposure
Who funds the purchase of equipment?	Office of the Secretary of Defense through the Department of Defense Chemical, Biological Defense Program	Services and installation commanders	Office of the Secretary of Defense, National Guard Bureau, and Services (depending on the particular response)

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management. All three communities have these different parameters and missions, but the debate returns to policy (who is in control) and money (who is paying for it).

Because of a 1994 public law intended to force the Services to develop and procure joint CB defense equipment for warfighting purposes, many believe that one agency should attempt to control all CBRN defense acquisition, requirements, concepts, and policy. It is not that simple. DOD should develop technologies and concepts that are complementary, but it is unrealistic to expect its CB Defense Program to fund and equip everyone for every mission, when it does not adequately fund the total warfighting requirements (two nearly simultaneous major combat operations) today. The law needs to be changed to allow the Services to leverage DOD research but to procure their own antiterrorism and civil support CBRN defense equipment.

Agreeing on Terms

Much of the DOD CB defense community is under the mistaken impression that CBRN defense is the same as passive defense and that consequence management only means military support for the Federal response to CBRN incidents. That is no longer true, given the unique demands of terrorist CBRN incident response and expectations of military support for Federal disaster relief and non-CBRN incident response. Similarly, equating WMD to solely NBC weapons is no longer logical, given that other capabilities, such as directed-energy weapons, nanotechnologies, biotechnologies, and high-yield explosives, can cause mass casualties in a single event. Technically speaking, the Air Force GBU-43/B Massive Ordnance Air Blast Bomb qualifies as a “weapon of mass destruction” with its 18,700 pounds of high explosive, when one considers that the initial United Nations definition of WMD in 1948 included all weapons systems that might equate to the destructive power of a nuclear bomb. We need new terminology to make better decisions.

CBRN defense should be used as a general term applying to those defensive measures applied to counter the effects of CBRN hazards (including NBC weapons effects, toxic inhalation hazards, biological organisms of operational significance, and radioactive matter) that may be used by adversarial nations or nonstate actors against military forces or civilians, not necessarily in quantities that could cause mass casualties.

This would reflect the reality of developing countermeasures to terrorist CBRN hazards as well as military weapons systems. We ought to retain the term *NBC defense* (or *passive defense*) to discuss those specific actions required for forces to operate in a battlefield environment where the adversary is using weapons characterized by their capability to produce mass casualties through nuclear, biological, or chemical means. We need to acknowledge that military NBC weapons are a unique and more deadly threat than terrorist CBRN hazards. And we ought to at least change the term *WMD* to reflect what the term *mass casualties* really means and understand that other technologies, such as directed energy, nanotechnology, and certain high-yield explosives, can cause mass casualties. *WMD* should not be limited to the definition of “CBRN weapons and their means of delivery.” Similarly, politicians and military analysts should not use the term when all they really mean to address is a nuclear weapons issue.

The mid-to-late 1990s saw the distinct intersection of an evolving threat, military technology innovations, and the opportunity to change concepts of operation in the realm of chemical, biological, radiological, and nuclear defense. This nexus of opportunity came unnoticed and quietly within the military community and climaxed in 2002, but the wrong analyses were promulgated and the wrong conclusions were drawn. The term *weapons of mass destruction* is no longer useful for developing concepts and materiel specific to combat operations, force protection, or homeland security. It has become a nebulous political phrase designed more for stimulating emotion than dialogue. We may not be able to rid ourselves of the term, but we must begin using it in a way that is not constrained by decades-old concepts and a limited set of technologies.

While people claim that combating weapons of mass destruction is a top defense priority, the focus is nearly uniformly on the nuclear missile threat and not on the lesser threat of tactical chemical/biological warfare. As

a result, only a small community, primarily acquisition focused, is actively addressing CBRN defense issues. These individuals are particularly susceptible to using a passive defense “hammer” on every CBRN defense “nail”—and that approach is not working. The public expects the Federal Government to protect it from CBRN terrorism and the troops from nuclear, biological, and chemical weapons. This requires rational analysis and distinct courses of action that complement each other, rather than one general approach that attempts to be a multipurpose tool for all. **JFQ**

NOTES

¹ Secretary of Defense Les Aspin announced the Defense Counterproliferation Initiative in December 1993, which eventually resulted in the formal Department of Defense (DOD) Directive 2060.2, “Department of Defense Counterproliferation (CP) Initiative,” dated July 9, 1996, establishing DOD roles and responsibilities.

² See DOD Report to Congress, “Domestic Preparedness Program in the Defense Against Weapons of Mass Destruction,” May 1, 1997, available at <www.defenselink.mil/pubs/domestic/>.

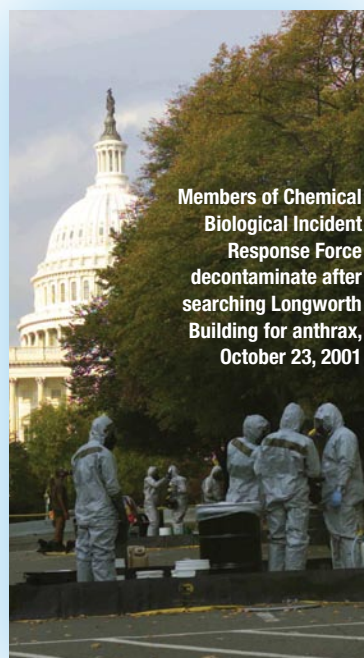
³ See U.S. General Accounting Office, Testimony before the Subcommittee on National Security, Veterans’ Affairs, and International Relations, Committee on Government Reform, House of Representatives, “Combating Terrorism: Use of National Guard Is Unclear,” NSIAD-99-184, June 23, 1999, available at <www.gao.gov/archive/1999/ns99184t.pdf>.

⁴ See remarks by Paul D. Wolfowitz at the National Defense University, May 13, 2003, available at <www.defenselink.mil/speeches/2003/sp20030513-depsecdef0203.html>.

⁵ Project Guardian was to establish CB defense capabilities at 200 installations between 2004 and 2009, beginning with 15 in 2004 and ramping up to 50 in 2009. By January 2006, the project had completed fielding and training efforts at only one base. In 2006, the project was being drastically reduced and revamped due to its lack of successful implementation and other priorities of the Office of the Secretary of Defense.

⁶ The White House, “Bio-defense for the 21st Century,” April 28, 2004, available at <www.whitehouse.gov/homeland/20040430.html>.

⁷ Department of Defense, Capstone Concept for Joint Operations, August 2005.



Members of Chemical Biological Incident Response Force decontaminate after searching Longworth Building for anthrax, October 23, 2001

U.S. Marine Corps (Bryant V. Cox)