



# CBRN IAC

Newsletter



Chemical, Biological, Radiological & Nuclear Defense  
Information Analysis Center

Volume 10 Number 3

2009

## One-of-a-Kind Training For Today's Response Force

Scarbrough Promoted to BG, Becomes Joint Program  
Executive Officer for Chemical and Biological Defense

Warren Hosts National-Level Exercise

# Combatant Commanders WORKSHOP

*Real-Time S&T Support for Real-World Issues*

**3-4 November 2009**

**TAMPA, FLORIDA**

This workshop will highlight the capability of the Defense Technical Information Center (DTIC) to provide direct support to the Combatant Commanders.

**TOPICS OF DISCUSSION INCLUDE:**

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*DTIC Online - Public Access, Access Controlled, Classified*

*DTIC Collections*

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*Information Analysis Centers (IACs)*

**FOR MORE INFORMATION :**

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[confinfo@dtic.mil](mailto:confinfo@dtic.mil)

DTIC Online: <http://www.dtic.mil>

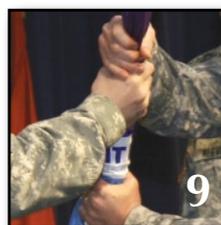


**DTIC** Information for the Defense Community

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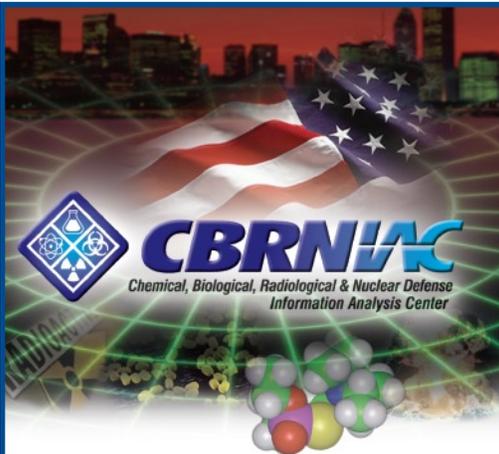
**On the Cover:** Responders attending many of the courses offered by the Center for Domestic Preparedness have the opportunity to experience an environment using GB or VX nerve agent at the CDP's Chemical, Ordnance, Biological, and Radiological Training Facility—the COBRA. In this photo, a responder stands before a decontamination line prior to an exercise where victims are triaged, moved from the contaminated zone, and then cleaned or decontaminated before receiving further treatment by medical personnel. For more information, see the full article on page 5.

The **CBRNIAC Newsletter**, a quarterly publication of the CBRNIAC, is a public release, unlimited distribution forum for chemical, biological, radiological and nuclear defense information. It is distributed in hardcopy format and posted in Portable Document Format (PDF) on the CBRNIAC Homepage.

The CBRNIAC welcomes unsolicited articles on topics that fall within its mission scope. All articles submitted for publication consideration must be cleared for public release prior to submission. The CBRNIAC reserves the right to reject or edit submissions. For each issue, articles must be received by the following dates:

- First Quarter (Number 1) – October 15th
- Second Quarter (Number 2) – January 15th
- Third Quarter (Number 3) – April 15th
- Fourth Quarter (Number 4) – July 15th

All paid advertisements and articles are subject to the review and approval of the CBRNIAC COTR prior to publication. The appearance of an advertisement, announcement, or article in the **CBRNIAC Newsletter** does not constitute endorsement by the DoD or the CBRNIAC.



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The CBRNIAC Contracting Officer's Technical Representative (COTR) may be contacted at the following address:

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Edgewood Chemical Biological Center  
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5183 Blackhawk Road  
Aberdeen Proving Ground, MD 21010-5424

U.S. Government agencies and private industry under contract to the U.S. Government can contact the CBRNIAC for information products and services. CBRNIAC services also extend to all state and local governments and the first responder community, to include local emergency planners, firefighters, medics and law enforcement personnel.

The CBRNIAC is located on the Edgewood Area of Aberdeen Proving Ground, MD 21010. For further information or assistance, visit or contact the CBRNIAC.

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**Knowledge Management & Development Program:**  
cbmiac-kmd@battelle.org

<http://www.cbrniac.apgea.army.mil/>

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# Contract Awards

## **Provide the Nuclear Weapons Security (NWS) Equipment Installation and Maintenance and Training Services for Various NWS Projects**

Lockheed Martin Space Systems Co., Strategic Missile Programs  
Sunnyvale, VA  
\$13,843,373 July 8, 2009  
By U.S. Navy Strategic Systems Programs, Arlington, VA

## **Design, Develop, Test, Prepare Associated Documentation and Deliver the Joint Services Aircrew Mask-Fixed Wing Joint Strike Fighter Variant Integration**

Gentex Corp.  
Rancho Cucamonga, CA  
\$6,081,302 June 29, 2009  
By U.S. Army Research, Development and Engineering Command Acquisition Center, Aberdeen Proving Ground, MD

## **Research in Biodefense and Emerging Infectious Diseases**

Washington University School of Medicine  
St. Louis, MO  
\$37,000,000 June 25, 2009  
By National Institute of Allergy and Infectious Diseases, Bethesda, MD

## **Panoptic Analysis of Chemical Traces Program**

Agilent Technologies Inc.  
Santa Clara, CA  
\$6,814,116 June 18, 2009  
By Defense Advanced Research Projects Agency, Arlington, VA

## **Study to Determine if Collaborative Virtual Environments Improve Public Health Preparedness and Response Planning**

University of Illinois at Chicago School of Public Health  
Chicago, IL  
\$1,600,000 June 11, 2009  
By U.S. Centers for Disease Control and Prevention, Atlanta, GA

## **Research and Development Services Entitled "Applied Simulation and Analysis for CBRN (Chemical, Biological, Radiological, and Nuclear)"**

Optimetrix, Inc.  
Ann Arbor, MI  
\$9,787,433 June 9, 2009  
By U.S. Army Research and Development Command, Aberdeen Proving Ground, MD

## **Research and Training in Emerging Infectious Disease**

Columbia University Mailman School of Public Health  
New York, NY  
\$46,000,000 June 8, 2009  
By National Institute of Allergy and Infectious Diseases, Bethesda, MD

## **Study New and Emerging Infectious Disease**

University of Maryland School of Medicine  
Baltimore, MD  
\$20,000,000 June 3, 2009  
By National Institute of Allergy and Infectious Diseases, Bethesda, MD

## **Study Tularemia and Develop a New Anti-Tuberculosis Agent**

University of Tennessee Health Science Center  
Memphis, TN  
University of Memphis  
Memphis, TN  
\$1,100,000 June 4, 2009  
By National Institutes of Health, Bethesda, MD and National Science Foundation, Arlington, VA

## **Develop Antibiotic Compounds to Combat Biowarfare Pathogens**

PolyMedix, Inc.  
Radnor, PA  
\$1,600,000 June 02, 2009  
By Defense Threat Reduction Agency, Fort Belvoir, VA

## **Navy Medical Biological Defense Research Laboratory at Fort Detrick, MD**

John C. Grimberg Co., Inc.  
Rockville, MD  
\$21,087,000 May 29, 2009  
By U.S. Army Corps of Engineers, Baltimore, MD

## **Support for Contingency Planning Operations and Exercises for the Prevention of Potential Incidents Involving Nuclear Weapons**

Science Applications International Corp.  
San Diego, CA  
\$6,362,555 May 27, 2009  
By Defense Threat Reduction Agency, Fort Belvoir, VA



**CBRNIAC**  
*Chemical, Biological, Radiological & Nuclear Defense  
Information Analysis Center*

# Serving the CBRN Defense and Homeland Security communities



# One-of-a-Kind Training for Today's Response Force

by Shannon Arledge, Center for Domestic Preparedness Public Affairs

**T**he Technical Emergency Response Training (TERT) course is considered one of the most unique courses offered at the Center for Domestic Preparedness (CDP) in Anniston, Alabama.

TERT—one of several all-hazards training courses at the CDP—is a one-of-a-kind training course offered at the only facility in the nation where civilian emergency responders can train in an actual nerve agent environment.

This hands-on training experience takes place at the CDP's Chemical, Ordnance, Biological, and Radiological Training Facility (COBRATF) in Anniston, Alabama. For responders who have trained there, it's simply the COBRA. The TERT course enables responders to effectively prevent, respond to, and recover from incidents involving chemical weapons and other hazardous materials.

"The major attraction to TERT is the extensive hands-on training and the fact that responders perform tasks in a genuine nerve agent environment," said Mellione Richards, TERT course manager. "It's an operational level, performance-driven course that provides responders with the skills necessary to respond to a real-world incident."

"We provide our nation's first responders with the necessary tools to go home and protect themselves, their family, and their community in a WMD [Weapons of Mass Destruction] all-hazards incident," added Richards. "The TERT course is the foundation upon which several of the CDP courses are built."

Rick Dickson, assistant director for Training Delivery, explained that the TERT course was an expansion of the CDP's original "COBRA Course" offered in the early years, following the CDP's founding in 1998. "The original COBRA course focused on more traditional response disciplines like fire, EMS, and law enforcement," added Dickson. "The course was redesigned to afford the toxic training experience to traditional and non-traditional emergency responders, which includes emergency management, healthcare, public health, public communications, public works, and government administrative. The TERT course offers an opportunity to receive operational defensive training that's necessary to respond to acts of terrorism."

Modifications to the TERT course continued during the ensuing years to include response activities associated not only with terrorism but also all-hazards events caused by accidents or manmade disasters.

Continued pg. 6

More than 10,000 emergency responders have trained in the current course since its inception in 2001. The course offers multiple disciplines from multiple jurisdictions an opportunity to not only train together, but a chance to gain a better understanding of each discipline's capabilities, roles, and responsibilities in catastrophic events.

The four-day course features more than 30 hours of training and provides responders with experience operating in various levels of protective equipment. TERT also includes 3.2 hours of Continuing Education Units (CEUs). The CDP is an authorized provider under the International Association for Continuing Education and Training.

"Responders have an opportunity to experience multiple types of Personal Protective Equipment (PPE)—Level B, using a self-contained breathing apparatus and Level C, using an air purifying respirator in several different scenarios," said Kenneth Vinson, assistant TERT course manager. "Sometimes it's hot, sometimes it's cold, but very seldom is the temperature just right. The responders experience the challenges involved with using PPE, and they receive a thorough explanation of how to operate the gear. At the end of the class, they feel much more confident with all of the equipment."

In addition to classroom instruction, the TERT course provides students with important hands-on training that includes hands-on exercises. The all-hazards approach features a summary of the terrorist threat, potential targets, and chemical, biological, radiological and explosive hazards that may be used in WMD incidents.

"A responder attending the TERT course will receive an overview of CBRNE material, incident command systems and extensive decontamination operations. "They also receive instruction on mass casualty triage, improvised explosive devices, and search techniques," Richards added.

"TERT is a complete, diversified course that ranges from an awareness level, a refresher level, or a very complex level for some responders," added Vinson.

"The course exceeded my expectations," said Lt. Stephen Weiler, a police officer from Illinois. "I feel very comfortable now attempting to provide quality response to a mass casualty incident. I really enjoyed [the COBRATF] and how we tested two separate agents. Police, fire, medical, and EMS responders aren't 'windshield' tourists in the professions we serve. We are the ones who get out and get our hands dirty. Boots on the ground, hands on, in the middle of it all."

### The COBRA

The COBRA is operated by the CDP, a federal training facility under the leadership of the Federal Emergency Management Agency (FEMA) and Department of Homeland Security (DHS). The COBRA is the only



facility in the nation that offers emergency responders an opportunity to operate in an environment using the nerve agents GB and VX.

Upon completion of construction in March 1987, the COBRA was operated by the U.S. Army Chemical School. The facility was transferred to the federal government following the 1998 closure of Fort McClellan. Had the transfer not been granted, the building would have been vacated, boarded up, and a significant monetary investment wasted. Since 1999, more than 35,000 emergency responders throughout the nation and its U.S. territories have experienced the toxic agent facility.

The COBRA consists of a specially-designed indoor environment where responders participate in hands-on detection exercises. Using specialized equipment and proper protocols, responder students detect WMD threats, as well as recognize and treat symptoms of toxic agent poisoning. Responders participating in COBRA courses include a variety of disciplines. Traditional emergency responders such as HAZMAT technicians, firefighters, and law enforcement may train beside healthcare providers, public health officials, or 911 dispatchers, to name a few.

Emergency responders attending a COBRA course leave their CDP training confident in their ability to perform in situations requiring emergency response. At the completion of the challenging course, the responders who successfully complete the course are presented the coveted COBRA pin—a King Cobra in a hooded threat display, a recognizable warning posture—signifying their successful entry and execution of tasks in a toxic environment.

Graduates walk away with confidence in their protective clothing and the skills they learned during training. They know they can operate in a toxic environment—because they trained at the COBRA. ♦



Continued pg. 7



# FEMA Center for Domestic Preparedness

The threats faced by the nation's emergency responders are diverse, deadly, and complex. There is growing concern that chemical, biological, explosive, radiological, or other hazardous materials will become terrorists' weapons of choice.

The **Center for Domestic Preparedness** (CDP) opened its doors in June 1998, as a training center for the nation's emergency responders.

The CDP's mission is to train emergency response providers from state, local, and tribal governments, as well as the federal government, foreign governments, and private entities, as available. The scope of training includes preparedness, protection, and response.



CDP training for state, local, and tribal responders is fully funded by the U.S. Department of Homeland Security. International, federal, and private sector responders may participate in CDP training on a space available, fee-for-service basis.

Training partnerships at the federal and state levels enable the CDP staff to take advantage of shared knowledge, to ensure the nation's responders receive the most up-to-date training.

The CDP's interdisciplinary resident and non-resident training courses promote greater understanding among these diverse responder disciplines: Emergency Management, Emergency Medical Services, Fire Service, Governmental Administrative, Hazardous Materials, Healthcare, Law Enforcement, Public Health, Public Safety Communications, and Public Works.

At the **Chemical, Ordnance, Biological and Radiological Training Facility** (COBRATF), the CDP offers the only program in the nation

featuring civilian training exercises in a toxic chemical agent environment. The advanced hands-on training enables responders to effectively respond to real-world incidents involving chemical, biological, explosive, radiological, or other hazardous materials.



Responders serve as the nation's first line of defense and deserve the highest-quality training available.

On March 31, 2007, the **Noble Training Facility** (NTF) was integrated into the CDP training center. In 1999, the former Noble Army Hospital was converted into a training site for health and medical education in disasters, to include both acts of terrorism and manmade disasters.

The NTF is the only hospital facility in the United States dedicated to training hospital and healthcare professionals in disaster preparedness and response. The facility includes classrooms, break-out rooms, exercise/simulation areas, a resource center, computer lab, and two prototype mass casualty decontamination training lanes.



Responders from all 50 states, the District of Columbia, and the U.S. territories have trained at the CDP. FEMA leads and supports the nation in a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation, to reduce the loss of life and property and protect the nation from all hazards including natural disasters, acts of terrorism, and other manmade disasters.

**Learn more about the Center for Domestic Preparedness**

1.866.213.9553 or <http://cdp.dhs.gov>

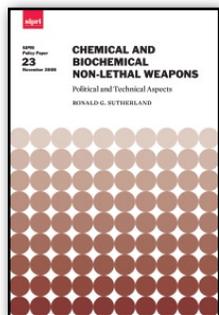
*This Fact sheet can be found online at [https://cdp.dhs.gov/pdfs/CDP\\_Fact\\_Sheet.pdf](https://cdp.dhs.gov/pdfs/CDP_Fact_Sheet.pdf)*



# New CBRNIAC Information Resources

Sutherland, Ronald G. **Chemical and Biochemical Non-lethal Weapons: Political and Technical Aspects**. Solna, Sweden: Stockholm International Peace Research Institute, 2008.

<http://books.sipri.org/files/PP/SIPRI23.pdf>



“Non-lethal weapons are intended to incapacitate personnel or materiel without injuring people. This Policy Paper describes and analyses biological and chemical substances that have the potential to be used as weapons or can improve the efficacy of other, more traditional, weapons. Potential loopholes in the international prohibitions against chemical and biological warfare (CBW) are presented together with practical, politically feasible and technically useful policy options. It is not a comprehensive legal review or an exhaustive survey of activities in the field of non-lethal weapons but offers valuable insights on an increasingly important topic.”

*(Preface)*

CB-081169

ISBN 978-91-85114-59-7

Stockholm International Peace Research Institute (SIPRI)

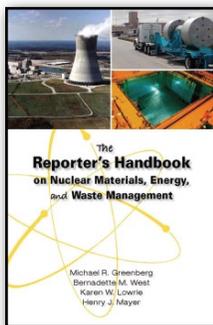
Signalistgatan 9

SE-169 70 Solna, Sweden

Phone: 46-8-655-9700

Greenberg, Michael R., West, Bernadette M., Lowrie, Karen M. and Henry J. Mayer. **The Reporter’s Handbook on Nuclear Materials, Energy and Waste Management**. Nashville, Tennessee: Vanderbilt University Press, 2009.

“An essential reference for journalists, activists, and students, this book presents scientifically accurate and accessible overviews of more than twenty of the most important issues in the nuclear realm. Each “brief” is based on interviews with named scientists, engineers, or administrators...and each has been reviewed by a team of independent experts.” *(Back Cover)*



CB-085577

ISBN 978-0-8265-1660-2

Vanderbilt University Press

Box 1813 Station B

Nashville, TN 37235

Phone: 615-322-3585

Lassman, Thomas C. **Sources of Weapon Systems Innovation in the Department of Defense: The Role of In-House Research and Development, 1945-2000**. Washington, DC: U.S. Army Center of Military History, 2008.

“This study of weapons research and development (R&D) in the Army, the Navy, and the Air Force complements a larger, multivolume history of weapons acquisition in the Department of Defense, covering the

period 1945-2001. The series examines the policies, procedures, and institutional environment that guided the development and procurement of major weapon systems...” *(Introduction)*

CB-085627

ISBN 978-0-16-079418-6

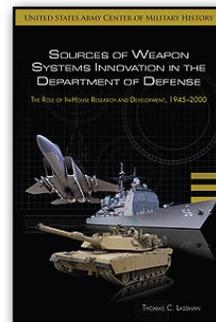
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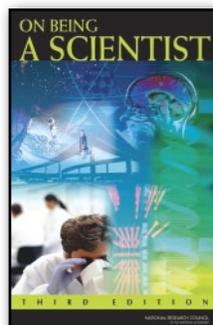
Washington, DC 20401

Phone: 1-866-512-1800



Committee on Science, Engineering, and Public Policy. **On Being A Scientist: A Guide to Responsible Conduct in Research**. 3rd ed. Washington, DC: The National Academies Press, 2009.

[http://books.nap.edu/catalog.php?record\\_id=12192](http://books.nap.edu/catalog.php?record_id=12192)



“*On Being A Scientist: A Guide to Responsible Conduct in Research* presents an overview of the professional standards of science and explains why adherence to those standards is essential for continued scientific progress...While directed primarily toward graduate students, postdocs, and junior faculty., this guide is useful for scientists at all stages in their education and careers, including those working for industry and government.” *(Preface)*

CB-085626

National Academies Press

500 Fifth Street, NW, Lockbox 285

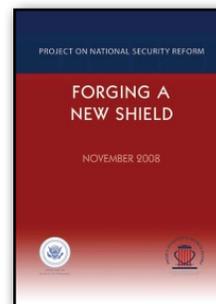
Washington, DC 20055

Phone: 1-800-624-6242

**Forging a New Shield**. Arlington, VA: Project on National Security Reform, 2009.

<http://www.pnsr.org/data/files/pnsr%20forging%20a%20new%20shield.pdf>

“*Forging a New Shield* represents the culmination of more than two years of work by more than three hundred dedicated U.S. national security executives, professionals, and scholars. It provides a comprehensive historical analysis of the current U.S. national security system, an evaluation of the system’s performance since its inception in 1947, and a detailed analysis of its current capabilities. On the basis of these assessments, the report proposes a fully integrated program of reform and renewal.” *(Précis)*



CB-082843

Project on National Security Reform

4075 Wilson Boulevard, Ninth Floor

Arlington, VA 22203

Phone: 703-387-7600

# Scarbrough Promoted to BG, Becomes Joint Program Executive Officer for Chemical and Biological Defense

By Julius L. Evans, JPEO-CBD PAO

**T**he Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) headquartered in Falls Church, Virginia, recently experienced a change in leadership. Brigadier General Jess A. Scarbrough was promoted on March 27, and a ceremony on April 17 placed him at the reins of an organization that is the single focal point for research, development, acquisition, fielding, and life cycle support of chemical and biological defense equipment and medical countermeasures for the Department of Defense. During the ceremony, attended by more than 250 close friends and family members, Scarbrough reflected solemnly on the moment of his promotion when he said, "I accept this honor with great humility, quiet confidence and a strong sense of responsibility."

The Change of Charter ceremony held April 17, transferred authority from Maj. Gen. Stephen Reeves to Scarbrough as the JPEO. During that same ceremony, Reeves retired after more than 35 years of service in the U.S. Army.

## About Scarbrough

Before becoming the JPEO, Scarbrough was the assistant deputy for Acquisition and Systems Management, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), Washington, D.C. Previous assignments included: program director, Special Operations and Conventional Special Programs, Office of the Under Secretary of Defense for Acquisition and Technology; director, International Cooperative Programs Activity, United States Army Research, Development and Engineering Command; project manager, Tactical Exploitation of National Capabilities Program; director, Army Space Program Office; and chief of staff to the Army Acquisition Executive.



*Brigadier General Jess A. Scarbrough, left, receives the Joint Program Executive Office for Chemical and Biological Defense flag from Lt. Gen. N. Ross Thompson III, principal military deputy, office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), and passes it to Lt. Col. Harry R. Culclasure, product manager - consequence management, for Joint Project Manager Guardian during a Change of Charter ceremony April 17 signifying the assumption of authority. Photo by Steve Lusher, Camber Corporation.*

He graduated from the University of Arizona with a bachelor's degree in political science then earned two master's degrees—one in business administration from the University of Oklahoma and the second in strategic studies from the U.S. Army War College. Other professional schooling includes the Air Defense Artillery Officer Basic and Advanced Courses, the Army's Command and General Staff College, the Air Force Air Command and Staff College, the Department of Defense Systems Management College and the National Defense University's CAPSTONE General and Flag Officer Course.

Scarbrough will lead, manage, and direct the acquisition and fielding of chemical and biological detection and reconnaissance systems, individual and collective protection systems, decontamination systems, information management systems, medical countermeasures, devices and vaccines, and installation and force protection systems. Eight Joint Project Managers throughout the United States will report to Scarbrough in providing these capabilities.

"Developing, fielding and providing world-class equipment to first responders, Warfighters and force protection services is integral to sustaining and preserving our freedom and I look forward to joining the CBD community," Scarbrough said. ♦

*Original article appeared in the April 30, 2009 issue of the **APG News** and can be viewed online at <http://apgnews.apg.army.mil/Archive/pdf2009/April3009/April3009.pdf>.*



## In the News

### Dr. Sosne Testing Eye Drops That May Protect Against Chemical Attack

Wayne State University E-News

July 10, 2009

"Gabriel Sosne, M.D., an associate professor in the Departments of Ophthalmology and Anatomy/Cell Biology at the Wayne State University School of Medicine and the Kresge Eye Institute, is working with RegeneRx Biopharmaceuticals, Inc. and the U.S. Army Medical Research Institute of Chemical Defense to evaluate the effectiveness of an eye drop compound that may prevent or reduce damage caused by chemical weapons, specifically mustard gas."

<http://prognosis.med.wayne.edu/article/dr-sosne-testing-eye-drops-that-may-protect-against-chemical-attack>

### New Drug Fights Anthrax Toxin

Steven Reinberg

USNEWS.com

July 8, 2009

"Scientists report that experiments in animals show that a new, monoclonal antibody drug might safely cure anthrax poisoning in humans."

<http://health.usnews.com/articles/health/healthday/2009/07/08/new-drug-fights-anthrax-toxin.html>

### New Way To Make Sensors That Detect Toxic Chemicals

Pam Frost Gorder

The Ohio State University Research News

July 8, 2009

"Ohio State University researchers have developed a new method for making extremely pure, very small metal-oxide nanoparticles. They are using this simple, fast, and low-temperature process to make materials for gas sensors that detect toxic industrial chemicals (TICs) and biological warfare agents."

<http://researchnews.osu.edu/archive/nanonio.htm>

### New Military Drone Based on Bats

UPI.com

July 8, 2009

"U.S. researchers say they used real bats as the inspiration for a new type of military surveillance drone equipped with wings that flap."

The 'micro-aerial vehicle,' developed at North Carolina State University, is used to monitor activities on the ground and detect biological weapons."

[http://www.upi.com/Science\\_News/2009/07/08/New-military-drone-based-on-bats/UPI-34341247064737/](http://www.upi.com/Science_News/2009/07/08/New-military-drone-based-on-bats/UPI-34341247064737/)

### \$45 Million Granted for Infectious Disease Research at UCI newuniversity.org

June 1, 2009

"...UC Irvine's award of \$45 million for infectious disease research is a breath of fresh air for Alan Barbour, director of the recipient program, the Pacific-Southwest Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research (PSW RCE) at UCI... PSW RCE will be distributing the received funds to various participating institutions. Such institutions include, but are not limited to, UCLA, City of Hope National Medical Center, Arizona State University, University of Hawaii and the Ministry of Health in Nicaragua."

[http://www.newuniversity.org/main/article?slug=\\$45\\_million\\_granted\\_for193](http://www.newuniversity.org/main/article?slug=$45_million_granted_for193)

### EPA Green Lights First Antimicrobial Pesticide Against Anthrax EPA News Release

May 28, 2009

"The Environmental Protection Agency has approved the first registration, or license, of an antimicrobial pesticide product to deactivate anthrax spores on hard surfaces. "Peridox with the Electrostatic Decontamination System" can decontaminate buildings, structures, vehicles, ships, aircraft, personal protective equipment, and other items infected with anthrax spores. Its use is limited to dry, precleaned, hard, nonporous surfaces."

<http://yosemite.epa.gov/opa/admpress.nsf/0/9a07a5468a7c4905852575c40058d538?OpenDocument>

### New Demron-W Bomb Shield: World's First and Only Blanket That Protects Against IEDs, RDDs and Nuclear Incidents

Radiation Shield Technologies Press Release

May 27, 2009

"...Radiation Shield Technologies (RST), today announced RST's introduction of the new Demron-W High Energy Nuclear/Ballistic IED RDD RED Shield, the world's first and only blanket that provides total

Continued pg. 14

## Vol. 6 No. 3 of the Chem-Bio Defense Quarterly Magazine is Now Available!

Recently, North Korea detonated a nuclear device underground and test fired several short-range missiles, showing how quickly the climate can change with those who strive to obtain destabilizing technologies; particularly Weapons of Mass Destruction. The Joint Project Managers of the JPEO-CBD are at the forefront in developing effective processes through dual-purpose technologies that will continue to help us identify and correctly respond to the threats we may face. In this issue of Chem-Bio Defense Quarterly magazine, you can read about some of these capabilities.

To view the electronic version, visit: <http://www.jpeocbd.osd.mil/packs/Magazine.aspx>

Would you like to receive the link to upcoming issues or have a hardcopy version for your office or organization? If so, complete the interactive form at <https://jacks.jpeocbd.army.mil/jacks/Public/CBQuarterly/Default.aspx>.



# Warren Hosts National-Level Exercise

by Senior Airman Daryl Knee, 90th Missile Wing Public Affairs



The FBI evidence response team investigates the mock aggressor vehicle during the NUWAIX 2009. The continuous 72-hour exercise tested the military's ability to coordinate, cooperate, and communicate with other interagency departments and federal, state, and local emergency services.

F.E. WARREN AIR FORCE BASE, Wyoming. Airman 1st Class Timothy Chiolo, 90th Security Forces Group's tactical response force, positions himself June 19 for a better view at the mock aggressors assaulting a launch facility during the Nuclear Weapon Accident/Incident Exercise. (Photos by Bernie Ernst)

A simulated terrorist attack on a 90th Missile Wing ICBM [Intercontinental Ballistic Missile] launch facility provided the exercise scenario for Nuclear Weapon Accident/Incident Exercise 2009 [NUWAIX 2009]. This national-level exercise involving 11 federal agencies and 1,300 personnel was the largest and most complex exercise ever conducted at a missile base.

Accident response and associated consequence management procedures are routinely practiced by local responders and the 90th Missile Wing; however, this exercise was made far more complex by the criminal aspect associated with terrorist activities.

Close and careful coordination with a number of federal agencies, particularly the FBI [Federal Bureau of Investigation], was essential to gather information swiftly to identify and capture the terrorists responsible for the attack.

The exercise challenged responders in several ways. Balancing the need for personnel safety in a potentially hazardous situation while allowing law enforcement officials to gather time-critical evidence for criminal response, required a clear understanding of the risks involved.

Minutes counted in determining which terrorist group was responsible and developing courses of action to track and capture them.

As response elements arrived from across the nation, the wing's initial response force [IRF] transitioned to a response task force [RTF] with a formal transfer of incident command

between the wing commander Col. Mike Morgan, 90th Missile Wing commander, and the Twentieth Air Force Commander Maj. Gen. Roger W. Burg.

General Burg then led the federal agency response for consequence management along with supporting the FBI in their counterterrorism mission.

In addition to the FBI, major exercise players included the Department of Energy providing weapon system technical expertise, [U.S. Department of] Homeland Security and FEMA [Federal Emergency Management Agency] for consequence management, U.S. Northern Command for operational command of the IRF/RTF, the State of Wyoming and the Wyoming Guard for initial response and logistical support, and Air Force Space Command for filling key RTF leadership positions.

"This is the first time the country has brought together military operators with a very robust interagency package," said Exercise Director and Director of Nuclear Support at the Defense Threat Reduction Agency U.S. Army Brig. Gen. Ernie Audino. "This is a complex exercise with many moving parts." "It is critical to make the U.S. military the best in the world," he continued. "And it's not just the extensive training we go through, but it's how we capture the lessons learned from that training. It is an endless, necessary cycle." ♦



Warren Fire Chief John McDougal, 90th Civil Engineer Squadron, acts as the incident commander until the IRF commander arrives to take control of the situation.

This article originally appeared on the Air Force Web site at <http://www.afspc.af.mil/news/story.asp?id=123156188>

# U.S. Army CBRN School Awards 10,000th Certification

by Carolyn Erickson, GUIDON staff

**T**he U.S. Army Chemical, Biological, Radiological and Nuclear School [USACBRNS] presented its 10,000th certification this month.

Since March 2007, USACBRNS has trained personnel for hazardous material awareness, operations and technician levels for certification, said Barbara Kiltthau, 3rd Chemical Brigade Education and Training Execution director. USACBRNS recently added a certification for incident command.

Soldiers train on how to conduct decontamination during the Mass Casualty Course at the 1st Lt. Terry First Responder Training Facility at Fort Leonard Wood.

"It's exciting," Kiltthau said. "Right now, as we continue training wartime tasks, we are now open to all branches, training across the full CBRN spectrum."

USACBRNS trains Army Soldiers from active duty, Reserve and National Guard components, as well as the Navy, Marines, Coast Guard and Air Force, and foreign national officers, said David Lewis, CBRN/HAZMAT Certification compliance officer.

USACBRNS HAZMAT certification program is accredited through the U.S. Department of Defense Fire Fighter Certification System, which falls under the International Fire Service Accreditation Congress (IFSAC), Kiltthau said.

"It was a lot of hard work to get (our program) certified," Lewis said.

"IFSAC personnel inspect all testing and certification procedures before granting accreditation, and inspect the programs at least every three years to verify standards are maintained," Kiltthau said.

Gaining accreditation for USACBRNS HAZMAT certification program was critical to ensure all DoD first responder personnel can assist in emergency situations.

"In domestic response, certifications are required across every side of the house," Lewis said. "Certifications are a consolidated method of determining that all the responders are competent on a scene.

"Certifying a program gives validity to the training," Lewis continued. "It's like a diploma — 'we've met these requirements.' It makes sure all responders get the same level and type of training ... and are taught on the same methods. At any incident, they will inquire about your certification levels."



*Soldiers train on how to conduct decontamination during the Mass Casualty Course at the 1st Lt. Terry First Responder Training Facility at Fort Leonard Wood.*



Air Force Staff Sgt. Michael Gurske, 14th Civil Support Team (Weapons of Mass Destruction) out of Connecticut, who is attending the Technical Escort Course, shared his thoughts on the importance of USACBRNS courses having IFSAC accreditation.

"Any response (to a domestic CBRN event) is interagency," he said. "We all have to have the same training so we all know how to respond the same way."

Gurske shared the peace of mind he gets from knowing that USACBRNS is accredited.

"It most definitely helps," he said. "My first day in the unit, we responded to a live anthrax (situation). I had no training, but the guys who responded were confident—they were comfortable with their equipment, knew how to utilize it and knew it was going to work. The training, knowledge, and confidence are a huge factor." ♦

The original article can be found online at [http://myguidon.com/index.php?option=com\\_content&task=view&id=10518&Itemid=39](http://myguidon.com/index.php?option=com_content&task=view&id=10518&Itemid=39)



**CBRNIAC**  
Chemical, Biological, Radiological & Nuclear Defense  
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**Your one-stop shop for  
CBRN Defense scientific  
and technical information  
resources**

# Joint CBRN Regimental Week

By Carolyn Erickson, GUIDON Staff

Nearly 1,000 joint, interagency, intergovernmental and multinational personnel visited the Joint Chemical, Biological, Radiological and Nuclear Conference and Regimental Week on Fort Leonard Wood, June 22–26, 2009.

The theme of the conference was “Celebrating the year of the Dragon NCO,” with a focus on the past, present, and future of the CBRN Corps.

“The past, present, and future are all represented here,” said Col. Leslie Smith, U.S. Army CBRN School [USACBRNS] commandant, speaking of conference attendees. “The challenge for us today is—where do we go from here?”

Maj. Gen. Gregg Martin, Maneuver Support Center and Fort Leonard Wood commanding general, opened the conference.

“This is hard stuff—coming up with how to do the hugely increased CBRN mission... with constrained resources,” Martin said. “CBRN is leading the way with very high-end functional training.”

Conference and Regimental Week events ran side by side during the week.

Taking part in the conference, many leaders across the CBRN spectrum gathered together in meetings and listened to speakers over the course of the week to help plan the next 15 years of the CBRN Corps.

National Defense Industrial Association exhibits were open for tours, June 23–25, showcasing new technology and equipment that could be used in CBRN defense. Foreign nations took part in the exhibit, with a German CBRN recovery exhibition on June 24.

Besides the conference meetings, speakers and exhibitions, many events during the week focused on the CBRN Corps and highlighted its history.

The week opened with a golf tournament on June 22, followed by the official opening of the CBRN Regimental Room on June 23.



Maj. Gen. Donald Fick, National Guard Bureau, Rose Loving, Stone's spouse, and Col. Leslie Smith, USACBRNS commandant take part in the unveiling ceremony for Master Sgt. John Stone's memorial at the 1st Lt. Terry Facility on June 24.

“There are over 120 artifacts, many of which have never been seen before, and over 100 photos,” Smith said at the Regimental Room opening ceremony.



Col. David Wilcox, 3rd Chemical Brigade commander, Col. Leslie Smith, USACBRNS commandant, and Command Sgt. Maj. Ted Lopez, USACBRNS, inspect troops during the CBRN Regimental Review on June 24.

“This will promote a higher degree of esprit de corps. With our Soldiers surrounded by Corps history, they'll get sense of belonging to something bigger than themselves.”

The CBRN Regimental review took place June 24, with a review of troops and the presentation of the Maj. Gen. William Sibert Award to the best active duty, Reserve and National Guard CBRN companies in the corps.

The Sibert Award winners were: Company B, 110th Chemical Battalion (Technical Escort), Fort Lewis, Washington; 130th Chemical Company (Biological Agent Detection System), Bethlehem, Pennsylvania; and 792nd Chemical Company (Heavy), Longview, Washington.

The CBRN Corps conducted an “Honor our Fallen” sunrise service in Memorial Grove, Thursday, and hosted a Hall of Fame/Distinguished Member of the Corps ceremony in Baker Theater that afternoon.

The CBRN Corps Hall of Fame inductees were: retired Command Sgt. Maj. Peter Hiltner and Pfc. Richard Griffin (deceased).

The CBRN Distinguished Member of the Corps inductees were: retired Lt. Col. Michael Lanphere, retired Command Sgt. Maj. James Barkley, retired Command Sgt. Maj. Larry Fisher (deceased), retired St. Maj. Kimberly Garrick and Dr. Peter Stopa (deceased).

Friday, the CBRN Corps conducted a regimental run and a combined warfighter seminar, and finished the week with a Green Dragon Ball in Nutter Field House.

Smith summed up the goal of the conference and Regimental Week as the CBRN Corps looks to the future.

“In the Bible, it says ‘Who will go for us?’ and ‘Here am I, send me’ (Isaiah 5:8),” Smith said. “We need to continue to be the ‘send me’ force of the nation.”

Photos by Carolyn Erickson, GUIDON staff

## **In the News** *cont.*

protection against ballistics, improvised explosive devices, dirty bombs and all types of radiological and nuclear incidents.”

<http://www.radshield.com/press/articles-052709.asp>

### **La Jolla Institute Researchers Unlock Mystery of Potentially Fatal Reaction to Smallpox Vaccine in Eczema Sufferers**

**La Jolla Institute for Allergy & Immunology News Release**

May 25, 2009

“Researchers from the La Jolla Institute for Allergy & Immunology have pinpointed the cellular defect that increases the likelihood, among eczema sufferers, of developing eczema vaccinatum, a severe and potentially fatal reaction to the smallpox vaccine.”

[http://www.liai.org/pages/news-releases\\_may\\_25\\_2009](http://www.liai.org/pages/news-releases_may_25_2009)

### **Secretary of Health Unveils Pennsylvania’s New Portable Hospitals in Lehigh County**

**Pennsylvania Department of Health Press Release**

May 11, 2009

“Health Secretary Everette James today toured one of Pennsylvania’s new portable hospitals and underscored the important role the systems will play in providing medical care to people who become ill or are injured during an emergency.”

<http://www.dsf.health.state.pa.us/health/cwp/view.asp?Q=253221&A=190>

### **FDA Approves New Influenza Vaccine Production Facility**

**U.S. Food and Drug Administration Press Release**

May 6, 2009

“The U.S. Food and Drug Administration (FDA) today announced that it has approved a new manufacturing facility used to produce influenza virus vaccines. The facility is approved for seasonal influenza vaccine production and could be used for the production of vaccine against the new 2009 H1N1 influenza strain.”

<http://www.fda.gov/bbs/topics/NEWS/2009/NEW02008.html>

### **Canadians Invent Surgical Mask That Protects Against Airborne Viruses**

**live-PR.com**

May 5, 2009

“Viral Defender, Inc. today announced the worldwide launch of Triosyn® disposable and self-decontaminating surgical masks designed to provide increased protection against airborne viruses which includes swine flu.”

<http://www.live-pr.com/en/canadians-invent-surgical-mask-that-protects-r1048274418.htm>

### **Highly Sensitive Detection of Dengue Virus Nucleic Acid in Samples from Clinically Ill Patients**

**Journal Of Clinical Microbiology**

April 2009

“Dengue virus (DENV) is a major cause of febrile illness and hemorrhagic fever in tropical and subtropical regions...early diagnosis depends mostly on detection of viral components, such as the RNA...conclude that TMA is a highly sensitive method which can detect DENV RNA in approximately 89% of clinical, acute-phase serum specimens.”

<http://jcm.asm.org/cgi/reprint/47/4/927>

### **Smiths Detection Launches Bio-Seeq PLUS, an Advanced Hand-Held Bio-Agent Detector**

**Smiths Detection Press Release**

April 23, 2009

“Smiths Detection today announces the worldwide launch of Bio-Seeq™ PLUS, a next-generation handheld biological testing unit designed for global military and emergency response applications. The system provides on-site detection and identification of trace amounts of biological warfare agents (BWAs) such as Anthrax (pX01 & pX02), Tularemia, Plague and Pan Orthopox.”

[http://www.smithsdetection.com/eng/1025\\_4599.php](http://www.smithsdetection.com/eng/1025_4599.php)

### **Smiths Detection Announces Global Release of New Personal Chemical Alarm Device**

**Smiths Detection Press Release**

April 23, 2009

“Smiths Detection today announces the global launch of the newest model in its Lightweight Chemical Detector series, the LCD 3.3, an individual hazardous vapour warning device. The new detector offers real-time, nerve, blood, blister and choking agent detection at, or immediately below, dangerous concentration levels.”

[http://www.smithsdetection.com/eng/1025\\_4601.php](http://www.smithsdetection.com/eng/1025_4601.php)

### **New Ebola Virus Vaccine Protects Against Lethal Infection in Animal Models**

**ScienceDaily**

April 23, 2009

“A new experimental Ebola vaccine is one step closer to realization, having proven its ability to protect against lethal infections in animal models.”

<http://www.sciencedaily.com/releases/2009/04/090421142410.htm>

### **Detecting Radiation Threats in Shipping Containers With Cell Phones and RFID Sensors**

**Sicel Technologies, Inc. Press Release**

April 21, 2009

“Sicel Technologies, Inc...today announced that it has entered into a strategic partnership with Gentag, Inc., to create the world’s first passive (no battery), disposable, wireless Radio Frequency Identification (RFID) sensor to detect radiation threats in shipping containers using modified cell phone technology.”

[http://www.siceltech.com/DVSSmartMarker/press\\_release/Gentag%20-%20Sicel%20Press%20Release.pdf](http://www.siceltech.com/DVSSmartMarker/press_release/Gentag%20-%20Sicel%20Press%20Release.pdf)

### **New Weapon in BioDefense Research: NanoLogix Kit Speeds Rapid Diagnostics of Anthrax and Bubonic Plague**

**NanoLogix Press Release**

April 13, 2009

“An independent study has found that NanoLogix’s BNP™ Ultra-Fast Identification Technology allows the viewing of anthrax cultures four times faster than conventional methods. The study...appears in the current online issue of Letters in Applied Microbiology. The authors found that NanoLogix’s BNP(TM) technology displayed colonies of anthrax in six hours, as contrasted with the fastest traditional methods, which typically take 24 hours.”

[http://www.nanologix.com/press\\_room/releases/PR\\_4\\_13\\_09\\_new\\_weapon.html](http://www.nanologix.com/press_room/releases/PR_4_13_09_new_weapon.html)

# Global Terrorism Database Includes Data on Attacks Across Four Decades

By Gary LaFree, Laura Dugan, and Erin Miller, University of Maryland and START

The National Consortium for the Study of Terrorism and Responses to Terrorism (START) has released a new version of its Global Terrorism Database (GTD), with an accompanying new Web site.

The GTD is an open-source database including information on terrorist events around the world. Unlike many other event databases, the GTD includes systematic data on domestic as well as transnational and international terrorist incidents that have occurred during this time period. For each GTD incident, information is available on the date and location of the incident, the weapons used and nature of the target, the number of casualties, and—when identifiable—the perpetrator. Over 80,000 of these incidents are included in the updated database, allowing users to extract information on past terrorist activity in order to provide context for current terrorist actions.

The previous versions of the database (GTD 1 and GTD 2) covered events that occurred from 1970 through 2004. The update to the GTD (<http://www.start.umd.edu/gtd/>) synthesized previous versions and expanded the data to include events from 1970 through 2007. Annual updates will continue to be added in the future.

Gary LaFree, Director of START, comments, "Ever since we began this project more than eight years ago, our goal has been to provide the most accurate and comprehensive unclassified data on terrorist attacks that has ever been assembled. With the 2009 release we have made substantial progress in realizing this goal."

## Characteristics of the Updated GTD

- Contains information on over 80,000 terrorist attacks
- Currently the most comprehensive unclassified database on terrorist events in the world
- Includes information on more than 27,000 bombings, 12,000 assassinations, and 2,900 kidnappings since 1970
- Includes information on at least 45 variables for each case, with more recent incidents including information on more than 120 variables
- Supervised by an advisory panel of 12 terrorism research experts
- Over 3,500,000 news articles and 25,000 news sources were reviewed to collect GTD from 1998 to 2007 alone

The screenshot shows the GTD website interface. At the top, there is a navigation bar with links for 'ABOUT GTD', 'USING GTD', 'FAQ', 'TERMS OF USE', 'CONTACT', and a 'START HOME PAGE' button. Below the navigation bar is a search section with a 'Search the Database' input field and a 'SEARCH' button. To the right of the search bar is a section titled 'Information on Over 80,000 Terrorist Attacks' with a brief description and a 'Learn more' link. Below the search bar is a 'GTD DATA RIVERS' section featuring a line graph showing trends in terrorism from 1970 to 2007. To the right of the graph is a 'THIS DATE IN TERRORISM' section with two entries: '2002 Nablus, West Bank and Gaza Strip' and '2006 Al-Miqdadiyah, Iraq', each with a 'Learn more' link. At the bottom of the page is a 'START' logo and contact information, including the email 'info@start.umd.edu' and the website 'http://www.start.umd.edu/'.

START is making the GTD available through an online, user-friendly interface in an effort to increase understanding of terrorist violence so that it can be more readily defeated. Government officials and interested researchers may request versions of the data through the GTD Web site, accessible at <http://www.start.umd.edu/START/DATA>. ♦

**START** National Consortium for the Study of Terrorism and Responses to Terrorism

A CENTER OF EXCELLENCE OF THE U.S. DEPARTMENT OF HOMELAND SECURITY BASED AT THE UNIVERSITY OF MARYLAND

The National Consortium for the Study of Terrorism and Responses to Terrorism (START) is a U.S. Department of Homeland Security Center of Excellence based at the University of Maryland. START uses state-of-the-art theories, methods, and data from the social and behavioral sciences to improve understanding of the origins, dynamics, and social and psychological impacts of terrorism. Additional information on START is available at: [www.start.umd.edu](http://www.start.umd.edu).

# History of Army Chemical and Biological Decontamination – Part V

By Jeffery K. Smart, U.S. Army Research, Development and Engineering Command Historian

This article is Part V of a series of articles extracted from the *History of Army Chemical and Biological Decontamination*, by Mr. Jeffery K. Smart, U.S. Army Research, Development and Engineering Command (RDECOM) Historian, July 2007. This presentation is edited, with permission of the author, for the *CBRNIAC Newsletter*.

## THE 1950s

### Decontaminating Agent

#### Supertropical Bleach (STB) Decontaminating Agent

Although the Army concentrated on the decontamination of nerve agents during the 1950s, the decontamination of mustard agent remained a concern. In 1950, the Army standardized Supertropical Bleach (STB), the improved bleaching powder containing about 30% available chlorine with calcium oxide added as stabilizer, to replace Grade 3 bleach. STB was more stable in long-term storage, particularly in temperature extremes, and was easier to spread from a decontaminating apparatus due to its more uniform consistency. It was effective against Lewisite, V and G nerve agents, and biological agents. STB could be used as a slurry paste, dry mix, slurry mix, or camouflaged with a dye mixture. It normally came in a 60-pound drum. Citric acid was used as an antiset agent with STB. During cold weather it helped prevent the slurry from clogging the lines and settling in the tank and during warm weather, it prevented the slurry from foaming. One of the major problems with STB was the cost and production difficulty. It was a



low-volume and low-profit item that American industry refused to produce. By the 1970s, India was the sole source for the chlorinated lime used in STB. In 1983, the Army completed a pilot production facility at a contractor's plant in Columbus, Ohio, to demonstrate a new process of production to potential domestic industrial bidders. The pilot plant used a liquid reactor process that combined calcium hydroxide with chlorine. After the successful demonstration, the pilot plant was moved to Pine Bluff Arsenal to convert old bleaching agent to STB specifications. STB remains today an expendable item used for decontamination.<sup>36</sup>

low-volume and low-profit item that American industry refused to produce. By the 1970s, India was the sole source for the chlorinated lime used in STB. In 1983, the Army completed a pilot production

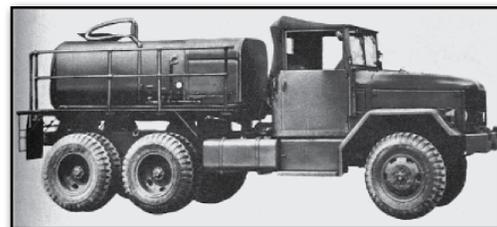
### Biological Decontamination

During the 1950s, the Army continued to examine the various biological decontaminants identified during World War II at Fort Detrick. The Army made the most progress on examining ethylene oxide (ETO) as a biological agent decontaminant, although it was never standardized. It was sealed in E7 glass ampoules for use with Quartermaster Corps delousing bags or the Chemical Corps vapor-proof sack to sterilize material in bulk. One of the main problems with ETO was its flammability in its pure state. Additional research demonstrated that the material was less flammable when mixed with Freon 12. The Army also continued to examine formaldehyde and formalin, an aqueous solution of formaldehyde and methanol. Researchers designed aerosol bomb dispensers for its dissemination. The primary problem with formaldehyde was that it left a deposit on surfaces and the vapors were very toxic.<sup>37</sup>

### Decontaminating Equipment

#### M3A3 Decontaminating Apparatus

One of the major problems with the M3A2 Decontaminating Apparatus was that the wooden storage tank was susceptible to



mold and fungus. To solve that problem, a new 400-gallon steel tank replaced the wooden tank. The new version was designated the M3A3 Truck Mounted Power-Driven Decontaminating Apparatus and was standardized in 1952 during the Korean War. Similar to the earlier version, it was designed to spray water, bleach slurry, or other decontaminants and, as a secondary mission, fight fires, spray water-soluble paint, or serve as field showers. During the Korean War, the Army procured 329 units and the Air Force procured 225 units. The M9 Decontaminating Apparatus eventually replaced the M3A3 and it was obsoleted in 1972.<sup>38</sup>

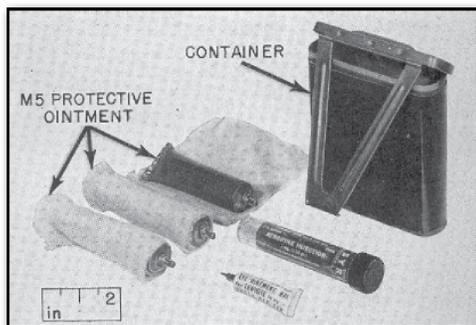
#### M5A1/M5A2 Protection and Treatment Kits

Following the Allied discovery of the German nerve agents at the end of World War II, atropine was quickly identified as a treatment for casualties. The M5 Protective Ointment Kit was modified in 1950 by the removal of one of the M5 Protective Ointment tubes and the

Continued pg. 17

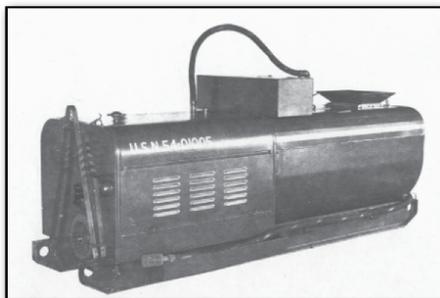
## History *cont.*

addition of a syrette of atropine sulfate. The kit still contained three tubes of M5 Protective Ointment and one tube of BAL eye ointment. The Army, Navy, Air Force, and Marines procured over 1.2 million M5A1 Protective Ointment



Kits. The kit was renamed the M5A1 Protection and Treatment Kit in 1955. In 1959, the atropine syrette was replaced by an automatic self-ejector unit. As a result of this change, the kit was standardized as the M5A2 Protection and Treatment Kit. The M5A1 Kit was reclassified Standard B and existing units were to be converted to M5A2 kits. Although the Navy and Marines maintained a separate requirement for the M5A1 and M5A2 kits, the Army reversed their decision in 1960 and did not produce M5A2 kits. Instead, many of the M5A1 kits were eventually modified into M5A3 and M5A4 kits during the 1960s. The Army obsoleted the M5A1 and M5A2 kits in 1969.<sup>39</sup>

## M6 Decontaminating Apparatus



During the Korean War, the Navy requested new production of the M4 Skid Mounted Decontaminating Apparatus for shore installation and barge use. Instead of producing new M4 units, the Army incorporated existing M3A2 400-gallon wooden tanks and parts on a

skid mount and redesignated the new units the M6 Skid Mounted Power-Driven Decontaminating Apparatus. The M6 apparatus was standardized in 1952 and 40 units were ordered. Before the units were completed, the Army decided to switch to the 400-gallon steel tank. The Army procured 108 M6 units with the steel tank primarily to meet the Navy requirement. The M6 was eventually replaced by the M12 Decontaminating Apparatus and was obsoleted in 1967.<sup>40</sup>

## M7/M7A1 Decontaminating Apparatus

In 1954, the Navy requested the Army to standardize a modernized version of a Navy fire-fighting and decontamination unit. The M7 Trailer-Mounted Power-Driven Decontaminating Apparatus consisted of 150-gallon steel tank, a pump, and a commercial gasoline engine mounted on a two-wheeled trailer. It weighed about 2,600 pounds and could be attached to almost any combat vehicle. During the approval process of the M7 Decontaminating Apparatus, the Corps of Engineers objected to the use of a non-standard commercial gasoline engine on the unit. To correct the problem, the Army standardized the M7A1 Trailer Mounted Power-Driven Decontaminating Apparatus in 1954 with a standard gasoline engine and reclassified the M7 limited standard. Both the M7 and M7A1 were obsoleted in 1958 and replaced by the M8 Decontaminating Apparatus.<sup>41</sup>

## M8/M8A1/M8A2 Decontaminating Apparatus

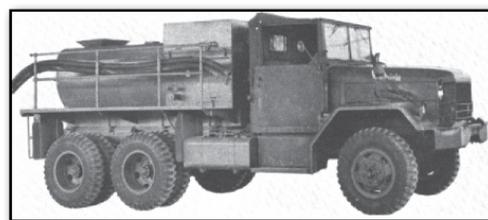
After the standardization of the M7 series decontamination apparatus, the Navy requested a larger, lighter weight, 200-gallon trailer mounted unit that was commercially available. As a result of this request, the Army standardized three versions of the same decontamination apparatus in 1958. The E15 Decontaminating Apparatus was standardized as the M8 Trailer-Mounted Power-Driven Decontaminating



Apparatus for Navy use at shore bases. It consisted of a 200-gallon steel tank, gasoline engine, and pump mounted on a commercial trailer. The unit weighed 1,800 pounds. The Navy procured 53 M8 units. To meet a Marine Corps

requirement for a standard Ordnance trailer that could handle heavy field duty, the E15R1 was standardized as the M8A1 Trailer-Mounted Power-Driven Decontaminating Apparatus. The Marines and the Navy procured 133 of these units. Additional improvements to the trailer and the tank resulted in the E15R2 version being standardized as the M8A2 Trailer-Mounted Power-Driven Decontaminating Apparatus. The Army, Navy, and Marines ordered 235 of the M8A2 units. It consisted of a 200-gallon metal tank, a pump, a gasoline engine, and two spray guns mounted on a trailer. The entire unit weighed 2,650 pounds empty. Although it was designed to spray bleach slurry or other decontaminants, the unit could also be used to spray paint, fungicides, insecticides, or water to fight fires. The M8/M8A1/M8A2 units were eventually replaced by the M12/M12A1 skid-mounted units and were obsoleted in 1967.<sup>42</sup>

## M9 Decontaminating Apparatus



In 1952, the Army initiated a project to make major improvements to the M3A3 Decontamination Apparatus. After a series of tests, the

M9 (E9) Truck-Mounted Power-Driven Decontaminating Apparatus was standardized in 1958 to replace the M3A3 units. The major improvements included a large pump capacity, a longer pump life without requiring repair, improved piping for winter operations, improved shower rails, additional spray guns for firefighting, and spring mounts. The M9 could be used for decontamination, as a fluid pump, for firefighting, as a field shower, or even as a water-soluble paint sprayer. It consisted of a 400-gallon steel tank and 20-gallon detergent tank mounted on an M45 truck chassis. There was also an optional water heater. The truck engine provided the power to run the pump. The truck had seats on the front fenders for soldiers using handheld spray nozzles and fender-mounted spray hoses for automatic operation. While driving slowly and using both sprayers, the unit could cover a 12-foot wide path. The Army procured 311 M9 units before the

*Continued pg. 18*

## History *cont.*

standardization of the M12A1 skid-mounted apparatus in 1966 resulted in the M9 being reclassified as Standard B. After the M9 became uneconomical to repair and support, the Army obsoleted it in 1976.<sup>43</sup>

## THE 1960S

### Decontaminating Agent

#### Decontaminating Solution 2 (DS2)



Decontaminating Agent Noncorrosive (DANC) proved to be particularly corrosive to the brass parts of the M2 Decontaminating Apparatus, so the Army spent a decade trying to develop a replacement. After investigating Decontamination Solution (DS) and

then Decontamination Solution 1 (DS1), the Army standardized Decontaminating Solution 2 (DS2) in 1960. DS2 was a clear amber solution of 70% diethylenetriamine, 28% methyl cellosolve (ethylene glycol monomethyl ether), and 2% sodium hydroxide. It came in a five-gallon pail for large-scale decontamination operations, or a 1-1/3 quart can used to refill the M11 Portable Decontaminating Apparatus. DS2 was effective against all known chemical agents including the G- and V-series of nerve agents, mustard agent, and against most biological material (except bacterial spores). It was less destructive to metals, plastics, rubber, and fabrics than DANC. On the downside, it was known to remove and soften new paint, and discolor old paint. It was also irritating to the skin. In 1983 the National Institute for Occupational Safety and Health issued a warning that ethylene glycol monomethyl ether was a possible health hazard. Because of DS2's problems, the Army initiated a replacement study shortly after it was standardized. Although many replacements were studied over the years, all were found lacking in at least one requirement. Although no universal decontaminant has been found to replace DS2, the Army discontinued using DS2 as the standard decontaminating agent due to safety issues.<sup>44</sup>

### BPL Biological Decontaminating Agent

In 1947, the Army initiated a program to find a biological decontaminating agent. Early work on the project examined Formaldehyde Solution (USP) and ethylene oxide. A commercially available decontaminant called beta-propiolactone (BPL) was standardized in 1960. It was a colorless liquid that was noncorrosive and nonflammable and highly effective against microorganisms. BPL was stored in one-gallon pails that could safely be stored under most conditions. However, BPL was extremely irritating to humans and therefore, mask and protective clothing were required during its use. A research program to develop a replacement for BPL proved unsuccessful. Other problems were that BPL could not be procured or shipped without a license from the Department of Agriculture since it was carcinogen, and the only producer refused to apply for one. In 1979, the Army decided to use DS2 and STB as biological decontaminants and obsoleted BPL.<sup>45</sup>

### Chemical Decontaminant 1 (CD-1)

One of the early possible replacements for DS2 was the Air Force's CD-1 decontaminating agent. CD-1 was developed in 1968 to prevent damage to sensitive aircraft parts caused by DS2. It consisted of monoethanolamine, isopropanolamine, and lithium hydroxide. Further testing during the early 1970s indicated that CD-1 was not an effective decontaminant for mustard agent. In 1974, CD-1 was dropped from consideration as a replacement for DS2.<sup>46</sup>

### Decontaminating Equipment

#### M5A3/M5A4 Protection and Treatment Kits



In 1960, before the conversion of the M5A1 Protection and Treatment Kits to M5A2 kits took place, the Army decided to remove the BAL eye ointment tube from the kit due to the perceived lack of threat from a lewisite attack. This resulted in the standardization of the M5A3 Protection and Treatment Kit. The existing M5A1 kits were then converted to M5A3 kits by the removal of the BAL ointment tube and the addition of an automatic atropine injector.

The Marines procured 120,000 of the M5A3 kits. In 1963, the Army decided to issue the atropine injectors separately from the M5A3 kits. As a result of this decision, two years later, the M13 Decontaminating and Reimpregnation Kit was standardized without atropine injectors. A delay in the production of the new M13 kits resulted in the Army removing the atropine injectors and BAL Eye Ointment from existing M5A1 kits and adding a fourth tube of M5 Protective Ointment. This new configuration was standardized as the M5A4 Protection and Treatment Set in 1965. Once the M13 kits were in production, the Army obsoleted the M5A3, and M5A4 kits in 1969.<sup>47</sup>

### M11 Decontaminating Apparatus

In conjunction with the standardization of DS2 in 1960, the Army standardized the M11 (E17R2) Portable Decontaminating Apparatus to replace the earlier M2 Decontaminating Apparatus. The M11 was a refillable fire extinguisher type unit used to decontaminate vehicles and weapons. It held 1-1/3 quarts of DS2. A nitrogen-filled cylinder provided the pressure for spraying. Raising the unit's handle punctured the



Continued pg. 19

## History *cont.*

nitrogen cylinder, and the resulting pressure allowed for a spray range up to eight feet. The unit came with a mounting bracket to attach it to equipment or a vehicle.<sup>48</sup>

### M12 Decontaminating Apparatus

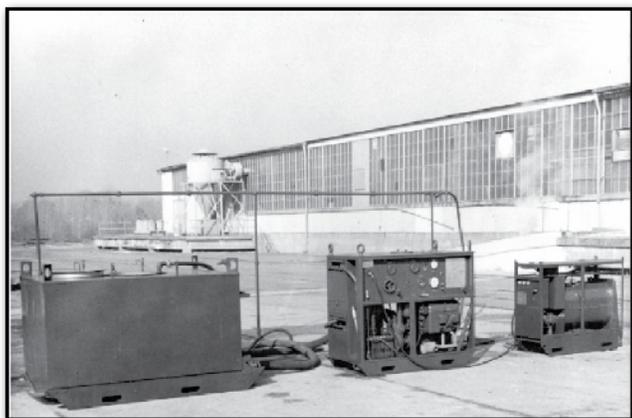


The continuing need for a multipurpose decontaminating apparatus suitable for the Navy, Marines, and the Air Force resulted in the standardization of the M12 Skid-Mounted Power-driven Multipurpose Decontaminating Apparatus in 1961. In addition to decontamination, the unit could be used for firefighting, deicing of aircraft, cleaning of aircraft and vehicles, mixing and pumping of impregnate, general pumping requirements, hot and cold showers, and the spraying of insecticides and fungicides.

It could handle bleach slurry, deicing and defrosting fluids, firefighting foam solutions, and detergent compounds. The M12 consisted of two nonintegral sections, both skid mounted on an aluminum alloy frame and connected only by two hoses. One section held a pump, engine, hose reels, flush water tank, fuel tank, and controls. The other section was either a 200- or 500-gallon stainless steel decontaminant tank, a 20-gallon detergent tank, a hopper blender for mixing STB with water to make bleach slurry, a mixing unit for detergent or foam liquids, and control functions. An optional heater was also available for showers or deicing operations. The Navy, Marines, and Air Force procured 650 M12 units. Of those procured, the Army kept six M12 units and these were eventually converted to M12A1 units. In 1979, the Army obsoleted the M12 in favor of the M12A1.<sup>49</sup>

### M12A1 Decontaminating Apparatus

The successful design of the M12 Decontaminating Apparatus for the Navy, Marines, and Air Force, led the Army to reexamine the M12 as a replacement for the M9 truck-mounted unit. As a result of this testing, the M12A1 Skid-Mounted Power-driven Multipurpose Decontaminating



Apparatus was standardized in 1966. It consisted of three sections, a 500-gallon stainless-steel tank, a water heater, and a pump unit. Similar to the M12 unit, the M12A1 was designed to mix and spray decontaminating agent and hot, soapy water rinses during field decontamination operations. As secondary missions, the unit could also be used for firefighting with water or foam, deicing operations, washing vehicles, as a pump station, and as field showers for soldiers. The field shower assembly was designed to handle 25 soldiers at a time. The M12A1 was furnished to decontaminating units and to the Air Force and Marine Corps. Initially, the Army ordered 53 of the units in 1967. Although the M17 Lightweight Decontaminating Apparatus, standardized in 1987, replaced the M12A1 in many applications, the M12A1 remained a standard Army item. During Operation Desert Shield/Storm in 1990–1991, the M12A1 was deployed to the front to handle most large scale decontaminating operations. In 2003, the M12A1 was modernized by adding a diesel engine, improved controls and burners, and a longer operation time before refueling.<sup>50</sup>

### M13 Individual Decontaminating and Reimpregnation Kit



Prior to the 1960s, the only individual decontamination kit was the M5A1 Protection and Treatment Kit containing M5 Protective Ointment. In 1965, the Army replaced the M5A1 kits with the M13 (E21R7) Individual Decontaminating and Reimpregnation Kit. The kit consisted of an aluminum (later plastic) container containing two cloth bags

of chloramide (XXCC3) decontaminating and reimpregnation powder (for clothing and equipment decontamination), a United Kingdom Personal Decontamination Outfit (PDO) pad filled with fuller's earth (for skin decontamination), a B-1 dye capsule (for use to detect chemical contamination on clothing), and a razor blade (for cutting out heavily contaminated pieces of clothing). The chloramide powder neutralized nerve and blister agents. The fuller's earth was an absorbent that removed the agent from the skin. It did not neutralize the agents and, unlike M5 Protective Ointment, could not be applied prior to an attack. The whole kit weighed about 0.7 pounds and was designed to fit in the M17 Protective Mask carrier. The Army procured 500,000 of the kits in 1966 to replace the M5 series kits. By the 1980s, the kit was no longer recommended for skin decontamination and it was obsoleted in 1989.<sup>51</sup> ♦



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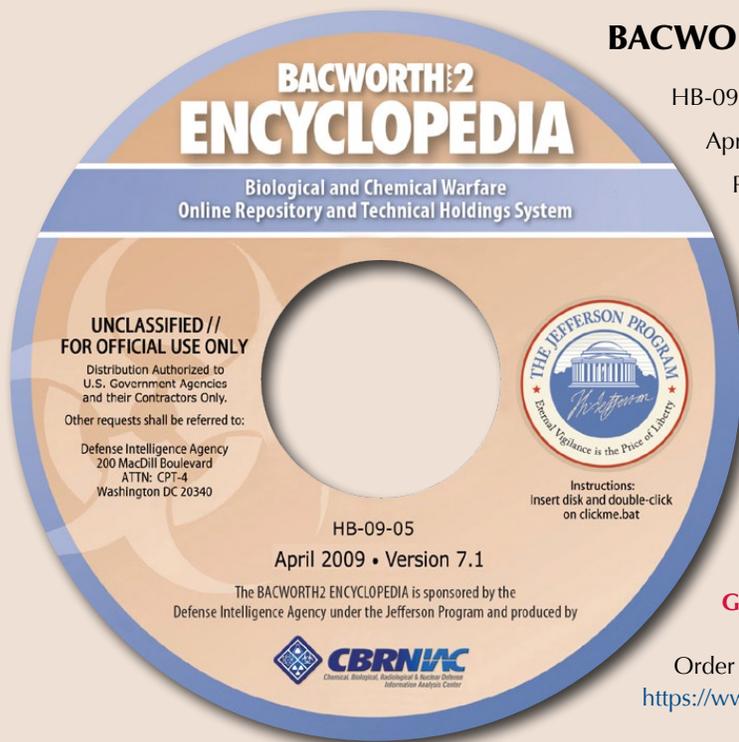
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