CHEMICAL, BIOLOGICAL
AND NUCLEAR TERRORISM/WARFARE
A BIBLIOGRAPHY

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Abstract: The United States Government has identified of highest priority the development of effective capabilities for preventing and managing the consequences of terrorists use of chemical, biological, radiological, nuclear and high-yield explosive (CBRNE) materials and weapons on the American homeland. The Department of Defense (DOD) and Army both have a significant role in this effort. This paper will look at those roles and focus on the Army's ability to support the Homeland Security (HLS) CBRNE terrorist threat in the areas of agent sampling, detection, identification, and decontamination operations. Specifically, it will address the Reserve Components (RC) capability for responding to an incident and demonstrate the value-added of Active Component (AC) forces. The conclusion is the RC cannot fulfill the Department of the Army's commitment to this important mission by itself; AC forces must assume a more prominent role to ensure an adequate DOD response in this critical area.

http://handle.dtic.mil/100.2/ADA388953
Accession Number: ADA388953


Abstract: The U.S. Public is capable of assimilating the facts regarding the threat of chemical and biological terrorism; however, the United States Government (USG) has failed to systematically inform its populace about this threat to their security.

Accession Number: ADA407502


Abstract: This report covers Man In Simulant Testing (MIST) of the following commercially available, Level C chemical protective suits: the Tyvec(trade name) Protective Wear(trade mark) suit (garage-type, for mechanics), the Kappler CPF(trade name) suit (model # 4T434), the TyChem(trade name) 9400 (style 94160) suit, the TyChem(trade name) SL (style 72150) suit, and the Tyvec(trade name) ProTech F suit. These suits are being considered by law enforcement agencies for use at scenes where chemical warfare agents have been used by terrorists. This testing examined how well the complete protective suit ensembles protect the wearer against vapor adsorption by the skin by exposing test participants wearing the suits to a chemical agent simulant (methyl salicylate) and measuring the Physiological Protective Dosage Factor (PPDF) the wearers received while performing a set of typical law enforcement activities. The results showed that the respective suits provided the wearers with the following average Overall PPDF:
standard police uniform - 2.0; Tyvec (trade name) - 4.0; CPF (trade name) 4 - 17.6; TyChem (trade name) 9400 - 16.5; TyChem (trade name) SL - 23.7; and the Tyvec (trade name) ProTech F - 41.8.


Abstract: Responding to chemical attack. In view of Iraq's stated intention of using chemical weapons in the Persian Gulf War, the Coalition forces must be prepared to respond. Iraq is capable of conducting such an attack. While the use of chemical weapons may not be militarily significant, the political effect of the use and the response to it may be very significant. Responses including the use of chemical and nuclear weapons are assessed in terms of their legality, political cost, and military effectiveness and found unacceptable. Reliance on diplomatic protests and on post-war criminal sanctions are judged ineffective. A response in the form of increased conventional attack on the Iraqi chemical infrastructure is recommended because that response will preserve the present Coalition, effectively counter the chemical attack, contribute to regional stability, and enhance the reputation of the United States for lawfulness and dependability.

Accession Number: ADA236609


Abstract: Since the terrorist attacks on September 11, 2001, the threat of a biological or chemical terrorist attack on our society has transformed from a distant unease to a major, looming concern. National, state and local organizations are trying to prepare themselves for a threat that is of terrifying consequences and yet ambiguous in how or if it will even present. This effort aimed to understand the cognitive demands faced by first responders to biological and chemical terrorist events. Data collection involved employing Cognitive Task Analysis (CTA) interviews with officials at the local and federal level, attending a conference outlining major research advances in this area, and collecting observations at regional bioterrorism exercises. This report describes the findings using the Advanced Team Decision Making model (Zsambok, Klein, Kyne and Klinger, 1992) as a framework for understanding the challenges teams face in rapidly building and developing their situational understanding in response to these events. The findings from this study are important leverage points for understanding current gaps in response preparedness and areas for future research and development.

Accession Number: ADA408914

Besosa, Miguel A. Role of the National Guard in Responding to Weapons of Mass Destruction (WMD) Attacks in the U.S.: Where Do We Stand. Maxwell Air Force Base, AL: Air University, Air Command and Staff College, April 2001. 58p.

Abstract: The potential for terrorists' use of weapons of mass destruction (WMD) threatens Americans every day. To many nations and groups, their only means to counter the United States (U.S.) is with nuclear, biological, or chemical weapons. According to most experts, terrorists use of WMD is no longer a question of 'if' they will be used, but 'when.' When domestic capabilities were found to be lacking in this regard, Congress enacted legislation, Public Law 104-201, and named the National Guard as the primary responder to domestic WMD events. It is evident gaps and shortfalls remain in the National Guard's (NG) ability to respond to domestic WMD attacks. The purpose of this paper is to examine the critical gaps and shortfalls encountered by the CSTs
since their activation, This is done by investigating any available materials concerning the NG involvement in the program, identifying the critical gaps and shortfalls encountered by the CSTs, and to coming up with recommendations to correct them. This paper examines current U.S. policy and strategy to counter terrorist uses of weapons of mass destruction. The second section will examine the CSTs infrastructure, the third section identifies and discusses the predominant gaps and shortfalls encounter by the teams. The final section details current shortfalls and recommendations to improve the overall CST capability.

http://handle.dtic.mil/100.2/ADA407098

Accession Number: ADA407098


Abstract: The possibility of a terrorist attack on the United States, utilizing a weapon of mass destruction (WMD) has increased significantly over the past decade. This paper analyzes the effects of a terrorist attack on the United States using a WMD with a biological agent. The paper addresses six major areas. First, it examines the feasibility of such an act. Second, it reviews health-related implications. Third, it examines the economic effects of such an occurrence in a large metropolitan area. Fourth, it identifies the response requirements needed to react to such a catastrophe. Fifth, it looks at the impact on civil structure and order. Finally, it identifies resources currently available to respond to a WMD attack and provides recommendations for systems still needing development and implementation in order to respond appropriately and effectively to this kind of terrorist activity.

Accession Number: ADA346005


Abstract: United States Military Forces continue to refine and modernize their capability to react to and operate in the presence of weapons of mass destruction (WMD), including nuclear, chemical, and biological weapons. While this threat remains substantial, effectively dealing with it on the modern battlefield remains problematic. On the contrary, the WMD threat to domestic population centers and their infrastructure is growing at an alarming rate. Furthermore, the ability of local governments and emergency responders to effectively deal with almost any use of nuclear, chemical, or biological weapons is virtually non-existent. This paper examines the menace of domestic WMD use and the resources available to recover from their use. Analysis concludes that the government, in particular the Department of Defense, should play a larger role in preparing state and city authorities for possible WMD use and recovery.

Accession Number: ADA327426


Abstract: Success in preventing, preparing for and responding to a terrorist attack in the United States involving conventional or non-conventional weapons of mass destruction (WMD) will depend upon the establishment and maintenance of a coordinated crisis and consequence management infrastructure. Emergency responders who arrive first on the scene, as well as those in the medical profession who provide interim treatment, must be adequately trained, equipped, and exercised to ensure their ability to effectively respond and conduct relief and recovery operations as part of a multi-agency team. The federal agencies recognize that the response to bioterrorism will be qualitatively different from a chemical event and will primarily involve the public health and medical communities. Events within the United States and against Americans abroad have demonstrated the need to enhance the nation's domestic preparedness
activities. The United States Congress and the President have recognized the need for federal programs to assist state and local jurisdictions in preparing for the threat of WMD terrorism.


Accession Number: PB2001104993


*Abstract:* This project defines the terrorist threat to use weapons of mass destruction in the United States. Several chemical and biological agents that could be used in the attack are described. Current statutes are researched to insure the legality of using the military in combating terrorism here in the United States. An examination of current legislation and security strategies reveals the growing concern senior leadership feels toward this issue. Finally, the National Defense Panel recommendations using the National Guard and Army Reserve in consequence management are analyzed. The analysis confirms the appropriate element of the military to perform this mission should be the National Guard.

Accession Number: ADA346389


*Abstract:* This thesis demonstrates the use of Janus in Modeling Military Operations Other Than War, MOOTW. Janus has many uses throughout the United States military. Lately, MOOTW have become a major percentage of the U.S. military's efforts. Using Janus to model these operations can help predict casualties, determine if new pieces of equipment make a difference in the operation, and help evaluate "what if s" in operations. More importantly, conducting a simulation before carrying out an actual exercise saves money and people's time and effort. The threat of a terrorist chemical attack is a very likely event in this day and age as demonstrated by the 1995 chemical attack in a Japanese subway. Current U.S. policy has allocated certain resources to assist local governments in the event of an emergency. Unfortunately, these assets can not immediately respond to a chemical crisis. Time waiting for these assets to arrive must be spent wisely to save lives. Local governments do not all have the same capabilities available to respond to a chemical attack. Using a high resolution combat model such as Janus at the local level will help determine assets that will save lives and money.

http://handle.dtic.mil/100.2/ADA365438

Accession Number: ADA365438


*Abstract:* The use of Weapons of Mass Destruction (WMD) by terrorists within the United States presents a clear and present danger to national security. In virtually every region of the world, nation states are arming themselves with WMD. Coupled to the rising spread of WMD is the growing list of nations sponsoring worldwide terrorism. The proliferating nature of this combined threat of WMD and terrorism is changing the paradigm of asymmetrical warfare as we approach the new millennium. Reviewing the U.S. Government responses to terrorism and WMD reveals a fragmented framework that addresses these threats separately, without one federal agency in the lead. The world witnessed this new paradigm of asymmetrical attack when the Japanese religious cult, Aum Shinrikyo or Supreme Truth, attacked the Tokyo subway system using the chemical nerve agent Sarin on 20 March 1995. The Department of Defense should take action and assign this critical mission to a Joint WMD response force to support the federal, state and local crisis response framework.

Abstract: After more than a generation of negotiations, the Conference on Disarmament (CD) has completed a draft treaty banning the development, production, stockpiling, transfer, and use of chemical weapons (CW). Unfortunately, despite all the successful work put into the CWC it will not, and cannot assure a permanent halt to chemical warfare. This paper analyzes the merits of having a CWC treaty to thwart chemical weapons proliferation. It will offer a way to strengthen the verification regime. Finally, from this analysis, the paper reaches conclusions concerning what CW policy best supports U.S. national interests.


Abstract: Executive Order No. 1298 signed by President Clinton on November 14, 1994 declared a national emergency with respect to the unusual and extraordinary threat that proliferation of weapons of mass destruction (those weapons categorized as nuclear, chemical or biological) poses to the national security, foreign policy, and economy of the United States. In the wake of the Cold War, a new world disorder seems to be emerging wherein the legitimacy of many states is being challenged from within by increasing non-state calls for self determination from the likes of religious cults, hate groups, isolationist movements, ethnic groups, and revivalist movements. These movements often prey on the insecurities of the population, offering to fill psychological, social, political, or religious security needs of those who would join them. Religious oriented groups appear to share a common ideology which rejects existing social, economic, and political structure demanding a drastic revision of the world - a world where they become the authoritarian, dominant influence. These are the Post-Modern Terrorists who possess a ripeness to threaten use of weapons of mass destruction. This study presents an argument suggesting that terrorist groups operating under the veneer of religion are truly the most likely candidates to threaten use of mass destruction in a mass casualty causing terrorist act.


Abstract: The threat of terrorism has encroached our national borders and has created a heightened sense of vulnerability among many Americans. President Clinton has stated, Fighting terrorism is and will for a long time to come be one of the top priorities of the United States. Two acts passed in 1996 have strengthened our fight against terrorism, the Antiterrorism and Effective Death Penalty Act and the Defense Against Weapons of Mass Destruction (WMD) Act. The Defense Against WMD Act designated the Department of Defense the executive agent for coordination of assistance in responding to threats involving biological and chemical weapons. The focus of this research project will be to follow this trail and analyze DOD's course of action in meeting their obligation and assess the probability that DOD will maintain this function after the 1 October 1999 legislative mandate.

Abstract: The prospect of chemical, biological, radiological, and/or nuclear (CBRN) terrorism is recognized by the United States government as an acute security challenge. Particularly following the tragedy of September 11, 2001, but also for several years prior, senior U.S. officials and official government reports have underscored the likelihood, over time, of terrorist organizations coming into possession of such unconventional materials, and the prospect of their use against the United States homeland, U.S. forward-deployed forces, or U.S. friends and allies. Toward the end of the last century, this concern was heightened, among other events, by the Japanese cult Aum Shinrikyo’s 1995 use of sarin in the Tokyo subway. The combination of increasing availability of technology and expertise, a perceived mass-casualty motive structure for particular terrorist organizations, the impending end of a millennium, a spate of conventional attacks against U.S. assets - World Trade Center, 1993; Oklahoma City Federal Building, 1995; American embassies in Tanzania and Kenya, 1998; and the U.S.S. Cole, 2000 - and both the widespread suspicion of terrorists seeking CBRN weapons and the actual sub-national employment of a chemical agent all contributed to this general assessment. More recently, the prospective linkage between terrorist organizations and state actors with weapons of mass destruction programs has become an acute security concern. Indeed, this nexus is central to the logic of the emergent ‘Bush Doctrine’. As Secretary of Defense Donald Rumsfeld testified in May 2002, ‘we have to recognize that terrorist networks have relationships with terrorist states that have weapons of mass destruction, and that they inevitably are going to get their hands on them, and they would not hesitate one minute in using them. That’s the world we live in’.

http://handle.dtic.mil/100.2/ADA404213

Accession Number: ADA404213


Abstract: The President of the United States has declared a national emergency to deal with the potential specter of a chemical or biological attack against Americans, yet chemical and biological weapons have been used infrequently throughout history compared to conventional weapons. Leonard A. Cole in an article in the Scientific American uses the term ‘poison taboo’ to describe the abhorrence mankind feels toward biological weapons. The use of the word taboo is interesting and, according to Webster, implies something ‘forbidden to profane use... because of supposedly dangerous supernatural powers’. Throughout the ages, man has given biological and chemical weapons supernatural status, partly because of their nature. Does this help explain this apparent dichotomy between our fear and the lack of their use. Are chemical and biological weapons sufficiently morally repugnant today to inhibit their use in a world accustomed to graphic violence. Or, are they just becoming another tool in national arsenals and terrorist caches to be used to offset the awesome power of the United States. The answers to these questions have dramatic consequences for the security of our nation and present remarkable challenges as well as windows of opportunity. This essay explores the relevance of the poison taboo to the security of the United States today by looking at its historical development, at the mechanisms of terrorist restraint in the use of CB weapons, and at a blueprint for a national rhetoric to enhance its deterrent value.

Accession Number: ADA378219


Abstract: As the 20th century draws to a close, the United States has emerged as the world's only superpower. International terrorism is increasing. No other country possesses the wherewithal to challenge the United States on the conventional battlefield. For many countries
whose ambitions counter to the U.S.’ national interests, terrorism is an attractive option. Moreconcerting is the increasing availability of weapons of mass destruction to rogue nations and
radical terrorist organizations. They now pose a formidable threat. This paper discussed the
evolution of international terrorism and the frightening proliferation of nuclear, biological, and
chemical weapons. Furthermore it analyzes our national security and military strategy for
combating terrorism. This paper concludes that terrorism has the potential to catastrophically
impact on the American way of life. Therefore, counterterrorism must become a national security
priority for the 21st century.

http://handle.dtic.mil/100.2/ADA326915
Accession Number: ADA326915

Demaree, Richard. Protect and Defend: Adequacy of the Department of
Defense Role Prescribed in the Federal Response to a Chemical or
Biological Attack Against the Homeland. Fort Leavenworth, KS: Army
Command and Staff College, May 2002. 252p.
Abstract: President Bush’s Executive Order 13228 establishes within the Executive Office of the
President an Office of Homeland Security (OHS). The order directs the OHS to develop,
coordinate, and implement a national strategy to secure the United States from terrorist attacks.
One type of terrorist attack the United States may find itself responding to and recovering from is
one involving chemical or biological Weapons of Mass Effects. This study finds that the not if, but
when school of thought is no longer the view of the alarmist, but the realist. The Federal
Emergency Management Agency’s Federal Response Plan (FRP), which coordinates the
response of twenty-seven federal agencies and departments, inadequately addresses the role of
the Department of Defense. This study finds there are roles necessitated by a chemical or
biological terrorist attack against the homeland that are not prescribed to DOD in the FRP or in
the supporting response plans of the Environmental Protection Agency, Department of Health
and Human Services, or Federal Bureau of Investigation. Furthermore, this study finds some of
those roles are feasible, suitable, and acceptable for the military. Those roles include
chemical/biological protection, disease surveillance, epidemiological investigation, laboratory
support, veterinary services, mental health services, civil disturbance support, disease
containment, and coordination. This study recommends DOD resolve its dual use dilemma so
that it is feasible for military assets to support the Lead Federal Agency while remaining ready to
fight and win the nations wars.

http://handle.dtic.mil/100.2/ADA406640
Accession Number: ADA406640

Dickinson, Lansing E. Military Role in Countering Terrorist Use of Weapons
of Mass Destruction. Maxwell Air Force Base, AL: Air University, Air War
College, April 1999. 74p.
Abstract: Terrorist use of weapons of mass destruction threatens Americans and our armed
forces every day. To many nations and groups, their only means to counter the United States is
with nuclear, biological, or chemical weapons. The terrorist use of weapons of mass destruction is
no longer a question of “if” they will be used, but a question of “when” they will be used. This
paper looks at the US military capability to counter terrorist use of weapons of mass destruction.
It describes the terrorist threat to US forces and motives and reasons terrorists would use these
types of weapons. Our current national policy, strategy and doctrine highlight the problem, but
show a need to improve interagency coordination and cooperation. On the military level,
combating the threat is an integral part of our strategy but needs increased emphasis at the
planning level. Capabilities exist to deter or counter the threat; protect our forces; and sustain and
operate after an NBC attack. But countering a terrorist threat presents unique challenges to future
leaders and requires improvements in intelligence, equipment, training and education.

http://handle.dtic.mil/100.2/ADA395120

Abstract: Information discovered as a result of the current war on terrorism suggests a terrorist-led attack on the U.S. homeland involving weapons of mass destruction (WMD) remains a very real possibility. Some believe the U.S. faces its greatest WMD threat since the 1962 Cuban Missile Crisis, but many discount the effect deterrence can have on terrorist groups. Deterrence, however, is an attractive option in the costs to implement a deterrence-based strategy are minimal when compared to defending the entire homeland or defeating all elements of a threatening terrorist organization. Little research, however, has been done to evaluate the effectiveness deterrence can have on a group bent on harming the U.S. with WMD.


Abstract: The Department of Defense is also in the process of reevaluating its contribution to homeland security in the aftermath of the September 11 attacks. Of particular concern is the DoD plan for assisting civilian authorities in consequence management - the measures taken to protect public health, safety, and the environment, to restore essential government services, and to provide emergency relief to governments businesses and individuals affected by the consequences of terrorism. A significant DoD contribution to the consequence management aspect of homeland security has been the development of the National Guard Weapons of Mass Destruction - Civil Support Team (WMD-CST), a new type of unit designed to provide civilian authorities military support in response to WMD attacks involving the use of nuclear, biological, chemical, or radiological (NBCR) weapons. The development of the WMD-CST concept has raised considerable debate over the merits of the new organization. Previous authors argued that the WMD-CST is incapable of providing timely support to local authorities. Others take the criticism of the WMD-CST a step further, calling into question the ability of the Department of Defense to provide personnel sufficiently trained to provide meaningful support to civilian first responders. Positive reviews emphasized the WMD-CSTs’ ability to respond rapidly to events, because of their ability to operate under Title 32 or Title 10 authority.


Abstract: The presentation of viewgraphs describes the U.S. Army Soldier Biological Chemical Command and the improvement of its chemical weapons response program. This program is designed to improve response posture for acts of terrorism using chemical weapons. It focuses on high priority responder needs using a think tank approach, and by conducting technical and operational investigations with associated exercises to insure valid solutions.

**Abstract:** This paper analyzes recent research and advances in biological and biological/chemical technology. It examines the imposing threat and significance to the Biological Weapons Convention of 1972. It then discusses how biological and biological/chemical weapons effects the operational level and operational planning. This paper offers projections, opinion on deficiencies/risk, and suggests alternatives. Finally, conclusions are presented offering challenges and concerns.

**Accession Number:** ADA240460


**Abstract:** This thesis examines Department of Defense involvement in U.S. preparedness to manage the consequences of a nuclear, radiological, biological, or chemical terrorist attack against its cities. It analyzes the establishment and implementation of the Defense Against Weapons of Mass Destruction Act of 1996 which directed the Department of Defense to assist in the training of state and local emergency response agencies involved in consequence management activities. The historical analysis focuses on the proliferation of weapons of mass destruction since the dissolution of the Soviet Union, major terrorist incidents since 1993, international standards, and legislative and executive efforts undertaken to combat terrorism up to 1996. The $150 million Nunn Lugar Domenici amendment to the FY-97 National Defense Authorization Bill is examined in detail from introduction on the Senate floor to eventual passage and enactment. Problems and policy issues associated with resourcing and implementing the resulting Domestic Preparedness Program are treated. Although the DoD was given responsibility for implementing city training, an interagency effort ensued involving the Public Health Service, Environmental Protection Agency, Federal Bureau of Investigation, Federal Emergency Management Agency, Department of Energy, and others. Potential weaknesses may materialize due to several characteristics of the Domestic Preparedness Program, including its novelty and uniqueness, the unorthodox legislative process by which it was established, and its complex organizational structure and temporary nature.

http://handle.dtic.mil/100.2/ADA341405

**Accession Number:** ADA341405


**Abstract:** This report concerns chemical and biological arms control technologies and their applications to Homeland Defense.

http://handle.dtic.mil/100.2/ADA394560

**Accession Number:** ADA394560


**Abstract:** The author examines the changing nature of terrorism. In comparison to professional, terrorists pursuing specific political or ideological objectives, today’s amateurs often act from
religious or racial convictions. Their objective may be to kill large numbers of people. They are less predictable and, therefore, more difficult to apprehend before the incident occurs, and have lethal devices ranging from the relatively simple fertilizer bomb to biologically-altered viruses. Since the United States will remain an attractive target, we need to understand and prepare for this new kind of terrorism.

Accession Number: ADA283936


Abstract: The purpose of this paper is to answer the following question. What factors should senior United States government officials be familiar with, and take into consideration, when making time-constrained decisions regarding the type and extent of a United States government response to a Chemical, Biological, Radiological or Nuclear (CBRN) event overseas? In determining these factors, the author researched salient books, periodicals, published and unpublished papers, and credible Internet sites. The author also conducted telephonic interviews and electronic mail exchanges with government officials in the fields of Weapons of Mass Destruction terrorism and Consequence Management. The author argues that the United States has developed significant CBRN response forces, but is hamstrung in projecting a timely response to an event overseas by a fragmented decision-making process at the strategic level. The author also proposes that national interests drive the decision to respond to a foreign nation’s request for assistance, and that interests are based predominantly on political and economic concerns.

http://handle.dtic.mil/100.2/ADA409304
Accession Number: ADA409304


Abstract: The millennium began with the United States more concerned than ever about the threat of terrorism in “Hometown USA”. The Reserve Component (RC) has played a major role in the defense of this nation for more than a quarter of a century and will have an extensive role in defending against the terrorist threat. This report will examine how the Army National Guard (ARNG) and the Army Reserve (USAR) have stepped forward to assume their roles in national defense. The ARNG and the USAR were once referred to as weekend warriors with little credibility with the Active Component (AC). They were seen as untrained and unfit for modern warfare. However, over the past twenty-five years, the myth has faded. The RC has proven time and time again, deployment after deployment, that it can hold its own with the AC. The history of the ARNG and the USAR is briefly discussed in order to give a clearer understanding and appreciation of their contributions to national defense. A brief review of how the missions have evolved since the seventeenth century, and prior to the second amendment to the constitution that allowed states to establish the National Guard, will also be discussed. Evolution of the ARNG and the USAR, and their missions over the last decade has fully integrated the Army into one Army. The chief of staff of the Army said, ‘We are The Army totally integrated into oneness of purpose - no longer the Total Army, no longer The One Army, The Army, One Army’. This paper will detail the ARNG and the USAR roles in weapons of mass destruction (WMD) consequence management of homeland defense, and will briefly examine the training, equipment, and the ARNG response role of chemical and biological threats.

http://handle.dtic.mil/100.2/ADA391860
Accession Number ADA391860

*Abstract:* In response to the growing threat of terrorism with chemical, biological and nuclear weapons, the United States government has developed a national concept of operations for responding to their use. This concept of operations consists of multiple agencies at the local, state and federal levels reacting to an incident with no clear operational organization for efficient command and control and effective response. A step in the right direction to resolve this potentially critical problem is to develop an organization under a single commander with the responsibility for domestic preparedness, response, and consequence management. Only with the proper command organization and subsequent unity of effort can we ensure the most effective employment of the many forces and resources currently tasked with homeland defense against and response to weapons of mass destruction.

http://handle.dtic.mil/100.2/ADA370625
Accession Number: ADA37065


*Abstract:* Weapons of Mass Destruction (WMD) in the hands of non-state actors are a major threat to U.S. security. Efforts to counter the threat are disjointed. Strategy remains overly reliant upon non-proliferation without adequately implementing possible preemptive and response alternatives. Deterrence is failing and operational capabilities to respond are hampered by bureaucratic complexity and dogmatic institutional nearsighted economics. Hence, America is vulnerable and at risk. This paper reviews the WMD threat and examines policy and strategy weaknesses. The paper then discusses U.S. response strategies and highlights current methods for establishing command and control Headquarters. Finally, it recommends an enhanced response strategy by creating a Standing Joint Task Force Headquarters to address terrorist induced WMD incident consequences.

http://handle.dtic.mil/100.2/ADA344342
Accession Number: ADA344342


*Abstract:* The twentieth century has seen an unprecedented explosion in the manufacture and use of armaments. This has been accompanied by steady increases in the number, length and lethality of conflicts. Both trends have been accelerating since the end of World War II, especially with regard to the so-called Third World. The focus of most arms control efforts has been on nuclear, chemical and biological weapons, with some secondary concern in the last two decades over sophisticated major conventional armaments. Virtually unnoticed have been the massive quantities of simple, inexpensive arms produced all over the globe and traded in channels overt, covert, and illegal. These items remain useful for many years. Equipment such as mortars and rifles find application in war after war, while ammunition keeps its explosive nature until it detonates. So the world, especially the Third World, has an ever growing sea of cheap arms, the old stuff still dangerous, more added every day. Review of selected conflicts, including Cambodia and Afghanistan, illustrates the depth of the trouble we are in and suggests some possible future directions in order to avoid drowning in this lethal sea.

Accession Number: ADA280611

King, William E. **Nullifying the Effectiveness of Weapons of Mass Destruction (NBC) Through Integrated Land, Air, and Space-Based Sensors**

Abstract: Despite the best-combined efforts of the world's five major powers (United States, Great Britain, France, Russia, and China), third world countries, rogue radical groups, and potential terrorist organizations continue their alarming proliferation of weapons of mass destruction (WMD) technologies. According to Secretary of State Madeleine Albright, proliferation of weapons of mass destruction are "the most overriding security interest of our time." Supporting her statement, in recent testimony before the Senate Intelligence Committee, the directors of the Central Intelligence Agency and the Defense Intelligence Agency agreed that the proliferation of weapons of mass destruction is the biggest threat to national security. LTG Patrick M. Hughes, director of the DIA, explained "because chemical and biological weapons are generally easier to develop, hide, and employ than nuclear weapons," they will be "more widely proliferated and have a higher probability of being used over the next two decades."

http://handle.dtic.mil/100.2/ADA366273

Accession Number: ADA366273


Abstract: This research paper analyzes the current chemical and biological threat faced by the United States from Third World Countries. It explores the impact this threat brings on military planning and execution and recommends avenues that the United States should take to hedge against it. A historical background of chemical and biological weapons use is presented with emphasis on the magnitude and extent of this problem. The legal and moral frameworks are examined with focus on the capabilities, limitations, intentions, and preparedness of the United States and Third World Countries. The thesis presented is that the United States' posture in combating chemical and biological weapons is severely compromised. A lack of governmental commitment, inadequate technologies, lack of success in arms control negotiations, and an inability to control proliferation, compounds the problem. Although no U.S. forces were exposed to chemical or biological weapons in our latest conflict with Iraq, the future does not hold the promise that we will be as lucky the next time. And there will be a next time.

Accession Number: ADA279591


Abstract: This report is a condensed and unclassified summary of a study that assesses the threat posed by the proliferation of chemical munitions and delivery systems among Third World nations. The objective was to describe the chemical environment and potential CW threat from Third World areas, assess the capabilities of U.S. military forces to cope with such threats, and explore the possibility that terrorists may employ chemical munitions in support of their activities.

Accession Number: ADA182729


Abstract: Specific items addressed are past and future terrorism concerns, including terrorist incidents, problems of hostages, terrorist arsenals, plausibility of mass destruction terrorism, conventional weapons, unconventional weapons, bacteriological warfare as a terrorist weapon, chemical warfare agents and technological challenges ahead.

Accession Number: ADA114399

Abstract: The Mass Casualty Decontamination Research Team (MCDRT) collectively addressed the issue of how to effectively decontaminate large numbers of people. Emphasis was placed on decontamination methods that could be performed with equipment and expertise readily available to most responder jurisdictions. The general principles identified to guide emergency responder policies, procedures, and actions after a chemical agent incident were: Expect at least a 5:1 ratio of unaffected-to-affected casualties; Decontaminate victims as soon as possible; Disrobing is decontamination; head to toe, more removal is better; Generally, water flushing is the best mass decontamination method; After a known exposure to liquid chemical agent, emergency responders should be decontaminated as soon as possible to avoid serious effects.

http://handle.dtic.mil/100.2/ADA387193

Accession Number: ADA387193


Abstract: The United States must improve its ability to defend its citizens and property against potential terrorist or 'rogue state' attack with chemical weapons. As a military weapon, gas has been effective at causing casualties but has never been a 'war winner'. History shows that chemical weapons are most effective when used against an unprepared enemy that cannot retaliate in kind. The 1995 nerve agent attack in Tokyo was a 'wake up call' for the United States to come to grips with the serious asymmetric threat from either rogue states or terrorists who could launch a devastating chemical attack on our homeland. This paper will trace the military history of chemical weapons and assess programs necessary to prevent, protect, and respond to a chemical WMD attack on the United States of America.

http://handle.dtic.mil/100.2/ADA390526

Accession Number: ADA390526


Abstract: This thesis examines terrorist acts involving the use of weapons of mass destruction (WMD) against unsuspecting civilians by the Aum Shinrikyo and Rajneesh cults. The proliferation of WMD (i.e. nuclear, chemical, and biological weapons) has created a concern that terrorists might use WMD. Despite obvious signs, these groups were not identified as terrorists until after they committed terrorist attacks. This thesis identifies common characteristics of terrorists that have used WMD in the past and generates indicators of non-state actors that might commit WMD terrorism in the future.

Accession Number: ADA341438


Abstract: This paper addresses the threat posed by weapons of mass destruction as it is understood following the events of 11 September 2001 and the anthrax attacks directed at congressional and media offices in the weeks that followed. The various types of risks are explored with emphasis on chemical agents, biological pathogens, and radiological weapons. Then, the planned governmental response is evaluated with concentration on the role of the Department of Defense and the Armed Forces with a particular focus on the Reserve
Components. Based on this analysis, conclusions and recommendations are offered in the context of better ensuring that the planned response to possible employment of weapons of mass destruction is adequate to meet the threat.


Abstract: The horrific terrorist attacks of September 11, 2001 on the U.S. homeland highlighted the threat that terrorism poses to U.S. national security. DoD operates globally a large network of Intelligence, Surveillance, and Reconnaissance (ISR) assets which could be brought to bear in the effort to combat terrorism. The geographic Commander's-in-Chief (CINCs) set the priorities for the intelligence networks in their Areas of Responsibility (AORs) according to their interpretation of the strategic guidance from the National Command Authority (NCA). A key tenet of the new strategic setting is the grave threat to national security posed by terrorism, potentially using Chemical, Biological, Radiological, Nuclear, or Enhanced High Explosive (CBRNE) weapons. This fact, coupled with the new strategic mandate that sets defense of the homeland as the highest priority for the U.S. military, dictates that each of the geographic CINCs set combating terrorist use of CBRNE weapons as the highest priority for their intelligence networks. The success or failure of this operational intelligence effort could have major strategic effects.


Abstract: Weapons of Mass Destruction (WMD) and Force Protection are two critical topics rapidly gaining attention throughout the world. An increasing recognition of the vulnerability of our citizens and of our military forces due to recent terrorist attacks has caused the President of the United States and Congress to take several actions to improve preparedness. This paper examines what a minimum basic response capability for all military, police and security forces should be to ensure at least some chance for their own survival and possible early warning and protection of others in the case of a domestic WMD incident. The capabilities of awareness, protection and detection are studied including the aspects of training and equipment. The paper shows that the WMD threat to America is significant and increasing and makes several recommendations including that all first responders receive training to increase their awareness and understanding of WMD, the adoption nationally of a minimum personal protection equipment standard for first responders to accomplish EPA level C protection, and the development of a WMD response capability modeled on national level asset capability for all cities, counties, or states.

McCoy, Tom. *Issues in Civilian Disaster Planning and Management For Incidents of Chemical and Biological Terrorism*. Fort Sam Houston, TX: Academy of Health Sciences, Army, December 1999. 81p.

Abstract: The proliferation of chemical and biological weapons has experienced a dramatic increase since the collapse of the former Soviet Union. Scientists from the biological and chemical weapons programs throughout the former eastern bloc have been courted by rogue nations and terrorist groups, either through economic necessity or shared political, cultural, or
religious ideology. As a result, the threat of a terrorist attack using chemical or biological weapons has increased dramatically. This leads many experts to concede that it's no longer a matter of if, but when. For almost fifty years, Cold War planning doctrine focused on a full-scale nuclear war with the Soviet Union. Although attempts to eliminate biological and chemical weapons did occur, their use was still restricted primarily to the battlefield against military targets. As a result, the United States civilian response plans failed to address these threats. With the widespread proliferation of these weapons and information about them, federal, state, and local authorities are rapidly developing plans to meet this new threat. The healthcare industry is particularly vulnerable for a number of reasons, among them are a lack of experience and training; reduction in national healthcare assets due to reforms; and denial of the threat and the role they would play in response to such an attack. Efforts so far have focused on first responders, with very little emphasis on the healthcare infrastructure that would ultimately treat and care for victims. This represents a serious flaw in the national domestic preparedness strategy that will require leaders in all fields to correct. This paper will address some of the shortcomings of current disaster plans and offer recommendations for local level response activities to consider in developing their contingency plans. It is critical that local efforts be strengthened, as they will be the first line of defense if such a terrorist attack were to occur.


Abstract: This analysis provides a set of alternatives, along with the associated advantages and disadvantages, for establishing an automated database related to biological and chemical warfare (BW/CW) defense. This analysis focuses upon the preliminary considerations involved in developing and operating a database--either a stand-alone database or one integrated with other existing databases, employing personnel for either Natick, other DoD facilities, a contractor facility, or a combination of any of the three to develop and maintain the database. Adequate computer resources for maintaining the database were found to be available at the Army Research and Development Center (ARDC), INFOCEN at the Air Force Aeronautical Systems Division Computer Center, and certain contractor facilities. The staffs at ARDC and at certain contractor facilities were determined to be available to develop and operate the database, to have technical expertise in the subject areas of interest, and to have established a proven capability in the development and operation of databases.


Abstract: The proliferation in quantity and quality of weapons of mass destruction serve as a threat of great consequence to U.S. operational forces. Operational options for action are explored within the national military strategy concepts of forward presence, deterrence, and crisis/regional contingency response. Three questions and associated issues related to operational art are posed for each concept: (1) what condition must be produced to achieve the strategic goal, (2) what events will most likely result in the desired condition, and (3) how should resources be applied to produce those events. The resulting analysis offers the following conclusions: (1) complementary efforts by all instruments of national power--political, diplomatic, economic, and military--are necessary; (2) knowledge, training, and equipment are the first line of defense; (3) persuasion as well as confrontation is necessary; (4) effective deterrence requires capability, credibility, and communication; and (5) training and weapons for retaliation-in-kind
remain the final alternative.

**Accesion Number: ADA250011**


**Abstract:** The proliferation of Weapons of Mass Destruction (WMDs)—nuclear, biological, and chemical—is occurring throughout the Third World. Desert Storm offers an excellent case study for assessing the various measures and operations which can be employed to protect U.S. forces against an adversary possessing a WMD capability. The elements of Desert Storm's successful strategy can be categorized in three broad approaches—deterrence, denial, and defense. All three approaches were necessary and synergetic. In the future, the ability to quickly deny or destroy an adversary's WMD capability will be increasingly important, due to the unacceptability of exposing forces to any type of NBC agent, the likelihood for increased uncertainty surrounding deterrent threats, and the diplomatic, political, and psychological dilemmas posed by an adversary's first use...Weapons of mass destruction, Desert Storm.

**Accesion Number: ADA264454**


**Abstract:** The report describes what nuclear, chemical, and biological weapons can do, analyzes the consequences of their spread for the United States and the world, and summarizes technical aspects of monitoring and controlling their production. The report also explains the array of policy tools that can be used to combat proliferation, identifying tradeoffs and choices that confront policymakers.

http://www.wws.princeton.edu/~ota/disk1/1993/9341_n.html


**Abstract:** The background paper explores the technical pathways by which states might acquire nuclear, chemical, and biological weapons and the systems to deliver them. It also assesses the level of effort, commitment, and resources required to mount such developments. The paper is a companion to the OTA report *Proliferation of Weapons of Mass Destruction: Assessing the Risks*, which describes what nuclear, chemical, and biological weapons can do and how they might be used. That report also analyzes the consequences of the spread of such weapons for the United States and the world, surveys the array of policy tools that can be used to combat proliferation, and identifies tradeoffs and choices that confront policymakers.

http://www.wws.princeton.edu/~ota/ns20/alpha_f.html


**Abstract:** The report deals with the Federal research and development effort in countering terrorism, and with the state of attempts to use technology to aid in detecting and preventing attempts to introduce explosives aboard aircraft. A review of relevant R&D programs in many agencies is provided. The report, the first produced by this assessment, gives an overview of Federal efforts to develop technical tools to aid in the battle against terrorism. It also provides a detailed discussion and analysis of technical aspects of research into explosives detectors, and gives the background of recent developments in the field. These are topics of great current
interest, particularly when applied to airport security. Further, the report also covers research into technologies of use in other areas of counterterrorism: protection against chemical and biological attacks, physical security, data dissemination, and incident response.

http://www.wws.princeton.edu/~ota/ns20/alpha_f.html

Accession Number: ADA360334


Abstract: Terrorism is not a new phenomenon, but it has become more prominent during the past two decades. Terrorist attacks have included not only political assassinations, but also large-scale attacks, often aimed at third parties, causing massive casualties. Two well-known examples are car bombings, employing hundreds of kilograms of high explosives, and attacks on commercial aircraft around the world. The U.S. Government and the American public became acutely aware of terrorism after the bombing of Pan American Flight 103 over Lockerbie, Scotland in December 1988. The recent war in the Persian Gulf heightened fears of renewed terrorist attacks on U.S. targets, both overseas and at home. In 1989, because of growing concern over terrorist threats, several Senate Committees requested that OTA study the role of technology in fighting terrorism and the Federal effort in promoting related research and development. The requesting Committees were: Governmental Affairs; Foreign Relations (Subcommittee on Terrorism, Narcotics, and International Operations); and Commerce, Science, and Transportation, together with its Subcommittee on Aviation. The Senate Select Committee on Intelligence also endorsed the study.

http://www.wws.princeton.edu/~ota/ns20/alpha_f.html

Accession Number: ADA360398


Abstract: Since the end of the Cold War asymmetric threats continue to usurp conventional battlefield challenges as a significant danger to US national interests. Weapons of mass destruction (WMD) pose the most catastrophic impact as a prolific non-traditional security threat. To date, the world has seen and reacted to WMD attacks on a manageable scale. This paper discusses the background and current environment of the use of WMD by rogue states and radical terrorist groups and the potential success of a massive future WMD attack on the US at home and abroad. It will conclude with recommended policy to counter the cataclysmic impact a WMD strike would have on the United States domestically and as a global leader.

http://handle.dtic.mil/100.2/ADA391067

Accession Number: ADA391067


Abstract: The United States has begun a program of counterproliferation in order to preempt the use of WMD by such elements, however, the ability to respond to the terrorist employment of biological/chemical weapons is absent. Given the structure, capability and technical expertise in the Federal Emergency Management Agency (FEMA) and the Federal Bureau of Investigation (FBI), the Department of Defense (DoD) will be tasked to conduct the response to such an incident. The geographical Commander in Chief (CINC) and the appointed Joint Task Force (JTF) commander will ultimately be assigned the response mission. Planning, training and coordination is required to develop a force capable of responding in a timely and coordinated manner.

Accession Number: ADA307327

Abstract: This book contains the Proceedings of the seventh meeting in the Chemical and Biological Medical Treatment Symposium series. CBMTS-Industry II was held in Dubrovnik, Croatia from 21-27 April 2001. The papers contained herein were presented in five sectors and seventeen sessions. The papers covered: the CBMTS-Industry II Opening; Exercise, Demonstrations; Congress Workshop; General and Overview; Problem Definition; Preparation and Response; General Aspects and Assistance; Threat Assessment; Medical Treatment of OP intoxication: Biological Sources and Prevention; Chemical and Situational Analysis; General Chemical and Biological Aspects; Dissemination Detection of Biological Agents and Management; National Approach to Terrorism; Countermeasures and Effects of CB Agents; Response to Terrorist Events; Chemical Sources and Prevention; Provisioning and Communication Problems; Protection Information of Responders; Summaries and Conclusions. http://handle.dtic.mil/100.2/ADA411272

Accession Number: ADA411272


Abstract: Nuclear, chemical and biological blackmail by terrorist organizations and individuals could become a reality in the near future. The United States has adopted a tough strategy of supporting both bilateral agreements and multilateral connections seeking to institute universal sanctions against states which harbor terrorists. Although ideologically opposed to individual acts of terrorism, the Soviet Union still interprets, supports, or opposes the methods, activities, and purposes of various terrorist groups proportionately with their perceived accommodations with Soviet national interests, despite a policy of reducing international tensions with the West through detente. Both superpowers must recognize that the techniques of terrorism can be used by anyone regardless of ideology or nationality, that mutually beneficial decision along will not solve the problem, but is a prerequisite to reversing current trends of escalating terrorism and to achieving world peace, security, and genuine detente.

Accession Number: ADA014159


Abstract: Within the United States National Security Strategy, December 1999, Weapons of Mass Destruction (WMD) and their possible use by terrorists are listed as a vital interest to our nation's security. Excluded from this vital interest are terrorist acts that involve the use of conventional bombs and weaponry. The United States is focused on a Nuclear/Biological/Chemical (NBC) terrorist attack; but it should be equally prepared for the more likely domestic terrorist attack using conventional bombs.

Accession Number: ADA401425


Abstract: For the United States, responding to terrorism as both a threat and a reality will be one of the most complex challenges of the 21st century. The era of conventional weapons and conventional tactics is over. The arsenal of the world is now comprised of chemical, biological and nuclear weapons collectively known as weapons of mass destruction (WMD). Moreover, although all of these weapons have been deployed in some incident during the past sixty years,
the tenor of their now threatened deployment has changed. To begin with, there are simply more weapons in the hands of more groups, both with and without national affiliations. The neighborhood of nations is un-united in its own political and diplomatic response to this reality. Additionally, while this fractured response may not be a causal factor, there is a greater willingness to use biological and chemical weapons, if not nuclear, as well. Thus, the proliferation of killing agents in the hands of groups whose goals and interests are either not known, not understood, or counter to those of the United States, makes the United States, with its huge scope of political, diplomatic, military and business interests, a terrorist target of the first order. That's the threat. Once some type of WMD has been used within the United States, the entire country will be responding to the reality of terrorism. Responding will be much more complex than merely initiating a massive terrorist attack. At the dawn of the millennium, the United States has only begun to develop processes, policies, inter- and intra-governmental alliances which will form the structure of an effective response. And that is only the first step. Parallel with that effort there needs to be the creation of procedures covering every conceivable scenario of massive terrorism, thus responding to an outbreak of anthrax (a biological agent) is a different type of undertaking than responding to Sarin (a chemical agent).

Accession Number: ADA377633


Abstract: The purpose of this report is to provide a single, consistent set of unclassified data on the physical, chemical and toxicological properties of chemical and biological (CB) agents that might be released in an urban terrorism incident, and references for the sources of the data. These data are needed for predicting airborne concentrations of CB agents in and around buildings as a function of time and their potential toxicological consequences, and for developing mitigation plans. As new information emerges, we will update this reference document. In addition to the data tables, Appendix A summarizes definitions and units for airborne concentrations of CB agents and related conversion factors and Appendix B presents more detailed information on the lethal dose and exposure levels for anthrax and sarin.

Report Number: LBNL-45475
Accession Number: DE2001767585


Abstract: This paper examines the practice of terrorism from an historical perspective and in particular the changes in revolutionary theory which have in part resulted from the availability of mass media means. The author posits a correlation exists in the media attention garnered through violent terrorist acts and the increasingly lethal and seemingly random incidents of these acts. A deadly spiral of violence has developed in which, to attract media attention, ever higher levels of violence are required. Toxic chemical agents may be used by terrorist to achieve a new and even higher level. Although a firm consensus does not exist on the potential for the employment of chemical weapons by terrorist groups, the easy availability of the technology needed to produce such weapons and the resolve to inflict large numbers of casualties indicates a willingness to explore new avenues of violence. Toxic chemical agents could well be that new avenue.

http://handle.dtic.mil/100.2/ADA198670
Accession Number: ADA198670

**Abstract:** The threat of terrorist attacks against United States (U.S.) interests has become a high-priority national security concern. These threats come from unconventional, asymmetrical, and transnational sources. The objective of these attacks is to inflict the greatest amount of death and destruction for the least investment in materials and manpower. The terrorists employ weapons of mass destruction because of their effectiveness in achieving this end. The US government has enacted legislation to meet this threat and placed the Department of Defense (DoD) at the forefront of these measures. One of DoD's most significant actions was the decision to integrate the Reserve Components (RC) into the domestic response of managing the consequences of attacks involving weapons of mass destruction. Many challenging issues arise related to accessing the Reserve Components for employment in this mission. These issues involve all of the force integration functional areas. This paper investigates structuring, training, and deploying. Also discussed is the fundamental issue of missioning of RC forces for CoM requirements. This paper will explore these issues and present some recommendations for changes in these force integration functional areas. These changes will facilitate the ultimate objective of accessing and employing trained and ready RC forces in this new and vital aspect of military assistance to civilian authorities.

http://handle.dtic.mil/100.2/ADA377636

Accession Number: ADA377636

Torrens, Linda E. **Conflict in the 21st Century: Counterstrategies For the WMD Terrorist.** Maxwell Air Force Base, AL: Air University, April 1999. 53p.

**Abstract:** For years, the US military has prepared to fight against opponents armed with nuclear, biological, and chemical capabilities. These weapons of mass destruction (WMD) in the hands of traditional, state actors have been at the forefront of US defense planning. The end of the Cold War and the demise of the Soviet Union have allowed us to focus on new threats to US security. WMD terrorism will play a larger role in this new uncertain security environment for several reasons. First, transnational threats are no longer kept in check by a bipolar world. Secondly, terrorists may have greater access to WMD materials today than ever before. And thirdly, the information revolution has made not only weaponization knowledge freely available, but has also improved the organizational capabilities of diverse terrorist groups. This paper examines the WMD terrorist threat and addresses counterstrategies for reducing the risk. Conclusions include a need for heightened awareness of the threat. Recommendations include strengthening domestic and international controls and legal structures regarding WMD materials, using diplomatic pressure and economic means to deter or reduce the likelihood of WMD terrorism, and improving defensive and responsive capabilities.

http://handle.dtic.mil/100.2/ADA395718

Accession Number: ADA395718


**Abstract:** The cover design illustrates chemical protective ensembles at the beginning of the century (World War I era chemical protective ensembles, shown on the left) and at the end of the century (the currently fielded Joint Service Lightweight Integrated Suit Technology ensemble with the M40 Protective Mask, shown on the right). The basic concept has changed little over a century (that is, prevent contact with the toxic agents). However, there have been significant improvements in the materials providing protective masks and ensembles that are more effective in protecting the individual, more durable, and less cumbersome for the wearer.

http://handle.dtic.mil/100.2/ADA391618
Accession Number: ADA391618


Abstract: The National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, Title XVII, Chemical and Biological Weapons Defense, section 1703, directed the Secretary of Defense to submit an assessment and a description of plans to improve readiness. The DoD objective is to enable our forces to survive, fight and win in NBC contaminated environments. Discussed are new management objectives impacted by declining resources and force structure versus an ever changing threat environment.
Accession Number: ADA283520


Abstract: In this present world climate, chemical and biological warfare (CBW) is a realistic threat to U.S. Air Force personnel. Medical care for conventional and chemical casualties in the CBW environment requires individual protection, group protection, and decontamination as well as supply and patient transfer through contaminated areas. CBW stirs terror in individuals both because of the particular psychological fears it arouses and the tremendous difficulties presented by the need to continue to operate after an attack. Recommendations derived from CBW research cover the issues of command (e.g., maintenance of communications and morale, and command policy in the face of mass casualties), medical care (e.g., alcohol use as a risk factor in CBW environment, low dose exposure, internal SCPS-M management, and unique stressors of the CBW environment), performance (e.g., group responses to contamination and isolation effects on performance), and training (e.g., unit reconstitution following heavy losses, grief leadership, buddy care, development of first aid capability within squadrons, crews, and work units, maintenance of cohesion in flying and ground crews, and training for commanders in command posts). These recommendations should serve as the basis for the development of command policy, training scenarios, medical command and medical care procedures and the direction of future research in this area.
Accession Number: ADA203675

Abstract: Homeland security is the number one priority in the draft National Military Strategy released in September 2002. The US Army Chemical Corps has, in its recent history, focused on supporting the Army's overseas force projection mission. All equipment, doctrine and training is developed and fielded for this mission. With the advent of terrorism in the United States, there have been on-going discussions on refocusing the mission to include the homeland security mission. Technology and regulations have changed the civil response landscape since the Chemical Corps was last involved in the 1960's. Responders in the US now must fulfill a bewildering array of required training and equipment certifications before they can legally respond in the US. This paper examines the historical Chemical Corps mission and the homeland defense mission (to include Posse Comitatus). It also examines the Chemical Corps through elements of the Army Force Management requirements generating process (Doctrine, Organizations, Training and Materiel) to determine whether the homeland security mission can be feasibly supported by the Army Chemical Corps. A discussion of what the Chemical Corps would do in Homeland Security operations is also included. Finally, recommendations on changes to Chemical Corps’ doctrine, training and missions are included.

Accession Number: ADA415740

Abstract: The threat of a catastrophe from terrorist's use of a biological weapon is increasing in probability in light of events such as the 1995 sarin nerve gas attack on the Tokyo subway, disclosure regarding the former Soviet Union's sophisticated bioweapons program, and discoveries of Iraq's large-scale efforts to produce and weaponize biological agents, public awareness about terrorism as certainly heightened during the Y2K alerts and the arrest of Algerians linked to Osama bin Laden at the United States-Canadian border, but also may be a result of increasingly public awareness through books, such The Cobra Event and Biohazard programs, such as ABC's "Biowar".
http://handle.dtic.mil/100.2/ADA406250
Accession Number: ADA406250

Abstract: There has been much discussion and debate among security analysts, scholars, and politicians about the possible use of weapons of mass destruction. This paper examines the prospects for international terrorist groups employing chemical weapons. Specifically, it argues that terrorists have the capabilities to employ chemical weapons but will be constrained from using them. A thorough search of available open literature material from books, periodicals, and the internet was conducted to compile the facts of this paper. Limited discussion with terrorist experts on the Air War College staff and the Defense Threat Reduction Agency were also incorporated into this paper. With the exception of the Aum Shinrikyo, there is no open literature support for terrorist possession of a chemical weapon. Empirical evidence does support their ability to buy, steal, or build their own chemical weapon capability. Political, ideological and moral constraints preclude the traditional terrorist employment of a chemical weapon. However, there is a growing faction of terrorists, the religious radicals, who show a proclivity to use chemical weapons to further their cause. The United States has developed cogent policies and procedures to deter, detect and respond to the chemical weapon threat. Additionally, programs have been instituted to train first responders in all major American cities. In concluding, the paper recognizes that traditional terrorists are constrained from using chemical weapons but the religious radical is not.
http://handle.dtic.mil/100.2/ADA395721
Accession Number: ADA395721

Abstract: The threat or use of chemical or biological weapons is a likely condition of future warfare-including the early stages of war, to disrupt operations and logistics. That threat, whether perceived or real, has haunted U. S. military leaders and planners in every conflict since WWI. Now that threat has reached the shores of the United States. For many years, terrorist acts aimed at US citizens or interests were conducted outside of American borders. The geneses of modern terrorism in the U.S. were the bombing incidents of the New York World Trade Center and the Federal Building in Oklahoma. These bombing incidents were the largest terrorist attacks ever conducted in the continental U.S. These bombings demonstrated the real and deadly threat of terrorism to America. This monograph examines the U.S. domestic preparedness program as it relates to chemical and biological weapons. By investigating the terrorist threat, proliferation of weapons of mass destruction and the domestic preparedness program, it will show that the U.S. has demonstrated the 'will' and need for such a program but still lacks resolve to fully implement what resources are required.

Accession Number: ADA357324
CHEMICAL TERRORISM/WARFARE

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BIOLOGICAL TERRORISM/WARFARE

TECHNICAL REPORTS

Abstract: The objective of this paper was to review current processes and procedures for decontaminating the interior of a public building or a transportation system following a terrorist release of a biological agent and toxin inside it.
Report Number: IDA-P-3365
Accession Number: ADA339407

Abstract: The domestic response plan, or passive defense, regarding biological weapons involves deterrence by diminishing the prospects that an attack will attain the desired results and minimizing the consequences of an attack if it were to take place. The three layers of passive defense involve peacetime precautionary measures and preparation, crisis management, and consequence management. Currently, DoD plays a supporting role to other agencies with assets including, but not limited to, the U.S. Army Medical Research Institute for Infectious Disease, U.S. Army National Guard Weapons of Mass Destruction-Civil Support Teams, and the U.S. Marine Corps Chemical Biological Incident Response Force. The planned role of DoD assets in this policy is resource intensive and in some cases has questionable added value in supporting a reaction to an attack. In establishing an effective and efficient response plan, while minimizing risk to the U.S., resources are better directed to enhancing the medical and public health capabilities in this arena prior to enhancing DoD assets. This paper evaluates the role the DoD plays in the Federal Response Plan in the event biological weapons are used against non-military targets within the United States. It defines the threat, outlines the current policy toward terrorism and biological agents, presents analysis of the passive defense component of homeland security strategy as it applies to biological warfare using a risk assessment framework, and makes policy recommendations regarding the role the DoD plays to posture for success in the near term extending to 2010.
Accession Number: ADA402079

Abstract: The United States Government has identified of highest priority the development of effective capabilities for preventing and managing the consequences of terrorists use of chemical, biological, radiological, nuclear and high-yield explosive (CBRNE) materials and weapons on the American homeland. The Department of Defense (DOD) and Army both have a significant role in this effort. This paper will look at those roles and focus on the Army’s ability to support the Homeland Security (HLS) CBRNE terrorist threat in the areas of agent sampling, detection, identification, and decontamination operations. Specifically, it will address the Reserve Components (RC) capability for responding to an incident and demonstrate the value-added of Active Component (AC) forces. The conclusion is the RC cannot fulfill the Department of the Army’s commitment to this important mission by itself: AC
forces must assume a more prominent role to ensure an adequate DOD response in this critical area.

http://handle.dtic.mil/100.2/ADA388953

Accession Number: ADA388953


Abstract: The U.S. Public is capable of assimilating the facts regarding the threat of chemical and biological terrorism; however, the United States Government (USG) has failed to systematically inform its populace about this threat to their security.

Accession Number: ADA407502


Abstract: There is a well recognized and continuing danger of epidemics, epizooics and epiphytotics of natural origin. Federal, State and local governments spend large sums of money each year for the maintenance of public health and for the protection of agricultural and related products. Expanding activity in the biological sciences has increased the probability of accidental exposure to dangerous biological agents. The ease of manufacturing such agents raises a serious threat to their use by terrorists, dissidents, or saboteurs. The lack of safeguards in international agreements outlawing biological warfare, and compelling evidence that those agreements may have been violated, reinforces the need for a strong capability for biological defense. The first step in this study was the identification of the basic national policy documents relating to biological defense. The genesis of those documents was then examined and the current system for evaluation of such policies and their implementation was described. Overlapping roles and functions were identified. The second step was identification of the assignment of responsibilities for the implementation of those policies. Plans for implementation were considered. Current procedures for the review of policy implementation were described.

Accession Number: ADA129643


Abstract: This strategic research paper re-enforces the urgent need for preparing our medical health care infrastructure to be able to respond effectively against a bioterrorist attack. This paper further isolates shortcomings in the health care system and identifies where the Department of Defense can assist our federal, state, and local communities with their preparedness issues and their ability to respond to a bioterrorist attack. The recommendations include a discussion outlining potential improvements in the key health community issue areas of Leadership, Policy and Communication; Facilities and Logistics; Training and Education; and Detection and Response.

http://handle.dtic.mil/100.2/ADA406608

Accession Number: ADA406608


Abstract: The United States is ill prepared and naive to the possibilities and consequences of the threat of an attack against the homeland by a biological weapon of mass destruction (WMD). Due to the vast amount of information regarding the development and employment of these weapons, the technical and scientific challenges to creating these weapons no longer exist.
Biological warfare is the deliberate spreading of disease among humans, animals, and plants. Biological warfare agents include both living microorganisms (bacteria, protozoa, rickettsia, viruses, and fungi), and toxins (chemicals) produced by microorganisms, plants, or animals. Biological agents have been used as weapons of war for thousands of years. Many nations and terrorists groups now have the capability to attack the homeland with a biological weapon. Current defense measures for WMD do not adequately address the unique problems in countering the biological threat. Efforts must be made to increase our intelligence gathering capabilities and to develop broad-spectrum anti-bacterial and anti-viral compounds capable of protecting against a wide range of pathogens. While the United States may never be able to prevent an attack by a persistent terrorist or belligerent state, we can significantly reduce the likelihood of an attack and the resulting effects.

Abstract: Since the terrorist attacks on September 11, 2001, the threat of a biological or chemical terrorist attack on our society has transformed from a distant unease to a major, looming concern. National, state and local organizations are trying to prepare themselves for a threat that is of terrifying consequences and yet ambiguous in how or if it will even present. This effort aimed to understand the cognitive demands faced by first responders to biological and chemical terrorist events. Data collection involved employing Cognitive Task Analysis (CTA) interviews with officials at the local and federal level, attending a conference outlining major research advances in this area, and collecting observations at regional bioterrorism exercises. This report describes the findings using the Advanced Team Decision Making model (Zsambok, Klein, Kyne and Klinger, 1992) as a framework for understanding the challenges teams face in rapidly building and developing their situational understanding in response to these events. The findings from this study are important leverage points for understanding current gaps in response preparedness and areas for future research and development.

Besosa, Miguel A. Role of the National Guard in Responding to Weapons of Mass Destruction (WMD) Attacks in the U.S.: Where Do We Stand. Maxwell Air Force Base, AL: Air University, Air Command and Staff College, April 2001. 58p.
Abstract: The potential for terrorists’ use of weapons of mass destruction (WMD) threatens Americans every day. To many nations and groups, their only means to counter the United States (U.S.) is with nuclear, biological, or chemical weapons. According to most experts, terrorists use of WMD is no longer a question of ‘if’ they will be used, but ‘when.’ When domestic capabilities were found to be lacking in this regard, Congress enacted legislation, Public Law 104-201, and named the National Guard as the primary responder to domestic WMD events. It is evident gaps and shortfalls remain in the National Guard’s (NG) ability to respond to domestic WMD attacks. The purpose of this paper is to examine the critical gaps and shortfalls encountered by the CSTs since their activation. This is done by investigating any available materials concerning the NG involvement in the program, identifying the critical gaps and shortfalls encountered by the CSTs, and to coming up with recommendations to correct them. This paper examines current U.S. policy and strategy to counter terrorist uses of weapons of mass destruction. The second section will examine the CSTs infrastructure, the third section identifies and discusses the predominant gaps and shortfalls encountered by the teams. The final section details current shortfalls and recommendations to improve the overall CST capability.
Abstract: The possibility of a terrorist attack on the United States, utilizing a weapon of mass destruction (WMD) has increased significantly over the past decade. This paper analyzes the effects of a terrorist attack on the United States using a WMD with a biological agent. The paper addresses six major areas. First, it examines the feasibility of such an act. Second, it reviews health-related implications. Third, it examines the economic effects of such an occurrence in a large metropolitan area. Fourth, it identifies the response requirements needed to react to such a catastrophe. Fifth, it looks at the impact on civil structure and order. Finally, it identifies resources currently available to respond to a WMD attack and provides recommendations for systems still needing development and implementation in order to respond appropriately and effectively to this kind of terrorist activity.

Abstract: United States Military Forces continue to refine and modernize their capability to react to and operate in the presence of weapons of mass destruction (WMD), including nuclear, chemical, and biological weapons. While this threat remains substantial, effectively dealing with it on the modern battlefield remains problematic. On the contrary, the WMD threat to domestic population centers and their infrastructure is growing at an alarming rate. Furthermore, the ability of local governments and emergency responders to effectively deal with almost any use of nuclear, chemical, or biological weapons is virtually non-existent. This paper examines the menace of domestic WMD use and the resources available to recover from their use. Analysis concludes that the government, in particular the Department of Defense, should play a larger role in preparing state and city authorities for possible WMD use and recovery.

Abstract: Success in preventing, preparing for and responding to a terrorist attack in the United States involving conventional or non-conventional weapons of mass destruction (WMD) will depend upon the establishment and maintenance of a coordinated crisis and consequence management infrastructure. Emergency responders who arrive first on the scene, as well as those in the medical profession who provide interim treatment, must be adequately trained, equipped, and exercised to ensure their ability to effectively respond and conduct relief and recovery operations as part of a multi-agency team. The federal agencies recognize that the response to bioterrorism will be qualitatively different from a chemical event and will primarily involve the public health and medical communities. Events within the United States and against Americans abroad have demonstrated the need to enhance the nation's domestic preparedness activities. The United States Congress and the President have recognized the need for federal programs to assist state and local jurisdictions in preparing for the threat of WMD terrorism.

Accession Number: PB2001104993

Abstract: This investigation focuses on the spread of a contagious disease subsequent to the military employment of a biological weapon or an act of bioterrorism. Of particular interest are expected or average time histories of four cohorts: (1) Susceptible individuals; (2) Exposed and infected (incubating) individuals; (3) Infectious (contagious) individuals and (4) Removed (noncontagious, alive, or dead) individuals. The objective SEIR curves characterize health care and mortuary service needs as functions of time for a known disease, for given initial conditions, and for an average time-varying rate of disease transmission. Such a disease transmission rate is a key predictive tool, and it is obtainable from a Monte Carlo analysis of historical outbreak data. Recently published epidemiological data for the 1995 Ebola hemorrhagic fever outbreak in Kikwit, Democratic Republic of the Congo, serves as an excellent vehicle to demonstrate the overall semi-empirical SEIR model.

http://handle.dtic.mil/100.2/ADA386686
Report Number: IDA/HQ-P-3488
Accession Number: ADA386686


Abstract: This project defines the terrorist threat to use weapons of mass destruction in the United States. Several chemical and biological agents that could be used in the attack are described. Current statutes are researched to insure the legality of using the military in combating terrorism here in the United States. An examination of current legislation and security strategies reveals the growing concern senior leadership feels toward this issue. Finally, the National Defense Panel recommendations using the National Guard and Army Reserve in consequence management are analyzed. The analysis confirms the appropriate element of the military to perform this mission should be the National Guard.

Accession Number: ADA346389


Abstract: Biological warfare poses a significant threat to the United States. The U.S. dismantled its biological warfare program, while others discreetly continued to explore biological alternatives. Today the U.S. faces a biological warfare threat from regional powers, developing Third World nations and terrorists groups. During Desert Storm, American forces were not prepared to operate in a biological environment.

Accession Number: ADA263936


Abstract: Executive Order No. 1298 signed by President Clinton on November 14, 1994 declared a national emergency with respect to the unusual and extraordinary threat that proliferation of weapons of mass destruction (those weapons categorized as nuclear, chemical or biological) poses to the national security, foreign policy, and economy of the United States. In the wake of the Cold War, a new world disorder seems to be emerging wherein the legitimacy of many states is being challenged from within by increasing non-state calls for self determination from the likes of religious cults, hate groups, isolationist movements, ethnic groups, and revivalist movements. These movements often prey on the
insecurities of the population, offering to fill psychological, social, political, or religious security needs of those who would join them. Religious oriented groups appear to share a common ideology which rejects existing social, economic, and political structure demanding a drastic revision of the world - a world where they become the authoritarian, dominant influence. These are the Post-Modern Terrorists who possess a ripeness to threaten use of weapons of mass destruction. This study presents an argument suggesting that terrorist groups operating under the veneer of religion are truly the most likely candidates to threaten use of mass destruction in a mass casualty causing terrorist act.

http://handle.dtic.mil/100.2/ADA323947
Accession Number: ADA 323947

Abstract: The threat of terrorism has encroached our national borders and has created a heightened sense of vulnerability among many Americans. President Clinton has stated, fighting terrorism is and will for a long time to come be one of the top priorities of the United States. Two acts passed in 1996 have strengthened our fight against terrorism, the Antiterrorism and Effective Death Penalty Act and the Defense Against Weapons of Mass Destruction (WMD) Act. The Defense Against WMD Act designated the Department of Defense the executive agent for coordination of assistance in responding to threats involving biological and chemical weapons. The focus of this research project will be to follow this trail and analyze DOD's course of action in meeting their obligation and assess the probability that DOD will maintain this function after the 1 October 1999 legislative mandate.

http://handle.dtic.mil/100.2/ADA341465
Accession Number: ADA341465

Abstract: The prospect of chemical, biological, radiological, and/or nuclear (CBRN) terrorism is recognized by the United States government as an acute security challenge, Particularly following the tragedy of September 11, 2001, but also for several years prior, senior U.S. officials and official government reports have underscored the likelihood, over time, of terrorist organizations coming into possession of such unconventional materials, and the prospect of their use against the United States homeland, U.S. forward-deployed forces, or U.S. friends and allies. Toward the end of the last century, this concern was heightened, among other events, by the Japanese cult Aum Shinrikyo's 1995 use of sarin in the Tokyo subway. The combination of increasing availability of technology and expertise, a perceived mass-casualty motive structure for particular terrorist organizations, the impending end of a millennium, a spate of conventional attacks against U.S. assets - World Trade Center, 1993; Oklahoma City Federal Building, 1995; American embassies in Tanzania and Kenya, 1998; and the U.S.S. Cole, 2000 - and both the widespread suspicion of terrorists seeking CBRN weapons and the actual sub-national employment of a chemical agent all contributed to this general assessment. More recently, the prospective linkage between terrorist organizations and state actors with weapons of mass destruction programs has become an acute security concern. Indeed, this nexus is central to the logic of the emergent 'Bush Doctrine'. As Secretary of Defense Donald Rumsfeld testified in May 2002, 'we have to recognize that terrorist networks have relationships with terrorist states that have weapons of mass destruction, and that they inevitably are going to get their hands on them, and they would not hesitate one minute in using them. That's the world we live in'.

http://handle.dtic.mil/100.2/ADA404213
Accession Number: ADA404213
Chester, Conrad V. Obstacles to Large-Scale Biological Terrorism. Oak Ridge National Laboratory, TN. September 1991. 13p.

Abstract: US interest in toxic weapons was sharply rekindled in 1990 by the Gulf War. The adversary, Iraq, had used chemical weapons against Iran in the Iran-Iraq War, and was rumored to be producing biological weapons. US troops in Saudi Arabia were issued gas masks and protective clothing and given immunization shots against anthrax and botulism toxin. Because the US-lead UN coalition immediately established air supremacy over Iraq and concentrated on bombing known or suspected chemical biological production and storage sites, Saddam Hussein, the Iraqi dictator did not use toxic weapons. Had he done so, the US would have had the legal right to retaliate with B-52 raids drenching military targets with mustard and nerve agent. Instead, Hussein called on Muslims everywhere, and especially in the US, to conduct a holy war against the US with terrorist attacks on US population and property. However, the potential exists for a large-scale biological attack in the US stimulated and financed by a foreign government, by domestic or foreign dissidents. The events considered here are toward the upper end of a spectrum of possible toxic agent attacks against civilians. The spectrum ranges from individual psychotics contaminating foods or medicine with cyanide or staphylococcus bacteria, through government-ordered assassinations using exotic toxins, raids on cities with crude anthrax bombs to sophisticated spray attacks from low-flying cruise missiles using genetically-engineered hemorrhagic fever viruses in dry form. This paper considers the simplest and most destructive attack possible: using easily grown anthrax spores with great ruggedness and very high lethality disseminated as a line source aerosol upwind of population centers.

Report Number: CONF-9109272-1
Accession Number: DE91018932


Abstract: It is improbable that a terrorist or terrorist group is capable of creating a biological weapon capable of producing mass casualties. With the amount of media attention given to the issue, the casual observer cannot help but have a significant concern that he or she is likely to be killed or injured in a terrorist attack by a biological agent. Yet, if a systematic study is done on the topic and empirical research done on the data, there is no indication that a terrorist or terrorist group has ever created a viable biological pathogen let alone a weapon capable of mass casualties. The threat from a terrorist or terrorist organization to create a biological weapon of mass destruction is minimal and as of today, not credible. This article argues the position that if you remove emotion from the argument, the data indicates a confident future rather than a bleak vision that 'it's only a matter of time', as media hype would leave you to believe. Moreover, we should allocate resources wisely. Monies spent on bio-terrorism should be directed at nonproliferation of nation-states possessing biological weaponized agents and to governmental programs with the aim of reducing biological agent availability by protecting biological stocks and cultures at research facilities.

Accession Number: ADA402130


Abstract: This interim planning guide is intended to present an approach for cities and states to use in planning for a biological terrorist incident. The plan is based on the melding of two documents. The first document was the 1998 Summary Report on BW Response Template and Response Improvements, Volumes 1 and 2. The BW response template was developed by a team of over 60 federal and state experts, local first responders, and technical experts. The second document is the Federal Response Plan. The Federal Response Plan details the authority and responsibilities of Federal Agencies in a disaster.

Abstract: This study determines the military significance of plausible biological warfare (BW) attack scenarios on contemporary military forces. Data has been gathered on the historic dimensions as well as the present state of and the current trends in BW. This background provides the reader with a basic understanding of BW. It also establishes a strong foundation on which to base predictions of military vulnerabilities to the effects of BW and the conditions under which BW could be employed. This study concludes that although tactical battlefield use of BW is highly unlikely, there are conditions and circumstances in which U.S. Forces could be subjected to BW attacks. Several plausible scenarios demonstrate how BW could be effectively employed against U.S. Forces during a Desert Storm type deployment. Under certain conditions, current U.S. biological warfare countermeasures would prove inadequate in the event of a BW attack.

Abstract: The first chapter evaluates the utility of biological warfare in a tactical battlefield scenario: a strategic scenario; and a special forces or terrorist scenario. The second chapter examines the stages in the development of an offensive program and how the biotechnology revolution has facilitated them. Chapter three examines the decision to use biological and chemical weapons and what can be done to deter that decision.

Abstract: The President of the United States has declared a national emergency to deal with the potential specter of a chemical or biological attack against Americans, yet chemical and biological weapons have been used infrequently throughout history compared to conventional weapons. Leonard A. Cole in an article in the Scientific American uses the term 'poison taboo' to describe the abhorrence mankind feels toward biological weapons. The use of the word taboo is interesting and, according to Webster, implies something 'forbidden to profane use... because of supposedly dangerous supernatural powers'. Throughout the ages, man has given biological and chemical weapons supernatural status, partly because of their nature. Does this help explain this apparent dichotomy between our fear and the lack of their use. Are chemical and biological weapons sufficiently morally repugnant today to inhibit their use in a world accustomed to graphic violence. Or, are they just becoming another tool in national arsenals and terrorist caches to be used to offset the awesome power of the United States. The answers to these questions have dramatic consequences for the security of our nation and present remarkable challenges as well as windows of opportunity. This essay explores the relevance of the poison taboo to the security of the United States today by looking at its historical development, at the mechanisms of terrorist restraint in the use of CB weapons, and at a blueprint for a national rhetoric to enhance its deterrent value.


Abstract: As the 20th century draws to a close, the United States has emerged as the world's only superpower. International terrorism is increasing. No other country possesses the wherewithal to challenge the United States on the conventional battlefield. For many countries whose ambitions counter to the U.S.' national interests, terrorism is an attractive option. More concerning is the increasing availability of weapons of mass destruction to rogue nations and radical terrorist organizations. They now pose a formidable threat. This paper discussed the evolution of international terrorism and the frightening proliferation of nuclear, biological, and chemical weapons. Furthermore it analyzes our national security and military strategy for combating terrorism. This paper concludes that terrorism has the potential to catastrophically impact on the American way of life. Therefore, counterterrorism must become a national security priority for the 21st century.


Abstract: President Bush's Executive Order 13228 establishes within the Executive Office of the President an Office of Homeland Security (OHS). The order directs the OHS to develop, coordinate, and implement a national strategy to secure the United States from terrorist attacks. One type of terrorist attack the United States may find itself responding to and recovering from is one involving chemical or biological Weapons of Mass Effects. This study finds that the not if, but when school of thought is no longer the view of the alarmist, but the realist. The Federal Emergency Management Agency's Federal Response Plan (FRP), which coordinates the response of twenty-seven federal agencies and departments, inadequately addresses the role of the Department of Defense. This study finds there are roles necessitated by a chemical or biological terrorist attack against the homeland that are not prescribed to DOD in the FRP or in the supporting response plans of the Environmental Protection Agency, Department of Health and Human Services, or Federal Bureau of Investigation. Furthermore, this study finds some of those roles are feasible, suitable, and acceptable for the military. Those roles include chemical/biological protection, disease surveillance, epidemiological investigation, laboratory support, veterinary services, mental health services, civil disturbance support, disease containment, and coordination. This study recommends DOD resolve its dual use dilemma so that it is feasible for military assets to support the Lead Federal Agency while remaining ready to fight and win the nations wars.


Abstract: Terrorist use of weapons of mass destruction threatens Americans and our armed forces every day. To many nations and groups, their only means to counter the United States is with nuclear, biological, or chemical weapons. The terrorist use of weapons of mass destruction is
no longer a question of "if" they will be used, but a question of "when" they will be used. This paper looks at the US military capability to counter terrorist use of weapons of mass destruction. It describes the terrorist threat to US forces and motives and reasons terrorists would use these types of weapons. Our current national policy, strategy and doctrine highlight the problem, but show a need to improve interagency coordination and cooperation. On the military level, combating the threat is an integral part of our strategy but needs increased emphasis at the planning level. Capabilities exist to deter or counter the threat; protect our forces; and sustain and operate after an NBC attack. But countering a terrorist threat presents unique challenges to future leaders and requires improvements in intelligence, equipment, training and education.

http://handle.dtic.mil/100.2/ADA395120
Accession Number: ADA395120

Abstract: Information discovered as a result of the current war on terrorism suggests a terrorist-led attack on the U.S. homeland involving weapons of mass destruction (WMD) remains a very real possibility. Some believe the U.S. faces its greatest WMD threat since the 1962 Cuban Missile Crisis, but many discount the effect deterrence can have on terrorist groups. Deterrence, however, is an attractive option in the costs to implement a deterrence-based strategy are minimal when compared to defending the entire homeland or defeating all elements of a threatening terrorist organization. Little research, however, has been done to evaluate the effectiveness deterrence can have on a group bent on harming the U.S. with WMD.

Accession Number: ADA415856

Abstract: The Department of Defense is also in the process of reevaluating its contribution to homeland security in the aftermath of the September 11 attacks. Of particular concern is the DoD plan for assisting civilian authorities in consequence management - the measures taken to protect public health, safety, and the environment, to restore essential government services, and to provide emergency relief to governments businesses and individuals affected by the consequences of terrorism. A significant DoD contribution to the consequence management aspect of homeland security has been the development of the National Guard Weapons of Mass Destruction - Civil Support Team (WMD-CST), a new type of unit designed to provide civilian authorities military support in response to WMD attacks involving the use of nuclear, biological, chemical, or radiological (NBCR) weapons. The development of the WMD-CST concept has raised considerable debate over the merits of the new organization. Previous authors argued that the WMD-CST is incapable of providing timely support to local authorities. Others take the criticism of the WMD-CST a step further, calling into question the ability of the Department of Defense to provide personnel sufficiently trained to provide meaningful support to civilian first responders. Positive reviews emphasized the WMD-CSTs' ability to respond rapidly to events, because of their ability to operate under Title 32 or Title 10 authority.

http://handle.dtic.mil/100.2/ADA403167
Accession Number: ADA403167

Abstract: This paper analyzes recent research and advances in biological and biological/chemical technology. It examines the imposing threat and significance to the Biological Weapons Convention of 1972. It then discusses how biological and biological/chemical weapons effects the operational level and operational planning. This paper offers projections, opinion on deficiencies/risk, and suggests alternatives. Finally, conclusions are presented offering challenges and concerns.

Accession Number: ADA240460


Abstract: This thesis examines Department of Defense involvement in U.S. preparedness to manage the consequences of a nuclear, radiological, biological, or chemical terrorist attack against its cities. It analyzes the establishment and implementation of the Defense Against Weapons of Mass Destruction Act of 1996 which directed the Department of Defense to assist in the training of state and local emergency response agencies involved in consequence management activities. The historical analysis focuses on the proliferation of weapons of mass destruction since the dissolution of the Soviet Union, major terrorist incidents since 1993, international standards, and legislative and executive efforts undertaken to combat terrorism up to 1996. The $150 million Nunn Lugar Domenici amendment to the FY-97 National Defense Authorization Bill is examined in detail from introduction on the Senate floor to eventual passage and enactment. Problems and policy issues associated with resourcing and implementing the resulting Domestic Preparedness Program are treated. Although the DoD was given responsibility for implementing city training, an interagency effort ensued involving the Public Health Service, Environmental Protection Agency, Federal Bureau of Investigation, Federal Emergency Management Agency, Department of Energy, and others. Potential weaknesses may materialize due to several characteristics of the Domestic Preparedness Program, including its novelty and uniqueness, the unorthodox legislative process by which it was established, and its complex organizational structure and temporary nature.

http://handle.dtic.mil/100.2/ADA341405

Accession Number: ADA341405


Abstract: The aim of this study is to provide a brief historical overview of the past use of biological warfare agents and the possible use of food as a vehicle for perpetrating an act of bio-terrorism. A 'zero failure' model as developed by the National Aeronautics and Space Administration for producing food for space is reviewed, as well as the United States (U.S.) military services system attempts to ensure food safety. Also discussed are preliminary attempts to evaluate food vulnerability in the Southwest Asia Area of Operations. In conclusion, an assessment of current vulnerabilities and recommendations to decrease the vulnerability of the food supply of the United States to intentional contamination by terrorists are provided.

Report Number: AFIT-99-226

Accession Number: ADA367832


Abstract: Terrorists desiring to attack the United States could easily use biological weapons to damage the country's agricultural infrastructure. Using such methods, they could strike a blow against a key national strength, agriculture, a strength that supports the country's
The country needs to implement a number of changes to avoid such an attack, if possible, or be prepared to respond should an attack occur. Drawing on current literature including journal articles, reports, and related books, reviewing current legislation and policies, this research examines the problem. The paper reviews the nature and threat of agricultural bioterrorism and considers present national capabilities, plans, and initiatives. It proposes needed actions to strengthen the country’s ability to prevent, prepare for, respond to, mitigate, and remediate for biological attacks against the agricultural infrastructure.

http://handle.dtic.mil/100.2/ADA415398
Accession Number ADA415398

Abstract: This report concerns chemical and biological arms control technologies and their applications to Homeland Defense.
http://handle.dtic.mil/100.2/ADA394560
Accession Number: ADA394560

Abstract: The author examines the changing nature of terrorism. In comparison to professional, terrorists pursuing specific political or ideological objectives, today’s amateurs often act from religious or racial convictions. Their objective may be to kill large numbers of people. They are less predictable and, therefore, more difficult to apprehend before the incident occurs, and have lethal devices ranging from the relatively simple fertilizer bomb to biologically-altered viruses. Since the United States will remain an attractive target, we need to understand and prepare for this new kind of terrorism.
Accession Number: ADA283936

Abstract: The purpose of this paper is to answer the following question. What factors should senior United States government officials be familiar with, and take into consideration, when making time-constrained decisions regarding the type and extent of a United States government response to a Chemical, Biological, Radiological or Nuclear (CBRN) event overseas? In determining these factors, the author researched salient books, periodicals, published and unpublished papers, and credible Internet sites. The author also conducted telephonic interviews and electronic mail exchanges with government officials in the fields of Weapons of Mass Destruction terrorism and Consequence Management. The author argues that the United States has developed significant CBRN response forces, but is hamstrung in projecting a timely response to an event overseas by a fragmented decision-making process at the strategic level. The author also proposes that national interests drive the decision to respond to a foreign nation’s request for assistance, and that interests are based predominantly on political and economic concerns.
http://handle.dtic.mil/100.2/ADA409304
Accession Number: ADA409304

Abstract: The millennium began with the United States more concerned than ever about the threat of terrorism in "Hometown USA". The Reserve Component (RC) has played a major role in the defense of this nation for more than a quarter of a century and will have an extensive role in defending against the terrorist threat. This report will examine how the Army National Guard (ARNG) and the Army Reserve (USAR) have stepped forward to assume their roles in national defense. The ARNG and the USAR were once referred to as weekend warriors with little credibility with the Active Component (AC). They were seen as untrained and unfit for modern warfare. However, over the past twenty-five years, the myth has faded. The RC has proven time and time again, deployment after deployment, that it can hold its own with the AC. The history of the ARNG and the USAR is briefly discussed in order to give a clearer understanding and appreciation of their contributions to national defense. A brief review of how the missions have evolved since the seventeenth century, and prior to the second amendment to the constitution that allowed states to establish the National Guard, will also be discussed. Evolution of the ARNG and the USAR, and their missions over the last decade has fully integrated the Army into one Army. The chief of staff of the Army said, 'We are The Army totally integrated into oneness of purpose - no longer the Total Army, no longer The One Army, The Army, One Army'. This paper will detail the ARNG and the USAR roles in weapons of mass destruction (WMD) consequence management of homeland defense, and will briefly examine the training, equipment, and the ARNG response role of chemical and biological threats.


Abstract: In response to the growing threat of terrorism with chemical, biological and nuclear weapons, the United States government has developed a national concept of operations for responding to their use. This concept of operations consists of multiple agencies at the local, state and federal levels reacting to an incident with no clear operational organization for efficient command and control and effective response. A step in the right direction to resolve this potentially critical problem is to develop an organization under a single commander with the responsibility for domestic preparedness, response, and consequence management. Only with the proper command organization and subsequent unity of effort can we ensure the most effective employment of the many forces and resources currently tasked with homeland defense against and response to weapons of mass destruction.


Abstract: Weapons of Mass Destruction (WMD) in the hands of non-state actors are a major threat to U.S. security. Efforts to counter the threat are disjointed. Strategy remains overly reliant upon non-proliferation without adequately implementing possible preemptive and response alternatives. Deterrence is failing and operational capabilities to respond are hampered by bureaucratic complexity and dogmatic institutional nearsighted economics. Hence, America is vulnerable and at risk. This paper reviews the WMD threat and examines policy and strategy weaknesses. The paper then discusses U.S. response strategies and highlights current methods for establishing command and control Headquarters. Finally, it recommends an enhanced
response strategy by creating a Standing Joint Task Force Headquarters to address terrorist induced WMD incident consequences.
http://handle.dtic.mil/100.2/ADA344342

Accession Number: ADA344342


Abstract: The twentieth century has seen as unprecedented explosion in the manufacture and use of armaments. This has been accompanied by steady increases in the number, length and lethality of conflicts. Both trends have been accelerating since the end of World War II, especially with regard to the so-called Third World. The focus of most arms control efforts has been on nuclear, chemical and biological weapons, with some secondary concern in the last two decades over sophisticated major conventional armaments. Virtually unnoticed have been the massive quantities of simple, inexpensive arms produced all over the globe and traded in channels overt, covert, and illegal. These items remain useful for many years. Equipment such as mortars and rifles find application in war after war, while ammunition keeps its explosive nature until it detonates. So the world, especially the Third World, has an ever growing sea of cheap arms, the old stuff still dangerous, more added every day. Review of selected conflicts, including Cambodia and Afghanistan, illustrates the depth of the trouble we are in and suggests some possible future directions in order to avoid drowning in this lethal sea.

Accession Number: ADA280611


Abstract: Despite the best-combined efforts of the world's five major powers (United States, Great Britain, France, Russia, and China), third world countries, rogue radical groups, and potential terrorist organizations continue their alarming proliferation of weapons of mass destruction (WMD) technologies. According to Secretary of State Madeleine Albright, proliferation of weapons of mass destruction are "the most overriding security interest of our time." Supporting her statement, in recent testimony before the Senate Intelligence Committee, the directors of the Central Intelligence Agency and the Defense Intelligence Agency agreed that the proliferation of weapons of mass destruction is the biggest threat to national security. LTG Patrick M. Hughes, director of the DIA, explained "because chemical and biological weapons are generally easier to develop, hide, and employ than nuclear weapons," they will be "more widely proliferated and have a higher probability of being used over the next two decades."

http://handle.dtic.mil/100.2/ADA366273

Accession Number: ADA366273

Kirkman, A. CBW - Are We Prepared to Combat the Chemical/Biological Threat. Newport, RI: Naval War College, Department of Operations, 8 February 1994. 33p.

Abstract: This research paper analyzes the current chemical and biological threat faced by the United States from Third World Countries. It explores the impact this threat brings on military planning and execution and recommends avenues that the United States should take to hedge against it. A historical background of chemical and biological weapons use is presented with emphasis on the magnitude and extent of this problem. The legal and moral frameworks are examined with focus on the capabilities, limitations, intentions, and preparedness of the United States and Third World Countries. The thesis presented is that the United States' posture in combating chemical and biological weapons is severely compromised. A lack of governmental
commitment, inadequate technologies, lack of success in arms control negotiations, and an inability to control proliferation, compounds the problem. Although no U.S. forces were exposed to chemical or biological weapons in our latest conflict with Iraq, the future does not hold the promise that we will be as lucky the next time. And there will be a next time.

**Accession Number: ADA279591**

Kupperman, Robert H. *The Challenge of Terrorism to the Military.*

**Abstract:** Specific items addressed are past and future terrorism concerns, including terrorist incidents, problems of hostages, terrorist arsenals, plausibility of mass destruction terrorism, conventional weapons, unconventional weapons, bacteriological warfare as a terrorist weapon, chemical warfare agents and technological challenges ahead.

**Accession Number: ADA114399**

LeHardy, Frank A., III. *Deterring Weapons of Mass Destruction Terrorism.*

**Abstract:** This thesis examines terrorist acts involving the use of weapons of mass destruction (WMD) against unsuspecting civilians by the Aum Shinriko and Rajneesh cults. The proliferation of WMD (i.e. nuclear, chemical, and biological weapons) has created a concern that terrorists might use WMD. Despite obvious signs, these groups were not identified as terrorists until after they committed terrorist attacks. This thesis identifies common characteristics of terrorists that have used WMD in the past and generates indicators of non-state actors that might commit WMD terrorism in the future.

**Accession Number: ADA341438**

Lein, Brian C. *A Bioterrorism Prevention Strategy For the 21st Century.*

**Abstract:** The United States and the entire world have not effectively dealt with curtailing the significant research and development in biowarfare over the past several decades. A new terrorist mentality, coupled with the increasing gains in biotechnology caused the United States to significantly alter the policy and funding for weapons of mass destruction defense. However, this approach has been fragmented and uncoordinated at state and national levels. The results of the anthrax attack and multiple wargames revealed that the United States is currently ill prepared to prevent or deter a bioterrorism attack against it's homeland and protect the citizens. A proper risk assessment must be undertaken at the national and international level so that resources commensurate with the risk can be applied to this threat. This paper will discuss this risk assessment, and then develop a new doctrine of deterrence and dissuasion and apply this doctrine to the current US strategy for bioterrorism defense. A recommendation to consolidate all biological defense funding, research, and coordination under the Department of Homeland Defense is presented. An aggressive strategy of detection, prevention from acquisition, protection of the US population and resources is developed. The United States must take the lead on this threat as the only superpower with adequate resources and technology to prevent a catastrophic attack.

http://handle.dtic.mil/100.2/ADA415433

**Accession Number: ADA415433**


**Abstract:** This paper addresses the threat posed by weapons of mass destruction as it is understood following the events of 11 September 2001 and the anthrax attacks directed at
congressional and media offices in the weeks that followed. The various types of risks are explored with emphasis on chemical agents, biological pathogens, and radiological weapons. Then, the planned governmental response is evaluated with concentration on the role of the Department of Defense and the Armed Forces with a particular focus on the Reserve Components. Based on this analysis, conclusions and recommendations are offered in the context of better ensuring that the planned response to possible employment of weapons of mass destruction is adequate to meet the threat.


Abstract: The horrific terrorist attacks of September ii, 2001 on the U.S. homeland highlighted the threat that terrorism poses to U.S. national security. DoD operates globally a large network of Intelligence, Surveillance, and Reconnaissance (ISR) assets which could be brought to bear in the effort to combat terrorism. The geographic Commander-in-Chief (CINCs) set the priorities for the intelligence networks in their Areas of Responsibility (AORs) according to their interpretation of the strategic guidance from the National Command Authority (NCA). A key tenet of the new strategic setting is the grave threat to national security posed by terrorism, potentially using Chemical, Biological, Radiological, Nuclear, or Enhanced High Explosive (CBRNE) weapons. This fact, coupled with the new strategic mandate that sets defense of the homeland as the highest priority for the U.S. military, dictates that each of the geographic CINCs set combatting terrorist use of CBRNE weapons as the highest priority for their intelligence networks. The success or failure of this operational intelligence effort could have major strategic effects.


Abstract: Weapons of Mass Destruction (WMD) and Force Protection are two critical topics rapidly gaining attention throughout the world. An increasing recognition of the vulnerability of our citizens and of our military forces due to recent terrorist attacks has caused the President of the United States and Congress to take several actions to improve preparedness. This paper examines what a minimum basic response capability for all military, police and security forces should be to ensure at least some chance for their own survival and possible early warning and protection of others in the case of a domestic WMD incident. The capabilities of awareness, protection and detection are studied including the aspects of training and equipment. The paper shows that the WMD threat to America is significant and increasing and makes several recommendations including that all first responders receive training to increase their awareness and understanding of WMD, the adoption nationally of a minimum personal protection equipment standard for first responders to accomplish EPA level C protection, and the development of a WMD response capability modeled on national level asset capability for all cities, counties, or states.

Abstract: This thesis explores the implications of information management of government-funded projects on national security objectives. A case study of the Human Genome Project is used to illustrate the risk of information transfer between government sources and private industry and the implications posed to the proliferation of Weapons of Mass Destruction. The issue of risk in information management is approached by developing three theoretical paradigms: the scientific paradigm, the business paradigm and the security paradigm. The findings of this thesis demonstrate an information sharing paradigm favoring full and open access to scientific data currently being practiced by the U.S. Human Genome Project. The information gathered was acquired via open source information pertaining to the Human Genome Project and related initiatives. The purpose of this thesis was to raise awareness of the dangers in distributing information, funded and supplied by the United States. In addition, recommendations were made to increase the involvement of medical professionals and scientists in the non-proliferation efforts the U.S. is currently involved in.

http://handle.dtic.mil/100.2/ADA403150
Accession Number: ADA403150

McCoy, Tom. Issues in Civilian Disaster Planning and Management For Incidents of Chemical and Biological Terrorism. Fort Sam Houston, TX: Academy of Health Sciences, Army, December 1999. 81p.
Abstract: The proliferation of chemical and biological weapons has experienced a dramatic increase since the collapse of the former Soviet Union. Scientists from the biological and chemical weapons programs throughout the former eastern bloc have been courted by rogue nations and terrorist groups, either through economic necessity or shared political, cultural, or religious ideology. As a result, the threat of a terrorist attack using chemical or biological weapons has increased dramatically. This leads many experts to concede that it's no longer a matter of if, but when. For almost fifty years, Cold War planning doctrine focused on a full-scale nuclear war with the Soviet Union. Although attempts to eliminate biological and chemical weapons did occur, their use was still restricted primarily to the battlefield against military targets. As a result, the United States civilian response plans failed to address these threats. With the widespread proliferation of these weapons and information about them, federal, state, and local authorities are rapidly developing plans to meet this new threat. The healthcare industry is particularly vulnerable for a number of reasons, among them are a lack of experience and training; reduction in national healthcare assets due to reforms; and denial of the threat and the role they would play in response to such an attack. Efforts so far have focused on first responders, with very little emphasis on the healthcare infrastructure that would ultimately treat and care for victims. This represents a serious flaw in the national domestic preparedness strategy that will require leaders in all fields to correct. This paper will address some of the shortcomings of current disaster plans and offer recommendations for local level response activities to consider in developing their contingency plans. It is critical that local efforts be strengthened, as they will be the first line of defense if such a terrorist attack were to occur.

http://handle.dtic.mil/100.2/ADA409503
Accession Number: ADA409503

Abstract: This analysis provides a set of alternatives, along with the associated advantages and disadvantages, for establishing an automated database related to biological and chemical warfare (BW/CW) defense. This analysis focuses upon the preliminary considerations involved in developing and operating a database--either a stand-alone database or one integrated with other existing databases, employing personnel for either Natick, other DoD facilities, a contractor facility, or a combination of any of the three to develop and maintain the database. Adequate
computer resources for maintaining the database were found to be available at the Army Research and Development Center (ARDC), INFOCEN at the Air Force Aeronautical Systems Division Computer Center, and certain contractor facilities. The staffs at ARDC and at certain contractor facilities were determined to be available to develop and operate the database, to have technical expertise in the subject areas of interest, and to have established a proven capability in the development and operation of databases.

http://handle.dtic.mil/100.2/ADA158016

Accession Number: ADA158016

Abstract: The threat of agricultural terrorism is real. The consequences of an attack on our agricultural infrastructure may have a devastating impact on our economy while threatening the survival of our citizenry and the very existence of our nation. Our preparations to prevent and respond to such an attack will determine whether the impact of an agricultural terrorism incident is contained or if it has catastrophic results. How critical is our agriculture infrastructure to our way of life. What is the nature of the threat to our agricultural industry. Are present security methods capable of handling the threat. If not, what steps should the Executive Branch and the Department of Defense take to address the threat. This study seeks to answer these questions while providing a framework using an ends, ways and means analysis to address the development of an agricultural protection policy and identify the role the Department of Defense should play in combating the threat.

Accession Number: ADA391099

Abstract: The proliferation in quantity and quality of weapons of mass destruction serve as a threat of great consequence to U.S. operational forces. Operational options for action are explored within the national military strategy concepts of forward presence, deterrence, and crisis/regional contingency response. Three questions and associated issues related to operational art are posed for each concept: (1) what condition must be produced to achieve the strategic goal, (2) what events will most likely result in the desired condition, and (3) how should resources be applied to produce those events. The resulting analysis offers the following conclusions: (1) complementary efforts by all instruments of national power--political, diplomatic, economic, and military--are necessary; (2) knowledge, training, and equipment are the first line of defense; (3) persuasion as well as confrontation is necessary; (4) effective deterrence requires capability, credibility, and communication; and (5) training and weapons for retaliation-in-kind remain the final alternative.

Accession Number: ADA250011

Abstract: The specter of biological weapons -- one of the three weapons of mass destruction (WMD) -- is an unusual and extraordinary threat to the national security of the United States. Since the U.S. unilaterally renounced biological warfare in 1969, biotechnology advances, aggressive nation-states, and terrorism have complicated a precarious balance of world and regional stability. U.S. shortfalls in biological warfare preparedness during the Persian Gulf War may convince potential adversaries that the U.S. is incapable of protecting its vital interests from biological assault. This paper examines the menace of biological weapons and global challenges
to nonproliferation and counterproliferation. Analysis concludes that the United States can dissuade, deter, and defend against biological warfare and terrorism with an integrated national security strategy for Biological Weapons Engagement and Disarmament.

http://handle.dtic.mil/100.2/ADA295257
Accession Number: ADA295257

Abstract: The viewgraphs for the Biological Weapons Response Template and Decision Tree briefing are presented.
http://handle.dtic.mil/100.2/ADA394602
Accession Number: ADA394602

Abstract: The proliferation of Weapons of Mass Destruction (WMDs)—nuclear, biological, and chemical—is occurring throughout the Third World. Desert Storm offers an excellent case study for assessing the various measures and operations which can be employed to protect U.S. forces against an adversary possessing a WMD capability. The elements of Desert Storm's successful strategy can be categorized in three broad approaches—deterrence, denial, and defense. All three approaches were necessary and synergistic. In the future, the ability to quickly deny or destroy an adversary's WMD capability will be increasingly important, due to the unacceptability of exposing forces to any type of NBC agent, the likelihood for increased uncertainty surrounding deterrent threats, and the diplomatic, political, and psychological dilemmas posed by an adversary's first use....Weapons of mass destruction, Desert Storm.
Accession Number: ADA264454

Abstract: The report describes what nuclear, chemical, and biological weapons can do, analyzes the consequences of their spread for the United States and the world, and summarizes technical aspects of monitoring and controlling their production. The report also explains the array of policy tools that can be used to combat proliferation, identifying tradeoffs and choices that confront policymakers.
http://www.wws.princeton.edu/~ota/disk1/1993/9341_n.html

Abstract: The background paper explores the technical pathways by which states might acquire nuclear, chemical, and biological weapons and the systems to deliver them. It also assesses the level of effort, commitment, and resources required to mount such developments. The paper is a companion to the OTA report Proliferation of Weapons of Mass Destruction: Assessing the Risks, which describes what nuclear, chemical, and biological weapons can do and how they might be used. That report also analyzes the consequences of the spread of such weapons for the United States and the world, surveys the array of policy tools that can be used to combat proliferation, and identifies tradeoffs and choices that confront policymakers.

Abstract: The report deals with the Federal research and development effort in countering terrorism, and with the state of attempts to use technology to aid in detecting and preventing attempts to introduce explosives aboard aircraft. A review of relevant R&D programs in many agencies is provided. The report, the first produced by this assessment, gives an overview of Federal efforts to develop technical tools to aid in the battle against terrorism. It also provides a detailed discussion and analysis of technical aspects of research into explosives detectors, and gives the background of recent developments in the field. These are topics of great current interest, particularly when applied to airport security. Further, the report also covers research into technologies of use in other areas of counterterrorism: protection against chemical and biological attacks, physical security, data dissemination, and incident response.

Accession Number: ADA360334


Abstract: Terrorism is not a new phenomenon, but it has become more prominent during the past two decades. Terrorist attacks have included not only political assassinations, but also large-scale attacks, often aimed at third parties, causing massive casualties. Two well-known examples are car bombings, employing hundreds of kilograms of high explosives, and attacks on commercial aircraft around the world. The U.S. Government and the American public became acutely aware of terrorism after the bombing of Pan American Flight 103 over Lockerbie, Scotland in December 1988. The recent war in the Persian Gulf heightened fears of renewed terrorist attacks on U.S. targets, both overseas and at home. In 1989, because of growing concern over terrorist threats, several Senate Committees requested that OTA study the role of technology in fighting terrorism and the Federal effort in promoting related research and development. The requesting Committees were: Governmental Affairs; Foreign Relations (Subcommittee on Terrorism, Narcotics, and International Operations); and Commerce, Science, and Transportation, together with its Subcommittee on Aviation. The Senate Select Committee on Intelligence also endorsed the study.

Accession Number: ADA360398


Abstract: Since the end of the Cold War asymmetric threats continue to usurp conventional battlefield challenges as a significant danger to US national interests. Weapons of mass destruction (WMD) pose the most catastrophic impact as a prolific non-traditional security threat. To date, the world has seen and reacted to WMD attacks on a manageable scale. This paper discusses the background and current environment of the use of WMD by rogue states and radical terrorist groups and the potential success of a massive future WMD attack on the US at home and abroad. It will conclude with recommended policy to counter the cataclysmic impact a WMD strike would have on the United States domestically and as a global leader.

Accession Number: ADA391067

**Abstract:** The United States has begun a program of counterproliferation in order to preempt the use of WMD by such elements, however, the ability to respond to the terrorist employment of biological/chemical weapons is absent. Given the structure, capability and technical expertise in the Federal Emergency Management Agency (FEMA) and the Federal Bureau of Investigation (FBI), the Department of Defense (DoD) will be tasked to conduct the response to such an incident. The geographical Commander in Chief (CINC) and the appointed Joint Task Force (JTF) commander will ultimately be assigned the response mission. Planning, training and coordination is required to develop a force capable of responding in a timely and coordinated manner.

**Accession Number:** ADA307327


**Abstract:** The attacks of September 11, 2001 have made Americans acutely aware of their vulnerability to terrorism. Now the Nation is focused on improving defensive measures and rooting out and destroying the global infrastructure of terrorism. In response to the terrorist offensive, the Bush administration has engineered an international coalition against terrorism; dedicated substantial new resources to prevent or deter this blight; undertaken military action against blatant practitioners of terrorism; and established a new Office of Homeland Security, under the leadership of former Pennsylvania governor Tom Ridge, to coordinate the Federal response to terrorism. As America prepares defenses against catastrophes barely conceivable only a few months ago, the threat of bioerrorism in particular looms larger than ever. Fears of anthrax, smallpox, and plague pervade the American consciousness, fueled by reports that some of the plane hijackers involved in the World Trade Center and Pentagon attacks had specific interest in crop duster aircraft that could be used to disseminate aerosols of pathogens. Because of this, the Nation is stepping up its defenses against bioterrorism.

[http://handle.dtic.mil/100.2/ADA409307](http://handle.dtic.mil/100.2/ADA409307)

**Accession Number:** ADA409307


**Abstract:** This book contains the Proceedings of the seventh meeting in the Chemical and Biological Medical Treatment Symposium series. CBMTS-Industry II was held in Dubrovnik, Croatia from 21-27 April 2001. The papers contained herein were presented in five sectors and seventeen sessions. The papers covered: the CBMTS-Industry II Opening; Exercise, Demonstrations; Congress Workshop; General and Overview; Problem Definition; Preparation and Response; General Aspects and Assistance; Threat Assessment; Medical Treatment of OP intoxication: Biological Sources and Prevention; Chemical and Situational Analysis; General Chemical and Biological Aspects; Dissemination Detection of Biological Agents and Management; National Approach to Terrorism; Countermeasures and Effects of CB Agents; Response to Terrorist Events; Chemical Sources and Prevention; Provisioning and Communication Problems; Protection Information of Responders; Summaries and Conclusions.

[http://handle.dtic.mil/100.2/ADA411272](http://handle.dtic.mil/100.2/ADA411272)

**Accession Number:** ADA411272

Abstract: Nuclear, chemical and biological blackmail by terrorist organizations and individuals could become a reality in the near future. The United States has adopted a tough strategy of supporting both bilateral agreements and multilateral connections seeking to institute universal sanctions against states which harbor terrorists. Although ideologically opposed to individual acts of terrorism, the Soviet Union still interprets, supports, or opposes the methods, activities, and purposes of various terrorist groups proportionately with their perceived accommodations with Soviet national interests, despite a policy of reducing international tensions with the West through detente. Both superpowers must recognize that the techniques of terrorism can be used by anyone regardless of ideology or nationality, that mutually beneficial decision along will not solve the problem, but is a prerequisite to reversing current trends of escalating terrorism and to achieving world peace, security, and genuine detente.

Accession Number: ADA014159


Abstract: In recent years, concern over potential terrorist WMD acts in the U.S. has blossomed. Since 1995, the U.S. has passed legislation and published presidential decision directives designed to address the U.S. capabilities to respond to such an incident. Additionally, millions of dollars have been spent on domestic preparedness. Yet the numerous agencies involved (FEMA, DoJ, DoD, HHS, etc.) make a comprehensive, organized solution to the problem difficult. Focusing on the consequence management functions (incident identification, unity of effort, containment, treatment, security, fatality management and social response), the capabilities and shortfalls of local, state and federal assets are examined. This paper highlights significant progress in areas including treatment supply stockpiles and surge capability by the federal government and National Guard to support local efforts. However, the analysis also identifies gaps in local planning, public health surveillance, supply and equipment distribution, and lack of general public education. Additionally, the analysis indicates that initial efforts and financial support for overarching federal programs and surge capability have come at the detriment of local and state improvements. These shortfalls if not corrected may impair our ability to respond to a biological warfare incident.

http://handle.dtic.mil/100.2/ADA409305

Accession Number: ADA409305


Abstract: Within the United States National Security Strategy, December 1999, Weapons of Mass Destruction (WMD) and their possible use by terrorists are listed as a vital interest to our nation’s security. Excluded from this vital interest are terrorist acts that involve the use of conventional bombs and weaponry. The United States is focused on a Nuclear/Biological/Chemical (NBC) terrorist attack; but it should be equally prepared for the more likely domestic terrorist attack using conventional bombs.

http://handle.dtic.mil/100.2/ADA401425

Accession Number: ADA401425


Abstract: BioSimMER (Bioterrorism Simulated Medical Emergency Response) is a Virtual Reality-based mission rehearsal and training environment. BioSimMER employs contingency-oriented, multiple-path algorithms and MOESINIOPS focused on real-world operations. BioSimMER is network-based and immerses multiple trainees in a high resolution...
synthetic environment, including virtual casualties and instruments that they may interact with and manipulate. Trainees are represented as individuals by virtual human Avatars. The simulation consists of several components: virtual casualties dynamically manifest the symptoms of their injuries and respond to the intervention of the trainees. Agent transport analysis is used to simulate casualty exposures and to drive the responses of simulated sensors/detectors. The selected prototype scenario is representative of combined injuries anticipated in BW operations.

Report Number: SAND98-2533C
Accession Number: DE00001920


Abstract: This report considers the potential for terrorists to use biological weapons. It discusses the implications of recent trends in terrorism for the future use of biological agents and the reasons terrorists might be motivated to use them. It then identifies several constraints that inhibit terrorists from venturing into this new type of conflict and the factors that could break down these constraints. Finally, it establishes some broad characteristics that could identify the types of terrorist groups that might be more likely than others to use biological weapons. The findings suggest that, since the technological, logistical, and financial barriers to the use of biological agents are not insurmountable, a key determinant in the potential use of such agents will be the willingness of terrorists to engage in this new type of violence. Therefore, efforts to improve intelligence regarding terrorist group strategies and capabilities will become increasingly critical in the future.

Accession Number: ADA220598


Abstract: For the United States, responding to terrorism as both a threat and a reality will be one of the most complex challenges of the 21st century. The era of conventional weapons and conventional tactics is over. The arsenal of the world is now comprised of chemical, biological and nuclear weapons collectively known as weapons of mass destruction (WMD). Moreover, although all of these weapons have been deployed in some incident during the past sixty years, the tenor of their now threatened deployment has changed. To begin with, there are simply more weapons in the hands of more groups, both with and without national affiliations. The neighborhood of nations is un-united in its own political and diplomatic response to this reality. Additionally, while this fractured response may not be a causal factor, there is a greater willingness to use biological and chemical weapons, if not nuclear, as well. Thus, the proliferation of killing agents in the hands of groups whose goals and interests are either not known, not understood, or counter to those of the United States, makes the United States, with its huge scope of political, diplomatic, military and business interests, a terrorist target of the first order. That's the threat. Once some type of WMD has been used within the United States, the entire country will be responding to the reality of terrorism. Responding will be much more complex than merely initiating a massive terrorist attack. At the dawn of the millennium, the United States has only begun to develop processes, policies, inter- and intra-governmental alliances which will form the structure of an effective response. And that is only the first step. Parallel with that effort there needs to be the creation of procedures covering every conceivable scenario of massive terrorism, thus responding to an outbreak of anthrax (a biological agent) is a different type of undertaking than responding to Sarin (a chemical agent).

Accession Number: ADA377633

**Abstract:** The threat of biological terrorism, long ignored and denied, has heightened over the past few years as illustrated by the 1995 Aum Shinrikyo sarin attack in the Tokyo subway system. Many experts in the field of combating terrorism state that it is not "if" but "when", a terrorist will detonate a biological weapon(s) in the United States. If this is the case, is the Department of Defense prepared to support the U.S. Government's interagency effort to establish, maintain and enforce a quarantine operation? Specifically, is current doctrine, policy, and interagency infrastructure (specifically DoD) adequate to respond to an incident of biological terrorism (to support quarantine operations) in a major U.S. metropolitan city? As a result of this heightened threat, President Clinton announced a series of sweeping combating terrorism policy initiatives during his remarks at the United States Naval Academy Commencement on May 22, 1998. These initiatives included the signing of Presidential Decision Directives 62 and 63 (follow-up to PDD 39) which among other aspects, set-up the office of the National Coordinator for Security, Infrastructure Protection, and Counter-terrorism within the National Security Council. This was a watershed step in the Federal government's ability to finally assert a collective and coordinated (Interagency) effort in the area of combating terrorism. These landmark initiatives definitely went a long way to solidify the U.S. government's national commitment to protect the nation's critical infrastructure and population from the effects of terrorist's attacks involving weapons of mass destruction to include nuclear, chemical, and biological threats.

[http://handle.dtic.mil/100.2/ADA378460](http://handle.dtic.mil/100.2/ADA378460)

**Accession Number:** ADA378460


**Abstract:** President Clinton issued Presidential Decision Directive-39 (PDD 39) in June 1995 establishing the U.S. Policy on Counter-Terrorism that identified for the first time the use of biological weapons as Weapons of Mass Destruction (WMD). The United States shall give the highest priority to developing effective capabilities to detect, prevent, defeat and manage the consequences of Nuclear, Biological, and Chemical (NBC) materials or weapons use by terrorist. This study will discuss anthrax as a Weapon of Mass Destruction in the historical context of biological weapons. It evaluates the mandatory Anthrax Vaccine Immunization Program (AVIP), discusses the disease manifestations of Anthrax, describes Crisis Management and Consequence Management Operations, and reviews the Federal and State Response Plans to WMD. It concludes with recommendations on how the United States can mitigate the effects of anthrax as a Weapon of Mass Destruction.

**Accession Number:** ADA391109


**Abstract:** The purpose of this report is to provide a single, consistent set of unclassified data on the physical, chemical and toxicological properties of chemical and biological (CB) agents that might be released in an urban terrorism incident, and references for the sources of the data. These data are needed for predicting airborne concentrations of CB agents in and around buildings as a function of time and their potential toxicological consequences, and for developing mitigation plans. As new information emerges, we will update this reference document. In addition to the data tables, Appendix A summarizes definitions and units for airborne concentrations of CB
agents and related conversion factors and Appendix B presents more detailed information on the lethal dose and exposure levels for anthrax and sarin.

Report Number: LBNL-45475
Accession Number: DE2001767585


Abstract: The threat of terrorist attacks against United States (U.S.) interests has become a high-priority national security concern. These threats come from unconventional, asymmetrical, and transnational sources. The objective of these attacks is to inflict the greatest amount of death and destruction for the least investment in materials and manpower. The terrorists employ weapons of mass destruction because of their effectiveness in achieving this end. The US government has enacted legislation to meet this threat and placed the Department of Defense (DoD) at the forefront of these measures. One of DoD's most significant actions was the decision to integrate the Reserve Components (RC) into the domestic response of managing the consequences of attacks involving weapons of mass destruction. Many challenging issues arise related to accessing the Reserve Components for employment in this mission. These issues involve all of the force integration functional areas. This paper investigates structuring, training, and deploying. Also discussed is the fundamental issue of missioning of RC forces for CoM requirements. This paper will explore these issues and present some recommendations for changes in these force integration functional areas. These changes will facilitate the ultimate objective of accessing and employing trained and ready RC forces in this new and vital aspect of military assistance to civilian authorities.

http://handle.dtic.mil/100.2/ADA377636
Accession Number: ADA377636


Abstract: For years, the US military has prepared to fight against opponents armed with nuclear, biological, and chemical capabilities. These weapons of mass destruction (WMD) in the hands of traditional, state actors have been at the forefront of US defense planning. The end of the Cold War and the demise of the Soviet Union have allowed us to focus on new threats to US security. WMD terrorism will play a larger role in this new uncertain security environment for several reasons. First, transnational threats are no longer kept in check by a bipolar world. Secondly, terrorists may have greater access to WMD materials today than ever before. And thirdly, the information revolution has made not only weaponization knowledge freely available, but has also improved the organizational capabilities of diverse terrorist groups. This paper examines the WMD terrorist threat and addresses counterstrategies for reducing the risk. Conclusions include a need for heightened awareness of the threat. Recommendations include strengthening domestic and international controls and legal structures regarding WMD materials, using diplomatic pressure and economic means to deter or reduce the likelihood of WMD terrorism, and improving defensive and responsive capabilities.

http://handle.dtic.mil/100.2/ADA395718
Accession Number: ADA395718


Abstract: The cover design illustrates chemical protective ensembles at the beginning of the century (World War I era chemical protective ensembles, shown on the left) and at the end of the century (the currently fielded Joint Service Lightweight Integrated Suit Technology ensemble with
the M40 Protective Mask, shown on the right). The basic concept has changed little over a century (that is, prevent contact with the toxic agents). However, there have been significant improvements in the materials providing protective masks and ensembles that are more effective in protecting the individual, more durable, and less cumbersome for the wearer.

http://handle.dtic.mil/100.2/ADA391618
Accession Number: ADA391618


Abstract: The National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, Title XVII, Chemical and Biological Weapons Defense, section 1703, directed the Secretary of Defense to submit an assessment and a description of plans to improve readiness. The DoD objective is to enable our forces to survive, fight and win in NBC contaminated environments. Discussed are new management objectives impacted by declining resources and force structure versus an ever changing threat environment.
Accession Number: ADA283520


Abstract: In this present world climate, chemical and biological warfare (CBW) is a realistic threat to U.S. Air Force personnel. Medical care for conventional and chemical casualties in the CBW environment requires individual protection, group protection, and decontamination as well as supply and patient transfer through contaminated areas. CBW stirs terror in individuals both because of the particular psychological fears it arouses and the tremendous difficulties presented by the need to continue to operate after an attack. Recommendations derived from CBW research cover the issues of command (e.g., maintenance of communications and morale, and command policy in the face of mass casualties), medical care (e.g., alcohol use as a risk factor in CBW environment, low dose exposure, internal SCPS-M management, and unique stressors of the CBW environment), performance (e.g., group responses to contamination and isolation effects on performance), and training (e.g., unit reconstitution following heavy losses, grief leadership, buddy care, development of first aid capability within squadrons, crews, and work units, maintenance of cohesion in flying and ground crews, and training for commanders in command posts). These recommendations should serve as the basis for the development of command policy, training scenarios, medical command and medical care procedures and the

**Abstract:** This monograph includes an edited transcript and an executive summary from the conference, *Planning for Bioterrorism: Behavioral and Mental Health Responses to Weapons of Mass Destruction and Mass Disruption*. The conference was held July 14-16, 2000. The conference addressed the history, nature, and threat of biological agents. Agents were described to better appreciate the behavioral implications for illness, disease, prevention, and vaccination. Community and individual responses to potential bioterrorist events were described. Future approaches to the management and treatment of behavioral and mental health issues following exposure to biological agents and bioterrorism were discussed. The conference concluded with recommendations for policy, communication, education and training, and research.


**Abstract:** In the fall of the year preceding the Sept 11, 2001 terrorist attack on New York City and the Pentagon in Washington, DC, and subsequent bioterrorist anthrax attacks, plans were begun for our conference, "Planning for Biological Events: Responses to Terrorism and Infectious Disease Outbreaks." The goal of this conference was to address the state and local needs in preparation for behavioral and mental health consequence management after a bioterrorist attack. The importance of the conference was evident as it was held in October shortly after bioterrorist anthrax attacks had begun in New York City and Washington, D.C. The conference brought together national and international experts in disaster mental health, the social sciences and health care and policy planners from states and regions across the nation. The result has been a detailed consideration of the needs of state, local and regional as well as national contributions to mental health care needs after a bioterrorist attack. Planning for mental health and behavioral consequence management after a bioterrorist attack must address the nation as a whole. The goal of terrorism is to disrupt the continuity of the nation by instilling fear and decreasing safety. This affects not only those who may develop mental health problems but also those who continue to work and care for their families and loved ones while experiencing an altered sense of safety, increased fear and arousal and concern for their future. Consequence management for mental health begins with considering the needs of the nation as a whole and then moves to the needs of those directly exposed and those who may have been vulnerable before a bioterrorist attack and now bear the additional burdens of lost supports and increased demands.


**Abstract:** Despite major efforts in reducing worldwide nuclear and chemical capable threats, biological weapons require the same amount of attention if not more from the North Atlantic Treaty Organization. NATO must highlight the threat of biological warfare in current policies in order to educate political, military, and civilian leaders on biological warfare issues, deter the
employment of biological weapons, and increase a sense of security within the Alliance. Refocusing the intelligence communities towards biological warfare will be of an enormous advantage for the Alliance. New policies will enhance the efforts of intelligence agencies and increase the awareness of the ominously growing biological warfare threat.

Accession Number: ADA323688


Abstract: This paper will review the strategic events in biological warfare development since the 1972 Biological Weapons Convention (BWC) and recommend methods to mitigate the dangers of using disease as a weapon. Biological warfare (BW) is cheap, efficient, unselective, and here. BW is an ideal terrorist weapon. The terrorist acts of 11 September 2001 demonstrated the level of sophistication of terrorists and state sponsorship of terrorist organizations. The number of countries possessing biological weapons has grown significantly since the signing of the 1972 BWC. A network of protection against BW attacks by either rogue states or non-state actors can be built. The United States must support and strengthen the BWC Protocol, cooperate with the former Soviet states to reduce the proliferation to rogue states and sub-state actors of biological weapons and biological weapon technology. The U.S. must improve rapid epidemic surveillance and pathogen detection. The U.S. must improve active and passive protection of measures for the military and civilian populace. Finally, the Office of Homeland Security in cooperation with the Department of Defense must organize a unified command plan for a coordinated response to large scale BW attacks.

Accession Number: ADA402062


Abstract: The threat of a catastrophe from terrorist’s use of a biological weapon is increasing in probability in light of events such as the 1995 sarin nerve gas attack on the Tokyo subway, disclosure regarding the former Soviet Union’s sophisticated bioweapons program, and discoveries of Iraq’s large-scale efforts to produce and weaponize biological agents, public awareness about terrorism as certainly heightened during the Y2K alerts and the arrest of Algerians linked to Osama bin Laden at the United States-Canadian border, but also may be a result of increasingly public awareness through books, such The Cobra Event and Biohazard programs, such as ABC’s “Biowar”.

http://handle.dtic.mil/100.2/ADA406250

Accession Number: ADA406250


Abstract: The threat or use of chemical or biological weapons is a likely condition of future warfare-including the early stages of war, to disrupt operations and logistics. That threat, whether perceived or real, has haunted U. S. military leaders and planners in every conflict since WWI. Now that threat has reached the shores of the United States. For many years, terrorist acts aimed at US citizens or interests were conducted outside of American borders. The genases of modern terrorism in the U.S. were the bombing incidents of the New York World Trade Center and the Federal Building in Oklahoma. These bombing incidents were the largest terrorist attacks ever conducted in the continental U.S. These bombings demonstrated the real and deadly threat of terrorism to America. This monograph examines the U.S. domestic preparedness program as it relates to chemical and biological weapons. By investigating the terrorist threat, proliferation of weapons of mass destruction and the domestic preparedness program, it will show that the U.S.
has demonstrated the 'will' and need for such a program but still lacks resolve to fully implement what resources are required.

Accession Number: ADA357324


Abstract: In June of 1995, President Clinton issued Presidential Decision Directive-39 (PDD-39), U.S. Policy on Counter-Terrorism. This document set the stage for the most recent U.S. policy on Combating Terrorism and identified for the first time the use of biological weapons as Weapons of Mass Destruction (WMD). It also established responsibilities within the government for fighting this threat. The United States shall give the highest priority to developing effective capabilities to detect, prevent, defeat, and manage the consequences of Nuclear, Biological, and Chemical (NBC) materials or weapons use by terrorist. In February of 1998, in response to Iraqi non-compliance and threats to the stability of the region, U.S. and allied forces deployed to the SWA region. For the first time since the Gulf War, Americans were directly faced with the possibility of biological weapons usage.

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http://www.cbiac.apgea.army.mil/

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Abstract: The United States Government has identified of highest priority the development of effective capabilities for preventing and managing the consequences of terrorists use of chemical, biological, radiological, nuclear and high-yield explosive (CBRNE) materials and weapons on the American homeland. The Department of Defense (DOD) and Army both have a significant role in this effort. This paper will look at those roles and focus on the Army’s ability to support the Homeland Security (HLS) CBRNE terrorist threat in the areas of agent sampling, detection, identification, and decontamination operations. Specifically, it will address the Reserve Components (RC) capability for responding to an incident and demonstrate the value-added of Active Component (AC) forces. The conclusion is the RC cannot fulfill the Department of the Army’s commitment to this important mission by itself; AC forces must assume a more prominent role to ensure an adequate DOD response in this critical area.

http://handle.dtic.mil/100.2/ADA388953

Accession Number: ADA388953


Abstract: This note reviews trends in international terrorism and nuclear incidents abroad during the period 1980-1981. From the perspective of protecting U.S. nuclear and energy facilities from hostile attack, information on both of these aspects of terrorism is useful. Incidents of international terrorism, particularly those that require high levels of skill and organization, demonstrate the types of capabilities and weapons that adversaries might bring to bear against nuclear or other energy facilities. Also, overall trends in global terrorism may lead to the creation of a climate that is conducive to nuclear and energy-related crime. More specifically, the record of nuclear-related incidents overseas provides valuable information about the possible motivations, capabilities, actions, and targets of potential adversaries of nuclear facilities in the United States. Section II analyzes incidents of international terrorism. Section III examines nuclear incidents abroad. Appendixes A and B provide, respectively, chronologies of significant international terrorist incidents and nuclear-related incidents abroad during 1980-1981.

Accession Number: ADE750878


Abstract: The potential for terrorists’ use of weapons of mass destruction (WMD) threatens Americans every day. To many nations and groups, their only means to counter the United States (U.S.) is with nuclear, biological, or chemical weapons. According to most experts, terrorists use of
WMD is no longer a question of ‘if’ they will be used, but ‘when.’ When domestic capabilities were found to be lacking in this regard, Congress enacted legislation, Public Law 104-201, and named the National Guard as the primary responder to domestic WMD events. It is evident gaps and shortfalls remain in the National Guard’s (NG) ability to respond to domestic WMD attacks. The purpose of this paper is to examine the critical gaps and shortfalls encountered by the CSTs since their activation. This is done by investigating any available materials concerning the NG involvement in the program, identifying the critical gaps and shortfalls encountered by the CSTs, and to coming up with recommendations to correct them. This paper examines current U.S. policy and strategy to counter terrorist uses of weapons of mass destruction. The second section will examine the CSTs infrastructure, the third section identifies and discusses the predominant gaps and shortfalls encountered by the teams. The final section details current shortfalls and recommendations to improve the overall CST capability.

http://handle.dtic.mil/100.2/ADA407098
Accession Number: ADA407098

Abstract: The possibility of a terrorist attack on the United States, utilizing a weapon of mass destruction (WMD) has increased significantly over the past decade. This paper analyzes the effects of a terrorist attack on the United States using a WMD with a biological agent. The paper addresses six major areas. First, it examines the feasibility of such an act. Second, it reviews health-related implications. Third, it examines the economic effects of such an occurrence in a large metropolitan area. Fourth, it identifies the response requirements needed to react to such a catastrophe. Fifth, it looks at the impact on civil structure and order. Finally, it identifies resources currently available to respond to a WMD attack and provides recommendations for systems still needing development and implementation in order to respond appropriately and effectively to this kind of terrorist activity.
Accession Number: ADA346005

Abstract: United States Military Forces continue to refine and modernize their capability to react to and operate in the presence of weapons of mass destruction (WMD), including nuclear, chemical, and biological weapons. While this threat remains substantial, effectively dealing with it on the modern battlefield remains problematic. On the contrary, the WMD threat to domestic population centers and their infrastructure is growing at an alarming rate. Furthermore, the ability of local governments and emergency responders to effectively deal with almost any use of nuclear, chemical, or biological weapons is virtually non-existent. This paper examines the menace of domestic WMD use and the resources available to recover from their use. Analysis concludes that the government, in particular the Department of Defense, should play a larger role in preparing state and city authorities for possible WMD use and recovery.
Accession Number: ADA327426

Abstract: Success in preventing, preparing for and responding to a terrorist attack in the United States involving conventional or non-conventional weapons of mass destruction (WMD) will depend upon the establishment and maintenance of a coordinated crisis and consequence management infrastructure. Emergency responders who arrive first on the scene, as well as those in the medical profession who provide interim treatment, must be adequately trained, equipped, and exercised to ensure their ability to effectively respond and conduct relief and
recovery operations as part of a multi-agency team. The federal agencies recognize that the
response to bioterrorism will be qualitatively different from a chemical event and will primarily
involve the public health and medical communities. Events within the United States and against
Americans abroad have demonstrated the need to enhance the nation's domestic preparedness
activities. The United States Congress and the President have recognized the need for federal
programs to assist state and local jurisdictions in preparing for the threat of WMD terrorism.
Accession Number: PB2001104993

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Abstract: This project defines the terrorist threat to use weapons of mass destruction in the
United States. Several chemical and biological agents that could be used in the attack are
described. Current statutes are researched to insure the legality of using the military in combating
terrorism here in the United States. An examination of current legislation and security strategies
reveals the growing concern senior leadership feels toward this issue. Finally, the National
Defense Panel recommendations using the National Guard and Army Reserve in consequence
management are analyzed. The analysis confirms the appropriate element of the military to
perform this mission should be the National Guard.
Accession Number: ADA346389

Brown, Michael T. Terrorist Use of Weapons of Mass Destruction Within the
United States: Asymmetric Warfare Paradigm in the 21st Century. Carlisle
Abstract: The use of Weapons of Mass Destruction (WMD) by terrorists within the United States
presents a clear and present danger to national security. In virtually every region of the world,
nation states are arming themselves with WMD. Coupled to the rising spread of WMD is the
growing list of nations sponsoring worldwide terrorism. The proliferating nature of this combined
threat of WMD and terrorism is changing the paradigm of asymmetrical warfare as we approach
the new millennium. Reviewing the U.S. Government responses to terrorism and WMD reveals a
fragmented framework that addresses these threats separately, without one federal agency in the
lead. The world witnessed this new paradigm of asymmetrical attack when the Japanese religious
cult, Aum Shinrikyo or Supreme Truth, attacked the Tokyo subway system using the chemical
nerve agent Sarin on 20 March 1995. The Department of Defense should take action and assign
this critical mission to a Joint WMD response force to support the federal, state and local crisis
response framework.
http://handle.dtic.mil/100.2/ADA326609
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Campbell, James K. Weapons of Mass Destruction and Terrorism:
Proliferation by Non-State Actors. Monterey, CA: Naval Postgraduate School,
Abstract: Executive Order No. 1298 signed by President Clinton on November 14, 1994
declared a national emergency with respect to the unusual and extraordinary threat that
proliferation of weapons of mass destruction (those weapons categorized as nuclear,
chemical or biological) poses to the national security, foreign policy, and economy of the
United States. In the wake of the Cold War, a new world disorder seems to be emerging
wherein the legitimacy of many states is being challenged from within by increasing non-state
calls for self determination from the likes of religious cults, hate groups, isolationist
movements, ethnic groups, and revivalist movements. These movements often prey on the
insecurities of the population, offering to fill psychological, social, political, or religious security
needs of those who would join them. Religious oriented groups appear to share a common ideology which rejects existing social, economic, and political structure demanding a drastic revision of the world - a world where they become the authoritarian, dominant influence. These are the Post-Modern Terrorists who possess a ripeness to threaten use of weapons of mass destruction. This study presents an argument suggesting that terrorist groups operating under the veneer of religion are truly the most likely candidates to threaten use of mass destruction in a mass casualty causing terrorist act.

http://handle.dtic.mil/100.2/ADA323947
Accession Number: ADA 323947


Abstract: The threat of terrorism has encroached our national borders and has created a heightened sense of vulnerability among many Americans. President Clinton has stated, fighting terrorism is and will for a long time to come be one of the top priorities of the United States. Two acts passed in 1996 have strengthened our fight against terrorism, the Antiterrorism and Effective Death Penalty Act and the Defense Against Weapons of Mass Destruction (WMD) Act. The Defense Against WMD Act designated the Department of Defense the executive agent for coordination of assistance in responding to threats involving biological and chemical weapons. The focus of this research project will be to follow this trail and analyze DOD's course of action in meeting their obligation and assess the probability that DOD will maintain this function after the 1 October 1999 legislative mandate.

http://handle.dtic.mil/100.2/ADA341465
Accession Number: ADA341465


Abstract: The prospect of chemical, biological, radiological, and/or nuclear (CBRN) terrorism is recognized by the United States government as an acute security challenge, Particularly following the tragedy of September 11, 2001, but also for several years prior, senior U.S. officials and official government reports have underscored the likelihood, over time, of terrorist organizations coming into possession of such unconventional materials, and the prospect of their use against the United States homeland, U.S. forward-deployed forces, or U.S. friends and allies. Toward the end of the last century, this concern was heightened, among other events, by the Japanese cult Aum Shinrikyo's 1995 use of sarin in the Tokyo subway. The combination of increasing availability of technology and expertise, a perceived mass-casualty motive structure for particular terrorist organizations, the impending end of a millennium, a spate of conventional attacks against U.S. assets - World Trade Center, 1993; Oklahoma City Federal Building, 1995; American embassies in Tanzania and Kenya, 1998; and the U.S.S. Cole, 2000 - and both the widespread suspicion of terrorists seeking CBRN weapons and the actual sub-national employment of a chemical agent all contributed to this general assessment. More recently, the prospective linkage between terrorist organizations and state actors with weapons of mass destruction programs has become an acute security concern. Indeed, this nexus is central to the logic of the emergent 'Bush Doctrine'. As Secretary of Defense Donald Rumsfeld testified in May 2002, 'we have to recognize that terrorist networks have relationships with terrorist states that have weapons of mass destruction, and that they inevitably are going to get their hands on them, and they would not hesitate one minute in using them. That's the world we live in'.

http://handle.dtic.mil/100.2/ADA404213
Accession Number: ADA404213

*Abstract:* As the 20th century draws to a close, the United States has emerged as the world's only superpower. International terrorism is increasing. No other country possesses the wherewithal to challenge the United States on the conventional battlefield. For many countries whose ambitions counter to the U.S.'s national interests, terrorism is an attractive option. Moreconcerting is the increasing availability of weapons of mass destruction to rogue nations andradical terrorist organizations. They now pose a formidable threat. This paper discussed theevolution of international terrorism and the frightening proliferation of nuclear, biological, andchemical weapons. Furthermore it analyzes our national security and military strategy forcombatting terrorism. This paper concludes that terrorism has the potential to catastrophicallyimpact on the American way of life. Therefore, counterterrorism must become a national securitypriority for the 21st century.

http://handle.dtic.mil/100.2/ADA326915

Accession Number: ADA326915


*Abstract:* As the remaining superpower in the post-Cold War world, the U.S. needs toreevaluate its policy toward the growing threat to U.S. national interests and the effects ofweapons of mass destruction (WMD), specifically nuclear devices, and their use by terroristgroups against U.S. interests abroad. As the world reacts to the implosion of the former SovietUnion, there are increased numbers of nations and possibly terrorist groups trying to becomeplayers in the international arena. This study describes the ease of obtaining the scientificknowledge, plans, and materials to enable a terrorist's construction of a nuclear device. It alsoanalyzes motivation of terrorist groups, concluding that a nuclear weapon, capable of inflictingviolence in the extreme, fulfills the terrorist's goal of violence in support of a political agenda or toinspire radical change. Given the guidance from the national level, this study proposes a series ofpolicy options available to the NCA for application in an aggressive counterproliferation policy.Finally, the U.S. must rapidly reorganize its counterproliferation structure and methods tostreamline a more aggressive approach that is recognized and feared by potential nuclearterrorists; augment current political efforts with a clearly defined counterproliferation militarymission and associated doctrine.

http://handle.dtic.mil/100.2/ADA350033

Accession Number: AA350033


*Abstract:* Terrorist use of weapons of mass destruction threatens Americans and our armedforces every day. To many nations and groups, their only means to counter the United States iswith nuclear, biological, or chemical weapons. The terrorist use of weapons of mass destruction isno longer a question of "if" they will be used, but a question of "when" they will be used. Thispaper looks at the US military capability to counter terrorist use of weapons of mass destruction.It describes the terrorist threat to US forces and motives and reasons terrorists would use thesetypeof weapons. Our current national policy, strategy and doctrine highlight the problem, butshow a need to improve interagency coordination and cooperation. On the military level,combating the threat is an integral part of our strategy but needs increased emphasis at theplanning level. Capabilities exist to deter or counter the threat; protect our forces; and sustain andoperate after an NBC attack. But countering a terrorist threat presents unique challenges to futureleaders and requires improvements in intelligence, equipment, training and education.

Abstract: The demise of bipolarity created new security concerns for the United States. Terrorism now thrives in the new world environment. While much has been written on terrorism, the specter of nuclear terrorism in the United States has received little attention. Nuclear terrorism cannot be looked at through the traditional nuclear weapons paradigm nor can it be viewed within the confines of the traditional terrorism paradigm. There currently are two perspectives on nuclear terrorism: the optimists, who do not see it as a threat, and the pessimists, who see it as inevitable. Each view has its merits but neither alone can explain this security concern. Merging of the two views is required to understand the motivational considerations behind this potentially horrific problem. A brief history of U.S. policies on nuclear weapons and terrorism is offered to explain why there has not been a U.S. policy on nuclear terrorism. The possibility of nuclear terrorism is real. A better understanding of the nuclear terrorist mindset is required if effective policies are to be developed.


Abstract: Information discovered as a result of the current war on terrorism suggests a terrorist-led attack on the U.S. homeland involving weapons of mass destruction (WMD) remains a very real possibility. Some believe the U.S. faces its greatest WMD threat since the 1962 Cuban Missile Crisis, but many discount the effect deterrence can have on terrorist groups. Deterrence, however, is an attractive option in the costs to implement a deterrence-based strategy are minimal when compared to defending the entire homeland or defeating all elements of a threatening terrorist organization. Little research, however, has been done to evaluate the effectiveness deterrence can have on a group bent on harming the U.S. with WMD.


Abstract: The Department of Defense is also in the process of reevaluating its contribution to homeland security in the aftermath of the September 11 attacks. Of particular concern is the DoD plan for assisting civilian authorities in consequence management - the measures taken to protect public health, safety, and the environment, to restore essential government services, and to provide emergency relief to governments businesses and individuals affected by the consequences of terrorism. A significant DoD contribution to the consequence management aspect of homeland security has been the development of the National Guard Weapons of Mass Destruction - Civil Support Team (WMD-CST), a new type of unit designed to provide civilian authorities military support in response to WMD attacks involving the use of nuclear, biological, chemical, or radiological (NBCR) weapons. The development of the WMD-CST concept has raised considerable debate over the merits of the new organization. Previous authors argued that the WMD-CST is incapable of providing timely support to local authorities. Others take the criticism of the WMD-CST a step further, calling into question the ability of the Department of Defense to provide personnel sufficiently trained to provide meaningful support to civilian first
responders. Positive reviews emphasized the WMD-CSTs' ability to respond rapidly to events, because of their ability to operate under Title 32 or Title 10 authority.

Abstract: A number of recent studies have concluded that the United States is vulnerable to attack from terrorists armed with weapons of mass destruction (WMD). Depending on the circumstances, a terrorist attack with nuclear or radiological weapons could cause more destruction and casualties than one with other types of WMD. Four strategies for improving U.S. capabilities to counter nuclear or radiological terrorism are often proposed: (1) to improve intelligence capabilities to gain better knowledge of terrorist intentions and capabilities; (2) to improve security measures in nuclear facilities throughout the former Soviet Union (FSU) and elsewhere, so terrorists will have more difficulty acquiring nuclear materials; (3) to deter terrorists from conducting nuclear or radiological attacks, particularly in the United States; and (4) to improve America's response capabilities to terrorists that have already acquired nuclear or radiological weapons. This thesis evaluates current U.S. capabilities and activities in each of these areas and provides recommendations for improving America's counter-terrorism strategies to defend against terrorists armed with nuclear or radiological weapons.

Abstract: This thesis examines Department of Defense involvement in U.S. preparedness to manage the consequences of a nuclear, radiological, biological, or chemical terrorist attack against its cities. It analyzes the establishment and implementation of the Defense Against Weapons of Mass Destruction Act of 1996 which directed the Department of Defense to assist in the training of state and local emergency response agencies involved in consequence management activities. The historical analysis focuses on the proliferation of weapons of mass destruction since the dissolution of the Soviet Union, major terrorist incidents since 1993, international standards, and legislative and executive efforts undertaken to combat terrorism up to 1996. The $150 million Nunn Lugar Domenici amendment to the FY-97 National Defense Authorization Bill is examined in detail from introduction on the Senate floor to eventual passage and enactment. Problems and policy issues associated with resourcing and implementing the resulting Domestic Preparedness Program are treated. Although the DoD was given responsibility for implementing city training, an interagency effort ensued involving the Public Health Service, Environmental Protection Agency, Federal Bureau of Investigation, Federal Emergency Management Agency, Department of Energy, and others. Potential weaknesses may materialize due to several characteristics of the Domestic Preparedness Program, including its novelty and uniqueness, the unorthodox legislative process by which it was established, and its complex organizational structure and temporary nature.

Abstract: The threat of terrorist use of weapons of mass destruction against the United States or its allies has significantly increased since the demise of the Soviet Union in 1989. The U.S. has yet to come to grips with the strategic implications this places on its national security strategy and what this means on how we fight wars and what is considered war. Terrorist use of WMD may be the most significant threat the U.S. faces in the near future. We need to develop a cohesive policy and ensure that resources are dedicated to combating this issue.

http://handle.dtic.mil/100.2/ADA326652

Accession Number: ADA326652


Abstract: The author examines the changing nature of terrorism. In comparison to professional, terrorists pursuing specific political or ideological objectives, today's amateurs often act from religious or racial convictions. Their objective may be to kill large numbers of people. They are less predictable and, therefore, more difficult to apprehend before the incident occurs, and have lethal devices ranging from the relatively simple fertilizer bomb to biologically-altered viruses. Since the United States will remain an attractive target, we need to understand and prepare for this new kind of terrorism.

Accession Number: ADA283936


Abstract: The purpose of this paper is to answer the following question. What factors should senior United States government officials be familiar with, and take into consideration, when making time-constrained decisions regarding the type and extent of a United States government response to a Chemical, Biological, Radiological or Nuclear (CBRN) event overseas? In determining these factors, the author researched salient books, periodicals, published and unpublished papers, and credible Internet sites. The author also conducted telephonic interviews and electronic mail exchanges with government officials in the fields of Weapons of Mass Destruction terrorism and Consequence Management. The author argues that the United States has developed significant CBRN response forces, but is hamstrung in projecting a timely response to an event overseas by a fragmented decision-making process at the strategic level. The author also proposes that national interests drive the decision to respond to a foreign nation's request for assistance, and that interests are based predominantly on political and economic concerns.

http://handle.dtic.mil/100.2/ADA409304

Accession Number: ADA409304


Abstract: The millennium began with the United States more concerned than ever about the threat of terrorism in "Hometown USA". The Reserve Component (RC) has played a major role in the defense of this nation for more than a quarter of a century and will have an extensive role in defending against the terrorist threat. This report will examine how the Army National Guard (ARNG) and the Army Reserve (USAR) have stepped forward to assume their roles in national defense. The ARNG and the USAR were once referred to as weekend warriors with little credibility with the Active Component (AC). They were seen as untrained and unfit for modern warfare. However, over the past twenty-five years, the myth has faded. The RC has proven time and time again, deployment after deployment, that it can hold its
own with the AC. The history of the ARNG and the USAR is briefly discussed in order to give a clearer understanding and appreciation of their contributions to national defense. A brief review of how the missions have evolved since the seventeenth century, and prior to the second amendment to the constitution that allowed states to establish the National Guard, will also be discussed. Evolution of the ARNG and the USAR, and their missions over the last decade has fully integrated the Army into one Army. The chief of staff of the Army said, 'We are The Army totally integrated into oneness of purpose - no longer the Total Army, no longer The One Army, The Army, One Army'. This paper will detail the ARNG and the USAR roles in weapons of mass destruction (WMD) consequence management of homeland defense, and will briefly examine the training, equipment, and the ARNG response role of chemical and biological threats.

Abstract: In response to the growing threat of terrorism with chemical, biological and nuclear weapons, the United States government has developed a national concept of operations for responding to their use. This concept of operations consists of multiple agencies at the local, state and federal levels reacting to an incident with no clear operational organization for efficient command and control and effective response. A step in the right direction to resolve this potentially critical problem is to develop an organization under a single commander with the responsibility for domestic preparedness, response, and consequence management. Only with the proper command organization and subsequent unity of effort can we ensure the most effective employment of the many forces and resources currently tasked with homeland defense against and response to weapons of mass destruction.

Abstract: Weapons of Mass Destruction (WMD) in the hands of non-state actors are a major threat to U.S. security. Efforts to counter the threat are disjointed. Strategy remains overly reliant upon non-proliferation without adequately implementing possible preemptive and response alternatives. Deterrence is failing and operational capabilities to respond are hampered by bureaucratic complexity and dogmatic institutional nearsighted economics. Hence, America is vulnerable and at risk. This paper reviews the WMD threat and examines policy and strategy weaknesses. The paper then discusses U.S. response strategies and highlights current methods for establishing command and control Headquarters. Finally, it recommends an enhanced response strategy by creating a Standing Joint Task Force Headquarters to address terrorist induced WMD incident consequences.

Abstract: The twentieth century has seen as unprecedented explosion in the manufacture and use of armaments. This has been accompanied by steady increases in the number, length and lethality of conflicts. Both trends have been accelerating since the end of World War II, especially with regard to the so-called Third World. The focus of most arms control efforts has been on
nuclear, chemical and biological weapons, with some secondary concern in the last two decades over sophisticated major conventional armaments. Virtually unnoticed have been the massive quantities of simple, inexpensive arms produced all over the globe and traded in channels overt, covert, and illegal. These items remain useful for many years. Equipment such as mortars and rifles find application in war after war, while ammunition keeps its explosive nature until it detonates. So the world, especially the Third World, has an ever growing sea of cheap arms, the old stuff still dangerous, more added every day. Review of selected conflicts, including Cambodia and Afghanistan, illustrates the depth of the trouble we are in and suggests some possible future directions in order to avoid drowning in this lethal sea.

**Accession Number: ADA280611**


**Abstract:** Despite the best-combined efforts of the world's five major powers (United States, Great Britain, France, Russia, and China), third world countries, rogue radical groups, and potential terrorist organizations continue their alarming proliferation of weapons of mass destruction (WMD) technologies. According to Secretary of State Madeleine Albright, proliferation of weapons of mass destruction are “the most overriding security interest of our time.” Supporting her statement, in recent testimony before the Senate Intelligence Committee, the directors of the Central Intelligence Agency and the Defense Intelligence Agency agreed that the proliferation of weapons of mass destruction is the biggest threat to national security. LTG Patrick M. Hughes, director of the DIA, explained “because chemical and biological weapons are generally easier to develop, hide, and employ than nuclear weapons," they will be “more widely proliferated and have a higher probability of being used over the next two decades."

[http://handle.dtic.mil/100.2/ADA366273](http://handle.dtic.mil/100.2/ADA366273)

**Accession Number: ADA366273**


**Abstract:** Specific items addressed are past and future terrorism concerns, including terrorist incidents, problems of hostages, terrorist arsenals, plausibility of mass destruction terrorism, conventional weapons, unconventional weapons, bacteriological warfare as a terrorist weapon, chemical warfare agents and technological challenges ahead.

**Accession Number: ADA114399**


**Abstract:** We are in a new era of warfare, one in which our warfighting and strategy paradigms must change due to unconventional threats our nation faces and is further complicated by evolving technology, emerging states, rogue nations, and terrorist groups. With the fall of the Soviet Union, our old nemesis has been beaten, but many of the impulsive entities it formerly sponsored and controlled are now unbridled to act on their own. We face terrorism abroad daily and it now reaches us within our own borders. This paper explores military options to acts of aggression against our citizens, forces and allies that our tactical nuclear weapons stockpile previously held in check during the Cold War. I do not advocate totally removing the tactical or limited nuclear options or doing away with our strategic nuclear shield, only that we have the means to reduce the tactical nuclear stockpile size given new conventional weaponry technology and its ability to pick up some of the missions/targets previously assigned to nuclear weapons. To develop my premise, I will first review the historical account of our nation's nuclear policy, explore
emerging threats the United States and our allies face, examine new conventional weapons, and finally, provide a range of military options to acts or threats of terrorism or warfare against the United States or our allies.

http://handle.dtic.mil/100.2/ADA407719
Accession Number: ADA407719


Abstract: This thesis examines terrorist acts involving the use of weapons of mass destruction (WMD) against unsuspecting civilians by the Aum Shinrikyo and Rajneeshe cults. The proliferation of WMD (i.e. nuclear, chemical, and biological weapons) has created a concern that terrorists might use WMD. Despite obvious signs, these groups were not identified as terrorists until after they committed terrorist attacks. This thesis identifies common characteristics of terrorists that have used WMD in the past and generates indicators of non-state actors that might commit WMD terrorism in the future.

Accession Number: ADA341438


Abstract: This paper addresses the threat posed by weapons of mass destruction as it is understood following the events of 11 September 2001 and the anthrax attacks directed at congressional and media offices in the weeks that followed. The various types of risks are explored with emphasis on chemical agents, biological pathogens, and radiological weapons. Then, the planned governmental response is evaluated with concentration on the role of the Department of Defense and the Armed Forces with a particular focus on the Reserve Components. Based on this analysis, conclusions and recommendations are offered in the context of better ensuring that the planned response to possible employment of weapons of mass destruction is adequate to meet the threat.

http://handle.dtic.mil/100.2/ADA406480
Accession Number: ADA406480


Abstract: The horrific terrorist attacks of September 11, 2001 on the U.S. homeland highlighted the threat that terrorism poses to U.S. national security. DoD operates globally a large network of Intelligence, Surveillance, and Reconnaissance (ISR) assets which could be brought to bear in the effort to combat terrorism. The geographic Commander's-in-Chief (CINC)s set the priorities for the intelligence networks in their Areas of Responsibility (AORs) according to their interpretation of the strategic guidance from the National Command Authority (NCA). A key tenet of the new strategic setting is the grave threat to national security posed by terrorism, potentially using Chemical, Biological, Radiological, Nuclear, or Enhanced High Explosive (CBRNE) weapons. This fact, coupled with the new strategic mandate that sets defense of the homeland as the highest priority for the U.S. military, dictates that each of the geographic CINCs set combatting terrorist use of CRBRNE weapons as the highest priority for their intelligence networks. The success or failure of this operational intelligence effort could have major strategic effects.

http://handle.dtic.mil/100.2/ADA402235
Accession Number: ADA402235

**Abstract:** Weapons of Mass Destruction (WMD) and Force Protection are two critical topics rapidly gaining attention throughout the world. An increasing recognition of the vulnerability of our citizens and of our military forces due to recent terrorist attacks has caused the President of the United States and Congress to take several actions to improve preparedness. This paper examines what a minimum basic response capability for all military, police and security forces should be to ensure at least some chance for their own survival and possible early warning and protection of others in the case of a domestic WMD incident. The capabilities of awareness, protection and detection are studied including the aspects of training and equipment. The paper shows that the WMD threat to America is significant and increasing and makes several recommendations including that all first responders receive training to increase their awareness and understanding of WMD, the adoption nationally of a minimum personal protection equipment standard for first responders to accomplish EPA level C protection, and the development of a WMD response capability modeled on national level asset capability for all cities, counties, or states.

http://handle.dtic.mil/100.2/ADA363586  
Accession Number: ADA363586


**Abstract:** Many policymakers and scholars contend that nuclear weapons remain inaccessible to terrorists, and that nuclear means are inconsistent with or disproportionate to their goals. Nevertheless, the historical pattern of nuclear proliferation suggests a trend toward nonstate actor acquisition, a notion supported by recent developments in the black market. Additional evidence suggests that some specific groups have expressed an interest in nuclear weapons. This thesis proposes that there is a terrorist demand for nuclear weapons. Further, its findings suggest that the possibility of terrorist acquisition has grown; and that these nonstate adversaries will enjoy significant advantage over states during nuclear crisis. Terrorists, like states, pursue political objectives and have similar concerns regarding power and security. Lacking state resources, terrorists employ instrumental targeting in pursuit of those objectives, while remaining relatively invulnerable to retaliation. This dynamic will encourage terrorists to acquire and exploit nuclear potential, thereby overturning traditional theories of deterrence. Wishful thinking about nuclear terrorism has discouraged thoughtful analysis of this dilemma. The prospect is sufficiently dire that a preventive campaign must be launched to stop terrorist acquisition of nuclear capabilities. Policymakers must also prepare for the possible failure of preventive efforts, and search for options that may mitigate nuclear terrorism.

http://handle.dtic.mil/100.2/ADA294784  
Accession Number: ADA294784


**Abstract:** The proliferation in quantity and quality of weapons of mass destruction serve as a threat of great consequence to U.S. operational forces. Operational options for action are explored within the national military strategy concepts of forward presence, deterrence, and crisis/regional contingency response. Three questions and associated issues related to operational art are posed for each concept: (1) what condition must be produced to achieve the strategic goal, (2) what events will most likely result in the desired condition, and (3) how should resources be applied to produce those events. The resulting analysis offers the following conclusions: (1) complementary efforts by all instruments of national power--political, diplomatic,
economic, and military—are necessary; (2) knowledge, training, and equipment are the first line of defense; (3) persuasion as well as confrontation is necessary; (4) effective deterrence requires capability, credibility, and communication; and (5) training and weapons for retaliation-in-kind remain the final alternative.

Accession Number: ADA250011


Abstract: The proliferation of Weapons of Mass Destruction (WMDs)—nuclear, biological, and chemical—is occurring throughout the Third World. Desert Storm offers an excellent case study for assessing the various measures and operations which can be employed to protect U.S. forces against an adversary possessing a WMD capability. The elements of Desert Storm’s successful strategy can be categorized in three broad approaches—deterrence, denial, and defense. All three approaches were necessary and syngergistic. In the future, the ability to quickly deny or destroy an adversary’s WMD capability will be increasingly important, due to the unacceptability of exposing forces to any type of NBC agent, the likelihood for increased uncertainty surrounding deterrent threats, and the diplomatic, political, and psychological dilemmas posed by an adversary’s first use. Weapons of mass destruction, Desert Storm.

Accession Number: ADA264454

Nichelson, Scott M. Radiological Weapons of Terror. Maxwell Air Force Base, AL: Air University, Air Command and Staff College, April 1999. 63p.

Abstract: Recent Presidential speeches have highlighted the threat posed by chemical and biological terrorism. But what about the first leg of the Nuclear, Biological and Chemical (NBC) triad? This paper examines the potential threat to US interests from radiological weapons of terror, including both nuclear weapons, and radiological dispersion devices (RDDs), devices that intentionally use radiation to harm. There are four main factors that increase the risk of nuclear and radiological terrorism to US vital interests: first, technical knowledge is more readily available due to the Internet. Second, there has been a marked increase in source availability with the economic collapse of Russia. Third, security procedures are extremely lax, employing demoralized workers and utilizing grossly inadequate procedures. Finally, despite a decrease in the overall number of terrorist incidents, these attacks are becoming more lethal. These four factors taken together strongly suggest that it is only a matter of time before a nuclear or a radiological terrorist attack is levied against a vital US interest. But what if an attack occurs? Consequences of a radiological and nuclear terrorist attack are contemplated. Finally, countermeasures are discussed including both preventive and consequence management actions. The paper concludes that a radiological terrorist attack will probably occur in the future and offers some recommendations for dealing with this eventuality.

http://handle.dtic.mil/100.2/ADA397189

Accession Number: ADA397189


Abstract: The report describes what nuclear, chemical, and biological weapons can do, analyzes the consequences of their spread for the United States and the world, and summarizes technical aspects of monitoring and controlling their production. The report also explains the array of policy tools that can be used to combat proliferation, identifying tradeoffs and choices that confront policymakers.

http://www.wws.princeton.edu/~ota/disk1/1993/9341_n.html

*Abstract:* The background paper explores the technical pathways by which states might acquire nuclear, chemical, and biological weapons and the systems to deliver them. It also assesses the level of effort, commitment, and resources required to mount such developments. The paper is a companion to the OTA report *Proliferation of Weapons of Mass Destruction: Assessing the Risks,* which describes what nuclear, chemical, and biological weapons can do and how they might be used. That report also analyzes the consequences of the spread of such weapons for the United States and the world, surveys the array of policy tools that can be used to combat proliferation, and identifies tradeoffs and choices that confront policymakers.  
http://www.wws.princeton.edu/~ota/ns20/alpha_f.html


*Abstract:* The report deals with the Federal research and development effort in countering terrorism, and with the state of attempts to use technology to aid in detecting and preventing attempts to introduce explosives aboard aircraft. A review of relevant R&D programs in many agencies is provided. The report, the first produced by this assessment, gives an overview of Federal efforts to develop technical tools to aid in the battle against terrorism. It also provides a detailed discussion and analysis of technical aspects of research into explosives detectors, and gives the background of recent developments in the field. These are topics of great current interest, particularly when applied to airport security. Further, the report also covers research into technologies of use in other areas of counterterrorism: protection against chemical and biological attacks, physical security, data dissemination, and incident response.  
http://www.wws.princeton.edu/~ota/ns20/alpha_f.html

Accession Number: ADA360334


*Abstract:* Terrorism is not a new phenomenon, but it has become more prominent during the past two decades. Terrorist attacks have included not only political assassinations, but also large-scale attacks, often aimed at third parties, causing massive casualties. Two well-known examples are car bombings, employing hundreds of kilograms of high explosives, and attacks on commercial aircraft around the world. The U.S. Government and the American public became acutely aware of terrorism after the bombing of Pan American Flight 103 over Lockerbie, Scotland in December 1988. The recent war in the Persian Gulf heightened fears of renewed terrorist attacks on U.S. targets, both overseas and at home. In 1989, because of growing concern over terrorist threats, several Senate Committees requested that OTA study the role of technology in fighting terrorism and the Federal effort in promoting related research and development. The requesting Committees were: Governmental Affairs; Foreign Relations (Subcommittee on Terrorism, Narcotics, and International Operations); and Commerce, Science, and Transportation, together with its Subcommittee on Aviation. The Senate Select Committee on Intelligence also endorsed the study.  
http://www.wws.princeton.edu/~ota/ns20/alpha_f.html

Accession Number: ADA360398

Abstract: Since the end of the Cold War asymmetric threats continue to usurp conventional battlefield challenges as a significant danger to US national interests. Weapons of mass destruction (WMD) pose the most catastrophic impact as a prolific non-traditional security threat. To date, the world has seen and reacted to WMD attacks on a manageable scale. This paper discusses the background and current environment of the use of WMD by rogue states and radical terrorist groups and the potential success of a massive future WMD attack on the US at home and abroad. It will conclude with recommended policy to counter the cataclysmic impact a WMD strike would have on the United States domestically and as a global leader.

http://handle.dtic.mil/100.2/ADA391067

Accession Number: ADA391067


Abstract: Weapons of mass destruction pose an enormous threat to security and stability in the world as articulated in the Bush administration's recently published National Security Strategy. They constitute the greatest threat in the hands of terrorist groups and rogue states, sources which nonproliferation policies are designed to counter. However, weapons of mass destruction materials are also a threat from rational, non-rogue states including traditional world powers and states seeking prestige through the acquisition of weapons of mass destruction. Unless reduced and controlled, these materials may find their way into the hands of those willing to use them. To counter weapons of mass destruction proliferation and strengthen relations with allies and partners, the United States must engage the international community, adopt the Nuclear Threat Initiative, and charge the Department of Defense to provide trained and ready forces of the Defense Threat Reduction Agency's On-Site Inspection Directorate to implement adversarial; reciprocal and cooperative nuclear inspection regimes.

http://handle.dtic.mil/100.2/ADA414304

Accession Number: ADA414304


Abstract: Nuclear, chemical and biological blackmail by terrorist organizations and individuals could become a reality in the near future. The United States has adopted a tough strategy of supporting both bilateral agreements and multilateral connections seeking to institute universal sanctions against states which harbor terrorists. Although ideologically opposed to individual acts of terrorism, the Soviet Union still interprets, supports, or opposes the methods, activities, and purposes of various terrorist groups proportionally with their perceived accommodations with Soviet national interests, despite a policy of reducing international tensions with the West through detente. Both superpowers must recognize that the techniques of terrorism can be used by anyone regardless of ideology or nationality, that mutually beneficial decision along will not solve the problem, but is a prerequisite to reversing current trends of escalating terrorism and to achieving world peace, security, and genuine detente.

Accession Number: ADA014159


Abstract: Within the United States National Security Strategy, December 1999, Weapons of Mass Destruction (WMD) and their possible use by terrorists are listed as a vital interest to our nation's security. Excluded from this vital interest are terrorist acts that involve the use of conventional bombs and weaponry. The United States is focused on a Nuclear/Biological/Chemical (NBC) terrorist attack; but it should be equally prepared for the more likely domestic terrorist attack using conventional bombs.

**Abstract:** This study examines current United States nuclear weapons policy and the legal and foreign policy aspects of preemption or interdiction against a weapon of mass destruction (nuclear), specifically when possessed by a terrorist organization in the sovereign territory of another state. The study was inspired by the concept of sovereignty, and chosen before the events of 11 September 2001. Regardless of the effects of counterproliferation and international nuclear reactor safeguard programs, a state-sponsored terrorist-delivered nuclear weapon is only a matter of time. This study will review the technical aspects of nuclear weapons and their design, deterrence, strategy, policy, and the current legal framework that exists in the international arena. Finally, this thesis will examine historical events of counterproliferation by preemption, and identify gaps or shortcomings, if any, in current United States policies. It concludes that a terrorist-produced weapon is an eventuality and proposes the sustainment of current policies.


**Abstract:** For the United States, responding to terrorism as both a threat and a reality will be one of the most complex challenges of the 21st century. The era of conventional weapons and conventional tactics is over. The arsenal of the world is now comprised of chemical, biological and nuclear weapons collectively known as weapons of mass destruction (WMD). Moreover, although all of these weapons have been deployed in some incident during the past sixty years, the tenor of their now threatened deployment has changed. To begin with, there are simply more weapons in the hands of more groups, both with and without national affiliations. The neighborhood of nations is un-united in its own political and diplomatic response to this reality. Additionally, while this fractured response may not be a causal factor, there is a greater willingness to use biological and chemical weapons, if not nuclear, as well. Thus, the proliferation of killing agents in the hands of groups whose goals and interests are either not known, not understood, or counter to those of the United States, makes the United States, with its huge scope of political, diplomatic, military and business interests, a terrorist target of the first order. That's the threat. Once some type of WMD has been used within the United States, the entire country will be responding to the reality of terrorism. Responding will be much more complex than merely initiating a massive terrorist attack. At the dawn of the millennium, the United States has only begun to develop processes, policies, inter- and intra-governmental alliances which will form the structure of an effective response. And that is only the first step. Parallel with that effort there needs to be the creation of procedures covering every conceivable scenario of massive terrorism, thus responding to an outbreak of anthrax (a biological agent) is a different type of undertaking than responding to Sarin (a chemical agent).


**Abstract:** The threat of terrorist attacks against United States (U.S.) interests has become a high-priority national security concern. These threats come from unconventional, asymmetrical, and transnational sources. The objective of these attacks is to inflict the greatest amount of death
and destruction for the least investment in materials and manpower. The terrorists employ weapons of mass destruction because of their effectiveness in achieving this end. The US government has enacted legislation to meet this threat and placed the Department of Defense (DoD) at the forefront of these measures. One of DoD's most significant actions was the decision to integrate the Reserve Components (RC) into the domestic response of managing the consequences of attacks involving weapons of mass destruction. Many challenging issues arise related to accessing the Reserve Components for employment in this mission. These issues involve all of the force integration functional areas. This paper investigates structuring, training, and deploying. Also discussed is the fundamental issue of missioning of RC forces for CoM requirements. This paper will explore these issues and present some recommendations for changes in these force integration functional areas. These changes will facilitate the ultimate objective of accessing and employing trained and ready RC forces in this new and vital aspect of military assistance to civilian authorities.

http://handle.dtic.mil/100.2/ADA377636
Accession Number: ADA377636

Abstract: For years, the US military has prepared to fight against opponents armed with nuclear, biological, and chemical capabilities. These weapons of mass destruction (WMD) in the hands of traditional, state actors have been at the forefront of US defense planning. The end of the Cold War and the demise of the Soviet Union have allowed us to focus on new threats to US security. WMD terrorism will play a larger role in this new uncertain security environment for several reasons. First, transnational threats are no longer kept in check by a bipolar world. Secondly, terrorists may have greater access to WMD materials today than ever before. And thirdly, the information revolution has made not only weaponization knowledge freely available, but has also improved the organizational capabilities of diverse terrorist groups. This paper examines the WMD terrorist threat and addresses counterstrategies for reducing the risk. Conclusions include a need for heightened awareness of the threat. Recommendations include strengthening domestic and international controls and legal structures regarding WMD materials, using diplomatic pressure and economic means to deter or reduce the likelihood of WMD terrorism, and improving defensive and responsive capabilities.

http://handle.dtic.mil/100.2/ADA395718
Accession Number: ADA395718

Abstract: The National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, Title XVII, Chemical and Biological Weapons Defense, section 1703, directed the Secretary of Defense to submit an assessment and a description of plans to improve readiness. The DoD objective is to enable our forces to survive, fight and win in NBC contaminated environments. Discussed are new management objectives impacted by declining resources and force structure versus an ever changing threat environment.

Accession Number: ADA283520

Abstract: Current nuclear weapons modeling software, CATS and PDCALC, both have limitations that prevent them from accurately modeling a nuclear weapon in an urban environment. This thesis evaluated a conventional explosion simulator, Eblast(TM), compared it to CATS and PDCALC, and evaluated its potential as a nuclear weapons modeler. This thesis had four objectives. The first objective reviewed the four blast effects: blast wave, thermal radiation, ionizing radiation, and electromagnetic pulse as they apply to low yield weapons in an urban environment. Next, Eblast was evaluated both qualitatively and quantitatively. This evaluation compared Eblast data with nuclear weapon test data, Oklahoma City bombing data, and conventional explosion data for radiological dispersion weapon (RDW). The third objective compared Eblast with CATS and PDCALC, both qualitatively and quantitatively. The final objective was a list of changes and additions to Eblast to make it better-fit DOD needs. The results of the study show that Eblast is the best of the three programs both qualitatively and at simulating a nuclear blast in urban terrain.

http://handle.dtic.mil/100.2/ADA406332

Accession Number: ADA406332


Abstract: The paper argues that the goals of a terrorist organization are the decisive element in determining their propensity to engage in nuclear terrorism. Terrorist motivations to employ a nuclear WMD are analyzed by examining arguments that on the one hand say such weapons are unlikely to be used and counter arguments that say they some day may. Rational, politically motivated terrorist organizations are apt to see limited utility in a nuclear device. The influences of organizational behavior and other phenomena contribute to a profile of those who may see utility in nuclear terrorism. This examination enables an assessment of what type of organization poses the greatest potential threats. This assessment has implications for operational intelligence to combat the prospect of nuclear terrorism.

http://handle.dtic.mil/100.2/ADA401376

Accession Number: ADA401376
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