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Information Analysis Center
2006
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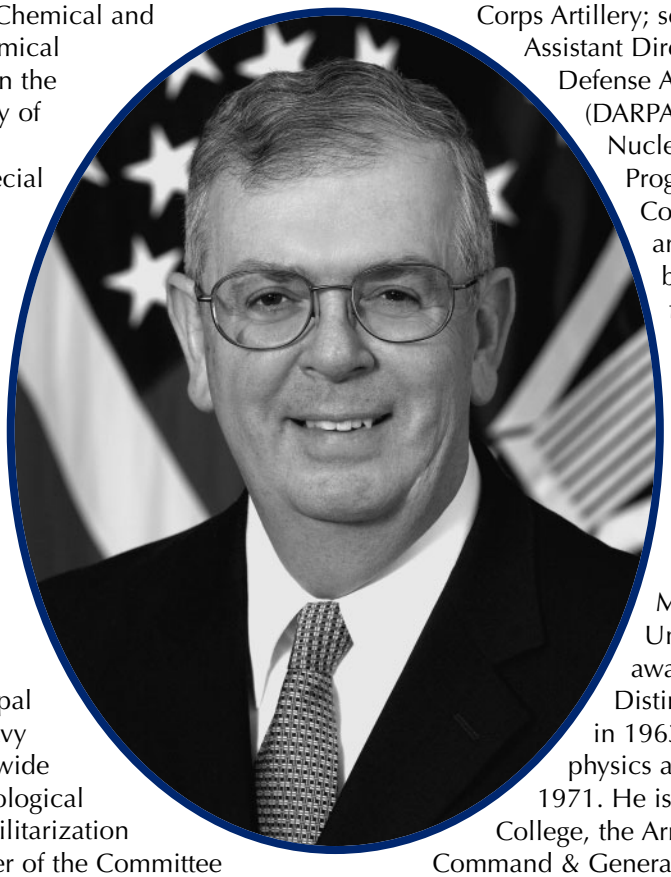
Volume 7 Number 1

Mr. Jean D. Reed, Special Assistant, Chemical and Biological Defense and Chemical Demilitarization Programs



Mr. Reed is Special Assistant, Chemical and Biological Defense and Chemical Demilitarization Programs, in the Office of the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs). As Special Assistant, Mr. Reed has responsibility for oversight of chemical and biological defense programs throughout the Department of Defense and destruction of the United States stockpile of lethal chemical agents and munitions. He was appointed to the Senior Executive Service on December 27, 2005.

Mr. Reed comes to this position after 15 years as a professional staff member of the Committee on the Armed Services, U.S. House of Representatives, where he had principal responsibility for staff oversight of Navy research and development, Defense-wide science and technology, chemical-biological defense, and chemical weapons demilitarization programs. He was a principal member of the Committee staff team on the Persian Gulf War. He was also principal staff member for the Committee's special inquiry into the chemical and biological threat and co-authored the inquiry's report, "Countering the Chemical and Biological Weapons Threat in the Post-Soviet World," published in February 1993.

Mr. Reed was born July 25, 1939, in Muskogee, Oklahoma. He was commissioned a 2nd Lieutenant, Field Artillery, following graduation from the University of Oklahoma in 1960, and retired as an Army Colonel in August 1990, after a 30-year career that included extensive experience in line field artillery, combat, research and development assignments, and the Army Staff. He commanded the Fire Support Armaments Center (a major Army research, development, and engineering laboratory at Picatinny Arsenal); was Deputy Commander of VII Corps Artillery; served as a program manager and Assistant Director for Weapons Technology at the Defense Advanced Research Projects Agency (DARPA); was Deputy Special Assistant for Nuclear, Biological, and Chemical Programs at the Army Materiel Command; and commanded a field artillery battalion and a field artillery battery. At DARPA he was responsible for the Assault Breaker and Tank Breaker weapon demonstration programs (which were subsequently fielded as the Army Tactical Missile System and the Javelin medium anti-armor missile system). He served two overseas tours in Vietnam and two in Germany.

Mr. Reed is an alumnus of the University of Oklahoma where he was awarded a BS in Physics (with Distinction) in 1960 and an MS in physics in 1963. He did post-graduate work in physics at Georgetown University in 1970-1971. He is a graduate of the National War College, the Army War College, and the Army Command & General Staff College, where he earned the degree of Master of Military Art & Science. He was a Research Fellow at the National Defense University and a Senior Army Fellow at the Army's Strategic Studies Institute. He is a member of the American Physical Society and Phi Beta Kappa. His monograph, *NATO's Theater Nuclear Forces, A Coherent Strategy for the 80's*, was published by the NDU Press in 1983.

Mr. Reed and his wife live in Arlington, Virginia. They have two children leading successful professional careers.

For more information, visit the official website of the Office of the Special Assistant, Chemical and Biological Defense and Chemical Demilitarization Programs at: http://www.acq.osd.mil/cp/index.html.

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CDR USA RDECOM
Edgewood Chemical Biological Center
ATTN: AMSRD-ECB-RT (CBIAC COTR)
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 CBIAC for information products and services. CBIAC 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.

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

The CBIAC 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 CBIAC 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 CBIAC COTR prior to publication. The appearance of an advertisement or article in the ***CBIAC Newsletter*** does not constitute endorsement by the DoD or the CBIAC.

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ECBC Opens Advanced Chemistry Laboratory

By Jennifer W. Gaskill, ECBC Strategic Communication Team

A facility designed for defense research with super-toxic chemical warfare agents opened October 7, 2005, with a dedication ceremony at the U.S. Army Edgewood Chemical Biological Center (ECBC) located on Aberdeen Proving Ground, Maryland.

State and local officials gathered to dedicate the Advanced Chemistry Laboratory (ACL) to Dr. Edward J. Poziomek, a former scientist at ECBC. Senator Paul S. Sarbanes presented the Poziomek family with a United States Flag that had been flown over the Capitol in commemoration of their father's legacy of published and patented chemical agent research that foreshadows the work that will occur in the ACL.

"Dr. Poziomek was a former ECBC chemist whose dedication to science and commitment to sharing expertise helped position the Center as a principal research and development organization," said Dr. Raymond Mackay, Director of Research and Technology at ECBC. "He was a mentor, friend, and inspiration to everyone."

"The dedication of the ACL marks a major milestone of a new era of cutting-edge science and technology development," said Jim Zarzycki, Technical Director of ECBC. "More now than ever, we are prepared to fulfill our mission of preparing our Warfighter and domestic emergency responders to counter the terrible threat of weapons of mass destruction."

"The cost of $46M for the facility will benefit the nation by increasing the ability for ECBC to better counter the evolving threat of chemical warfare and the use of chemical agents by terrorists," stated Major General Roger Nadeau, Commanding General, U.S. Army Research, Development and Engineering Command. "With our nation at war, up-tempo readiness is of our highest concern."

ECBC Chemist, Dr. Terrence D'Onofrio, remarked "I am excited about the new facility in that it will logistically allow us to work closer with scientists just down the hall in a variety of fields that contribute to my research." The ACL houses over 20 individual labs specializing in the research of physical properties, decontamination sciences, filtration, mid-spectrum agents, synthesis, and nuclear magnetic resonance. Dr. D'Onofrio is studying how chemical agent contamination affects various common surfaces, including asphalt, soil, and concrete, in order to develop more accurate detection, protection and decontamination technologies.

"The ACL is a completely unique facility designed for working with the world's most super toxic compounds," said Zarzycki. "The ACL moves U.S. defense capabilities a giant step forward. In addition to supporting ECBC's warfighter mission, the ACL allows ECBC to continue to serve the homeland security community as well as all federal agencies including the intelligence community, FBI, Department of Justice, and the Department of State."

Visit ECBC online at http://www.ecbc.army.mil

Contract Awards • *by Mary Frances Tracy*

Accelerate State and Local Pandemic Influenza Preparedness Efforts
Grants will be awarded to all 50 states, 7 territories, the Commonwealth of Puerto Rico, and the District of Columbia
$100,000,000 January 12, 2006
By U.S. Department of Health and Human Services, Washington, DC

Chemical Agent Neutralization Operations, Newport, IN
Parsons Infrastructure & Technology Group
Pasadena, CA
$196,981,724 January 10, 2006
By U.S. Army Field Support Command, Rock Island, Il

Rocky Mountain Region First Responders, Physicians, Pharmacists, Nurses, Emergency Planners and Others Taught Basic Incident Command Structure and What to Do in the Event of a Major Health-Care Crisis
The University of Montana; Billings, MT
St. Vincent Healthcare Foundation; Billings, MT
$4,300,000 January 5, 2006
By Department of Public Health and Human Services and the Department of Emergency Services, MT

Superfund Technical Assessment & Response Team (START)
Tetra Tech, Inc.
Pasadena, CA
$48,500,000 January 5, 2006
By U.S. Environmental Protection Agency, Washington, DC

Advanced Materials Manufacturing and Testing Information Analysis Center (AMMTIAC)
Alion Science and Technology
Rome, NY
$11,154,542 December 20, 2005
By Headquarters 55th Wing (ACC), Offutt Air Force Base, NE

Anti-Terror Research to Help Ready the Nation to Defend Itself Against Terrorist Attacks Where Viruses or Bacteria Are Used as Weapons
University of Rochester Medical Center
Rochester, NY
Two - $10,000,000 Grants November 8, 2005
By National Institute of Allergy and Infectious Diseases, Bethesda, MD

Commercialization Services Executed Through a Unique Model for Both Spin-In and Spin-Out Defense and Homeland Security Technologies
San Diego State University Foundation
San Diego, CA
$5,640,000 November 1, 2005
By Space and Naval Warfare System Center, San Diego, CA

Develop an Enzyme-Based Universal Decontamination Solution Targeting Chemical and Biological Warfare Agents, Including Protein-Based Toxins Such as Ricin
Genencor International
Rochester, NY
$2,000,000 October 31, 2005
By U.S. Department of Defense, Washington, DC

Produce a Vaccine to Counter the Threat of a Bird-Flu Pandemic
Chiron Corporation
Emeryville, CA
$62,500,000 October 28, 2005
By U.S. Department of Health and Human Services, Bethesda, MD

Research into Improving Biodefense Vaccines' Effectiveness on the Elderly, Newborns and Others With Weakened Immune Systems
Mount Sinai School of Medicine, New York City, NY; Oregon Health and Science University, Portland, OR; Blood Center of Wisconsin, Milwaukee, WI; Yale University, New Haven, CT; University of Oklahoma Health Sciences Center, Oklahoma City, OK; University of Washington, Seattle, WA; Wistar Institute and Children's Hospital, Philadelphia, PA; Emory University, Atlanta, GA; University of Rochester, Rochester, NY
$100,000,000 (10 five-year contracts - $4 million to $14 million)
October 25, 2005
By National Institute of Allergy and Infectious Diseases, Bethesda, MD

Engineered Bio-Molecular Nano-Devices/Systems
Electro Bio Sciences
San Diego, CA
$11,658,889 October 21, 2005
By U.S. Air Force Office of Scientific Research, Arlington, VA

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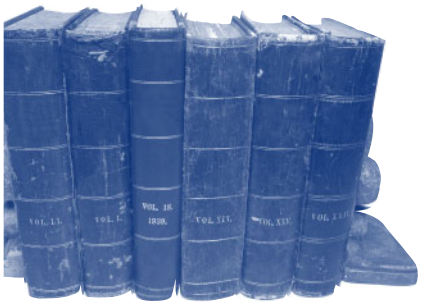


History of Chemical and Biological Detectors, Alarms, and Warning Systems†

Mr. Jeffery K. Smart, Command Historian

BETWEEN THE WORLD WARS

Chemical Agent Detectors

Military Requirement for a Chemical Agent Detector

In December 1933, the Chief of the Chemical Warfare Service recognized that the Army desperately needed a chemical agent detector by requesting that a military requirement be established. In 1934, the Chemical Warfare Service prepared a military requirement for a chemical agent detector. This was visualized as an item that could: "detect with great rapidity the presence of one chemical agent in the atmosphere, primarily mustard gas, in the presence of other chemical agents." The fruition of this project would take several years.[1]

Warning Systems

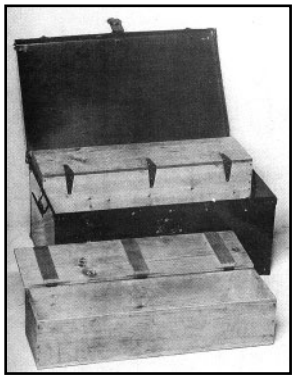
Standardization of Alarms

In 1924, the Chemical Warfare Service standardized horn and rattle alarms used during the war as official gas alarms. There were three types of horn alarms: the Stewart, the Sparton, and the Klaxon. The rattle alarm was a police item.

In 1926, the Sparton and Klaxon alarms were obsoleted. The rattle alarm was obsoleted because it sounded too much like machine gun fire.[2]

NBC Reconnaissance

M1 Field Laboratory



The establishment of a chemical laboratory in Europe during World War I proved the value of a frontline chemical analysis capability. In 1929, the Chemical Warfare Service began work on designing a field chemical laboratory. The result of this project was the M1 Field Laboratory, standardized in 1936. Although it was not intended as a mobile reconnaissance system, it could be assembled and disassembled for setup at semi-permanent sites near the front. The unit consisted of 88 foot lockers, 20 boxes, and 15 crates, totaling 21,000 pounds. Seven trucks were required to move the laboratory. The size of the laboratory proved too bulky for easy movement. The M1 Laboratory was eventually replaced by the M2 Base Laboratory during World War II and was obsoleted in 1946.[3]

THE 1940'S

Chemical Agent Detectors

M4 Mustard Agent Vapor Detector Kit

The 1934 requirements for a chemical agent detector were not met until World War II. The first standardized item was the M4 Vapor Detector Kit, which could detect even faint concentrations of mustard agent. The M4 HS Vapor Detector Kit was standardized in 1942. The key to its detection capability was a new reagent, designated DB3, discovered in 1941. DB3 reacted with mustard agent to give an intense color change. The kit consisted of 36 detector tubes, a rubber sampling bulb, developing solution, DB3 reagent, and matches, all stored in a wooden box. The kit could also detect high concentrations of chloracetophenone (CN) and cyanogen chloride (CK) agents in the air. The kit was reclassified as limited standard in 1943 when the better M9 Detector Kit was standardized. It was finally obsoleted in 1945.[4]

M5 Liquid Detector Paint

In early 1941, the Chemical Warfare Service investigated British detector paint similar to the dye-based ones developed during World War I. This one used a blue dye designated B-1 that turned red when liquid drops of mustard agent reacted with it. The paint was not standardized due to some of the ingredients being unavailable. Additional research established that other colors could be added to the blue dye, yet it would still turn red when exposed to liquid mustard agent. This concept led to the development of M5 Liquid Vesicant Detector Paint that was standardized in 1942. The paint was olive drab and could be painted on a surface. It completely dried in about five hours and was effective up to a month. Contact with liquid mustard agent resulted in a red spot, although decontaminating agent and protective ointment could cause a false reaction. After the War,

Continued pg. 12

*†This article is Part II of a series of articles extracted from the **History of Chemical and Biological Detectors, Alarms, and Warning Systems**, by Mr. Jeffery K. Smart, U.S. Army Research, Development and Engineering Command (RDECOM) Historian, June, 2000. This presentation is edited, with permission of the author, for the **CBIAC Newsletter** forum.*

R. Paul Ryan Appointed DTIC Administrator

by Sandy Schwalb

Mr. R. Paul Ryan is the new Administrator of the Defense Technical Information Center (DTIC). He had been Acting Administrator since November 2004.

Previously at DTIC, Ryan was the Deputy Administrator responsible for the daily operations, budget, and personnel for the Center. He transformed DTIC from a paper-based workflow to an electronic environment. His leadership skills were exemplified when, in 2004, DTIC was established as a Department of Defense (DoD) Field Activity, aligned with the Director, Defense Research and Engineering, in the office of the Under Secretary of Defense, Acquisition, Technology and Logistics.

Of his appointment, Ryan said, "I have been with DTIC for over 20 years and look forward to this opportunity to lead the organization. My motto is 'mission first, people always.' I like to remind the DTIC staff that what we do everyday is important for the DoD and for our military members fighting for freedom around the globe."

He was also DTIC's Director, Office of User Services and Marketing and held positions with the U.S. Army at Picatinny Arsenal, Dover, NJ and the Ballistic Research Laboratory, Aberdeen Proving Ground, MD. A native of Philadelphia, Ryan holds degrees from Villanova University and Drexel University. His awards and honors include both the Meritorious Civilian Service and the Exceptional Civilian Service Awards.

Active in the scientific and technical community at the local, national, and international levels, Ryan is a former President and member of the Board of Trustees of the National Federation of Abstracting and Information Services (NFAIS). He was Chair and Deputy Chair of the NATO Advisory Group for Aerospace Research & Development (AGARD) Technical Information Panel. He has been a member of the Board of Trustees of the Harford County (MD) Public Library System in addition to serving as its Treasurer and Board Chair.

Well known as the DoD central facility for defense information for 60 years, DTIC provides a "one-stop" access point to DoD scientific, research and engineering information. Please visit http://www.dtic.mil for more information about DTIC.

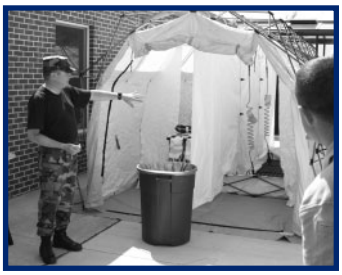
Army Course Prepares Nation's Health Care Providers for Potential CBRNE Terrorist Attacks

The U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) will offer the **Hospital Management of Chemical, Biological, Radiological/Nuclear and Explosive Incidents Course (HM-CBRNE)**, April 24-28, 2006, at Aberdeen Proving Ground, Maryland.

Although developed to provide civilian healthcare professionals with state-of-the-art instruction in planning for and managing multicasualty incidents resulting from CBRNE terrorist attacks, the course is open to military attendees. Past military participants have included Reserve officers engaged in civilian response planning in their communities, as well as Public Health Service personnel.

The HM-CBRNE course features didactic classroom presentations and interactive discussion on chemical, biological and radiological agent effects and patient management, multi-casualty triage, personal protective equipment, decontamination, blast injuries, and hazard detection.

Additional topics include epidemiology, the National Incident Management System and National Response Plan, and hospital emergency incident command and management. Instruction is also provided in the form of hypothetical scenario planning sessions and class interactions. The course culminates in a multi-hospital tabletop exercise simulating community response to a major non-conventional event, challenging students' ability to apply hospital incident management and other learned concepts. The tabletop requires professionals to manage limited hospital resources to meet the safety, patient care and other operational challenges of the hypothetical disaster.



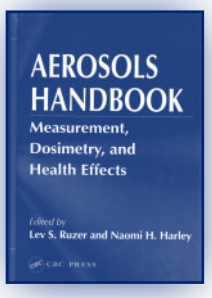
The HM-CBRNE Course is hosted by USAMRICD's Chemical Casualty Care Division and is a joint venture of USAMRICD, the Army Medical Research Institute of Infectious Diseases at Ft. Detrick, Maryland, and the Armed Forces Radiobiology Research Institute, in Bethesda, Maryland.

Individuals interested in registering for the April course are directed to http://ccc.apgea.army.mil/courses/in_house/cbrne.htm. More information about the course is available from the Chemical Casualty Care Division, USAMRICD, at DSN 584-2230/3393, CML (410) 436-2230/3393, by emailing ccc@apg.amedd.army.mil, or by writing to Commander, USAMRICD, Attn: MCMR-CDM (Chemical Casualty Care Division), 3100 Ricketts Point Road, Aberdeen Proving Ground, MD 21010-5400.

New CBIAC Information Resources • *By Richard M. Gilman*

Books

Ruzer, Lev. S. and Naomi H. Harley, eds. **Aerosols Handbook: Measurement, Dosimetry, and Health Effects**. Boca Raton, FL: CRC Press, 2005.



The editors devote twenty-four chapters to an in depth exploration of the health-related aspects of aerosol science. Among the most apropos for students of CB defense are: "Aspects of health-related aerosols," "Advances in monitoring methods for airborne particles," "Modeling deposition of inhaled particles," "Medical and pharmaceutical aerosols," "Bioaerosols," and "Health effects of aerosols: Mechanisms and epidemiology."

Includes numerous tables, graphs and an index.

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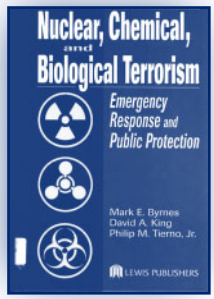
Boca Raton, FL 33431
Phone: 1-800-272-7737 Fax: 1-800-374-3401

Byrnes, Mark E., David A. King and Philip M. Tierno, Jr. **Nuclear, Chemical, and Biological Terrorism—Emergency Response and Public Protection.** Boca Raton, FL: CRC Press, 2003.



This work has eight chapters. Among the more noteworthy are "General Hazards from Exposure to Radiation and Warfare Agents," "Responding to a Nuclear Explosion," "Preparing for a Nuclear, Chemical or Biological Attack," and "Summary of Recommendations."

Contains numerous tables, a glossary, a bibliography and an index.

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Boca Raton, FL 33431
Phone: 1-800-272-7737 Fax: 1-800-374-3401

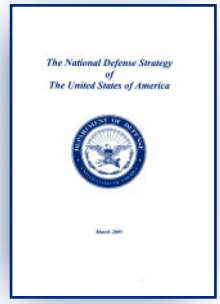
Leitenberg, Milton. **Assessing the Biological Weapons and Bioterrorism Threat.** Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2005.

This 120 page monograph is essentially a sequel to the author's book **The Problem of Biological Weapons**, published in August 2004 by the Swedish National Defense College. While explaining the basic problems associated with the threat of biological weapons and their bioterrorism potential the author poses a number of unique questions and expounds intriguing principles for the reader to ponder. These questions and principles are set forth in six chapter-like sections.

CB-166410
Strategic Studies Institute
U.S. Army War College
122 Forbes Ave.
Carlisle, PA 17013-5244
Phone: (717) 245-4212 Fax: (717) 245-3820

Documents

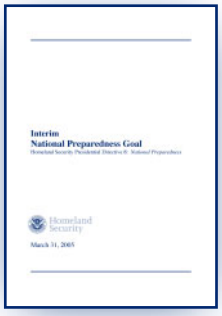
Department of Defense. **The National Defense Strategy of the United States of America.** Washington, D.C.: Department of Defense, 2005.
http://www.globalsecurity.org/military/library/policy/dod/nds-usa_mar2005.htm



"The National Defense Strategy outlines an active, layered approach to the defense of the nation and its interests. It seeks to create conditions conducive to respect for the sovereignty of nations and a secure international order favorable to freedom, democracy, and economic opportunity. This strategy promotes close cooperation with others around the world who are committed to these goals. It addresses mature and emerging threats." *(Executive Summary)*

CB-194346
Department of Defense
3050 Defense Pentagon
Washington, D.C. 20301

Department of Homeland Security. **Interim National Preparedness Goal: Homeland Security Presidential Directive 8: *National Preparedness*.** Washington, D.C.: Department of Homeland Security, 2005.
http://www.ojp.usdoj.gov/odp/docs/InterimNationalPreparednessGoal_03-31-05_1.pdf



"This document summarizes the initial results of significant work completed since December 17, 2003, when President Bush issued **Homeland Security Presidential Directive 8: *National Preparedness* (HSPD-8)**. This approach transforms how the Federal government proposes to strengthen the preparedness of the United States to prevent, protect against, respond to, and recover from terrorist attacks, major disasters, and other emergencies and how the Federal government proposes to invest homeland security resources in order to achieve the greatest return on investment for our Nation's homeland security." *(Preface)*

Continued pg. 13

In the News • *By Mary Frances Tracy*

Laser-Based Sensor Will Sniff Out Chemicals on the Move
By Grace Jean
National Defense
January 2006
"Scientists at the Army's Edgewood Chemical Biological Center in Aberdeen, Md., are working on a next generation, laser-based chemical detector capable of operating in reconnaissance vehicles while traveling at high speeds."
http://www.nationaldefensemagazine.org/issues/2006/jan/SB-Laser-Based.htm

Pentagon Chem-Bio Program Expands to Homeland Missions
By Grace Jean
National Defense
January 2006
"The Pentagon and the Department of Homeland Security are seeking to homogenize the equipment that military units and local first responders employ to detect and neutralize toxic agents."
http://www.nationaldefensemagazine.org/issues/2006/jan/pentagon.htm

Acambis Submits U.S. Licence Application for ACAM2000 Smallpox Vaccine
Press Release Acambis
January 18, 2006
"Acambis announces that it has submitted the first portion of a Biologics License Application (BLA) with the U.S. Food and Drug Administration (FDA) to seek U.S. licensure of its investigational smallpox vaccine, ACAM2000."
http://www.acambis.com/default.asp?id=14471/18/2006

Mod Spent £4m on Anthrax Vaccine
BBC News
January 11, 2006
"The Ministry of Defence spent £4.2m on anthrax vaccine last year, government figures show."
http://news.bbc.co.uk/2/hi/uk_news/politics/4604138.stm

Plant-Derived Plague Vaccine Protects Guinea Pigs
Reuters News
January 10, 2006
"A vaccine against Yersinia pestis, which scientists grew in tobacco plants, effectively protected guinea pigs against a lethal aerosol exposure to this bacterium that causes the plague, also known as the "bubonic plague," or the "black death," which killed millions of people in Europe during the Middle Ages."
http://go.reuters.com/newsArticle.jhtml?type=healthNews&storyID=10807995&src=rss/healthNews

Northrop Grumman Team Receives Contract for Third Phase of Portable Biological-Warfare Detection-System Program
Northrop Grumman News Release
January 9, 2006
"A Northrop Grumman Corporation led team has been selected by the Defense Advanced Research Projects Agency (DARPA) to continue development of the handheld isothermal silver standard sensor (HISSS), a portable system used for identifying biological-warfare agents, including bacteria, viruses and toxins."
http://www.irconnect.com/noc/press/pages/news_releases.mhtml?d=92030

U.S. Research Produces Plant-Grown Anthrax Vaccine
University of Central Florida Press Release
December 19, 2005
"UCF, NIH study: Effective, safe anthrax vaccine can be grown in tobacco plants."
http://usinfo.state.gov/gi/Archive/2005/Dec/21-764415.html

Isis Pharmaceuticals Delivers TIGER Biosensor System
Isis Pharmaceuticals, Inc. News Release
December 14, 2005
"Isis Pharmaceuticals, Inc. announced today that its Ibis division has delivered a TIGER biosensor system to the Department of Homeland Security's National Bioforensic Analysis Center (NBFAC)."
http://phx.corporate-ir.net/phoenix.zhtml?c=94554&p=irol-newsArticle&ID=795651&highlight

Syracuse Builds U.N.'s Mail Protection Machines
By Tim Knauss
The Post-Standard
December 12, 2005
"The first two units of an innovative $60,000 machine made in Syracuse to protect mail from anthrax or other bioterrorism

Continued pg. 9

Vol. 3 No. 1 of the Chem-Bio Defense Quarterly Magazine is Now Available!

In this issue of **Chem-Bio Defense Quarterly** magazine, you'll hear from the Joint Test and Evaluation Executive, Mr. Walter Hollis and his thoughts on evaluating joint systems. You will also read about how the United States Navy's Operational Test and Evaluation Force uses a multi-service test team to evaluate the Joint Biological Point Detection System onboard the USS The Sullivans.

To view the electronic version, visit: http://www.jpeocbd.osd.mil/page_manager.asp?pg=4&sub=0

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In the News *cont.*

threats rolled off the production line Friday, destined ultimately to be installed at the United Nations."
http://www.syracuse.com/business/poststandard/index.ssf?/base/business-1/1134380301100930.xml&coll=1

U.S. Offers WMD Response Training in Albania

Global Security Newswire
December 12, 2005
"The United States last week conducted WMD response training for Albanian military, police, medical and emergency personnel."
http://www.nti.org/d_newswire/issues/2005/12/12/03ECAF0D-FA6D-4B79-B8D7-C80A4C104D51.html

General Dynamics Delivers First Production Stryker NBC Reconnaissance Vehicles

News Release General Dynamics Corporation
December 9, 2005
"General Dynamics Land Systems, a business unit of General Dynamics delivered its first two low-rate initial production (LRIP) Stryker Nuclear, Biological and Chemical Reconnaissance Vehicle (NBCRV) variants to the U.S. Army yesterday at Anniston (Alabama) Army Depot."
http://www.generaldynamics.com/

Johns Hopkins University to Lead New Homeland Security Center

Press Release Johns Hopkins University
December 5, 2005
"Secretary of Homeland Security Michael Chertoff announced today the selection of Johns Hopkins University (JHU) to lead a consortium studying how the nation can best prepare for and respond to potential large-scale incidents and disasters."
http://www.dhs.gov/dhspublic/display?content=4957

Calendar of Events

Do you have a Chemical and/or Biological Defense or Homeland Security course or event to add to our Calendar? Submit the pertinent information via email to **cbiac@battelle.org**. *The CBIAC reserves the right to reject submissions. For a more extensive list of events, visit our Website at* **http://www.cbiac.apgea.army.mil/**.

April 3-5, 2006
DTIC's 2006 Conference, "Defense Research & Engineering: Information for the Warfighter"
Alexandria, VA
http://www.dtic.mil/dtic/annualconf/conf06_agenda.html

April 3-7, 2006
Course: Field Management of Chemical and Biological Casualties
Aberdeen Proving Ground, MD
https://ccc.apgea.army.mil/courses/in_house/brochureFCBC.htm

April 10-11, 2006
Joint Program Executive Officer (JPEO) - Advanced Planning Briefing for Industry (APBI)
Washington, DC
http://www.ndia.org/Template.cfm?Section=6370&Template=/ContentManagement/ContentDisplay.cfm&ContentID=10902

April 18-20, 2006
7th Annual NDIA Science & Engineering Technology Conference/DoD Tech Exposition
Lake Buena Vista, FL
http://www.ndia.org/Template.cfm?Section=6720&Template=/ContentManagement/ContentDisplay.cfm&ContentID=10396&MicrositeID=0

April 19-20, 2006
AFCEA Spring Intelligence Symposium: "Lessons Learned: The Emerging National Intelligence Partnership"
Washington, DC
http://www.afcea.org/calendar/eventdetails.asp?EventID=344

Chemical and Biological Defense
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Serving the CB Defense and Homeland Security communities

Key Army Medical CB Defense Research

U.S. Army Medical Research Institute of Infectious Diseases Gets New Commander in June 2005

By Caree Vander Linden

Col. George W. Korch, Jr., assumed command of the U.S. Army Medical Research Institute of Infectious Diseases June 20, 2005, during a ceremony on the Blue and Gray Field. Korch replaces Col. Erik A. Henchal, who commanded the Institute since June 2002. Henchal retired from the Army after 25 years of active duty service.

Photo by Larry Ostby, USAMRIID

Col. James A. Romano, commander of the U.S. Army Medical Research and Materiel Command and Fort Detrick, presented Henchal with the Legion of Merit award, calling his tenure "a time when our country looked to USAMRIID for the answers" regarding biodefense.

"I'm leaving you with one of the best teams you could hope for," Henchal told Korch, adding that USAMRIID is entering a critical time in history with the creation of the National Interagency Biodefense Campus at Fort Detrick.

Korch most recently served as Director of the Medical Chemical and Biological Defense Research Division for the Defense Threat Reduction Agency at Fort Belvoir, Virginia. He previously served USAMRIID as a research entomologist, branch chief for rapid diagnostics, virology division chief, and deputy commander.

"For all the employees of USAMRIID, you have been my heroes for over 20 years--ever since the first day that I entered your hallowed hallways and laboratories in 1982," said Korch. "And 23 years later, I can say that I am still awed to stand in the presence of giants in the field of biodefense. It's even more thrilling that I have been given this extraordinary opportunity." Korch promised that under his leadership, the Institute would continue to set the highest standard for safe and secure operations in conducting its important mission, and that it would work to deliver medical countermeasures to the military while continuing to forge essential partnerships with other services and federal laboratories. He said the central theme of his command would be, "USAMRIID--the first name in biodefense."

Romano paid tribute to USAMRIID's "proud history and determined future," and said he could "think of no finer officer to take over the challenge" of leading the Institute.

Korch received his doctoral degree in immunology and infectious diseases from the Johns Hopkins School of Hygiene and Public Health in 1985. His military assignments include medical entomologist with the entomology branch of the Army Environmental Hygiene Agency, now the U.S. Army Center for Health Promotion and Preventive Medicine; commander of the 5th Medical Detachment, 121st General Hospital, Seoul, Republic of Korea; staff officer for the Medical Biological Defense Research Program, USAMRMC; biodefense technical science officer for the Assistant Secretary of Defense for Health Affairs at the Pentagon; and Central Command theater entomologist with the 3rd Medical Command (Forward), at Camp Doha, Kuwait. Before joining DTRA, Korch directed the National Biodefense Analysis and Countermeasures Center at Fort Detrick.

U.S. Army Medical Research Institute of Infectious Diseases

Vision To be the Nation's preeminent research laboratory providing cutting-edge medical research for the warfighter against biological threats.

Mission To conduct basic and applied research on biological threats resulting in medical solutions to protect the warfighter.

Goals
- To ensure that research is conducted in a safe and secure environment.
- To preserve and enhance USAMRIID's ability to conduct basic and applied medical research in support of warfighter needs.
- To deliver competitive products to the advanced developer on schedule with the best value and quality.
- To promote a dynamic and intellectually stimulating environment that allows for personal and professional growth and a superior quality of life.

Laboratories Get New Commanders

U.S. Army Medical Research Institute of Chemical Defense Starts 2006 With New Commander

By Cindy Kronman

The U.S. Army Medical Research Institute of Chemical Defense (MRICD) began 2006 by saying farewell to Col. Gennady E. Platoff and welcoming Col. Brian J. Lukey. The change of command ceremony, presided over by Brig. Gen. Eric Schoomaker, commander of the U.S. Army Medical Research and Materiel Command (MRMC), took place on January 5, 2006 at the National Guard Armory in the Edgewood Area of Aberdeen Proving Ground.

Incoming commander Brian Lukey accepts the unit flag from Brig. Gen. Eric Schoomaker. (Photo by Stephanie Froberg)

The traditional ceremony included the 389th Army Band, and among the many distinguished guests were five former MRICD commanders: Brig. Gen. (Ret) Michael Dunn, Col. (Ret) Ernest Takafuji, Col. (Ret) Gary Hurst, Col. (Ret) James Little, and Col. James Romano, currently the deputy commander of MRMC.

Lukey assumes command after serving as the research area director (RAD) for Military Operational Medicine, MRMC, Ft. Detrick, Maryland, since 2003. During his tour as the RAD, Lukey served on several panels, to include the White House Advisory Board for perchlorate toxicology research, Congressional Special Interest for manganese health research, Department of Defense panel on tungsten toxicity, Congressional Special Interest for Neurotoxin Exposure Treatment Research Program, and DoD-Veteran Affairs-National Institutes of Health panel of Post-Traumatic Stress Syndrome.

Lukey is no stranger to the MRICD. His first tour at the institute, as a researcher, was in 1985; he served as chief of the Applied Pharmacology Branch in 1989, and chief of the Drug Assessment Division, 1999 to 2003.

Other former assignments have included chief, Certification Division, Wiesbaden Forensic Toxicology Drug Testing Laboratory, Germany (1990-1992); officer in charge, Wiesbaden Forensic Toxicology Drug Testing Laboratory (1992); chief, Laboratory Quality Management Division, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Maryland. (1992-1995); and commander, Tripler Forensic Toxicology Drug Testing Laboratory, Tripler Army Medical Center, Hawaii (1995-1999).

Lukey has authored and co-authored more than 30 publications and is co-developer of a patent. He is an honor graduate of the Army Medical Department Officer Advanced Course. His awards and decorations include the Medical Service Corps Award of Excellence, Meritorious Service Medal with 3 Oak Leaf Clusters (OLC), Army Commendation Medal with 5 OLC, and the Army Achievement Medal with 5 OLC. Lukey is a member of the Order of Military Medical Merit and wears the Expert Field Medical Badge, Airborne Badge, Air Assault Badge, and German Troop Duty Proficiency Badge (Gold). He was also awarded the Baltimore Federal Executive Board's award for Outstanding Supervisor.

U.S. Army Medical Research Institute of Chemical Defense

Vision To be the recognized Center of Excellence, the national asset, and the world leader for medical chemical defense, education, and training.

Mission To discover and develop medical countermeasures to chemical warfare agents and to train and educate personnel in the medical management of chemical casualties.

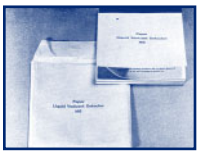
Goals

- Execute comprehensive, basic scientific research and use established and emerging technologies that support the transition of products to advanced development.
- Develop education and training capabilities for military, interagency, domestic, and international personnel in the medical management of chemical casualties.
- Provide a venue for mutually beneficial collaboration with external investigators and interagency partners to conduct medical chemical defense research against chemical warfare agents.
- Provide a capability for Good Laboratory Practice expertise.
- Share scientific information via peer-reviewed journals, publications, presentations, and technology to ensure an unparalleled knowledge base of medical chemical defense information.
- Foster a working community of dedicated military and civilian professionals who are productive and enthusiastic about working in the medical chemical defense research program.

History of Detectors *cont.*

it was found that the paint also reacted similarly to nerve agents. M5 Detector Paint was obsoleted in 1956.[5]

M6 Liquid Detector Paper

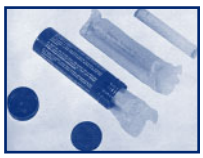


The British developed their B-1 dye based detector paint for use on paper that could be stuck on the end of a bayonet and used as a probe. The Chemical Warfare Service took the M5 Detector Paint and applied it to light Bristol board, cut it up in small pieces, and bound them in a booklet form which was standardized as M6 Liquid Agent Detector Paper in 1942. The paper functioned similar to Detector Paint and required liquid mustard agent to fall on the paper to react. After the war, the paper was found to detect nerve agents in a similar manner. M6 Liquid Agent Detector Paper was obsoleted in 1963.[6]

M7 Detector Crayon

The need for a detection capability that could detect mustard agent already on a leaking chemical shell or other surfaces resulted in the concept of the detector crayon. B-1 dye proved inappropriate for this use, so the Chemical Warfare Service switched to Impregnite I and congo red dye. These materials were held in the shape of a crayon by a wax, initially Johnson's "Glocoat." Further improvements led to the use of different types of wax. The crayon could be rubbed on a surface or crumbled and then sprinkled over a suspected contaminated surface. Upon contact with mustard agent, the pink color of the crayon turned blue. Unfortunately, the test was not specific to mustard agent since other vesicants and some acids would also give a positive result. Nitrogen mustards, however, produced no immediate response although the crayon would later turn yellow. The M7 Vesicant Detector Crayon was standardized in 1942. After the war, it was discovered that the crayon also reacted with nerve agents, turning yellow instead of blue. The M7 Crayon was obsoleted in 1965.

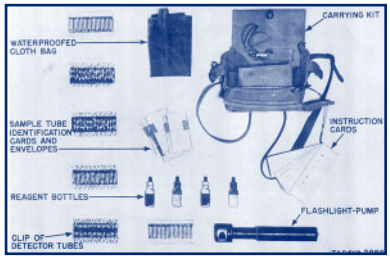
M7A1 Detector Crayon



The M7A1 Vesicant Detector Crayon was standardized in 1949 for use with the M9A1 Chemical Agent Detector Kit. It was made shorter than the M7 version to fit in the M9A1 Kit, but otherwise was essentially the same and could detect both mustard and nerve agents.[7]

M9 Chemical Agent Detector Kit

The development of the M9 (MIT E5R3) Chemical Agent Detector Kit in 1943 proved to be one of the most significant developments of the Chemical Warfare Service during the war.

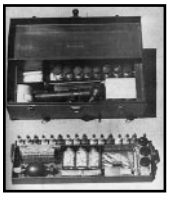


The kit consisted of a sampling pump, bottles of reagents, and detector tubes, all held in a small case that weighed about two pounds. A flashlight was added for night detection. The detection process involved pumping contaminated air into the detector tubes which held silica gel as an absorbent. Color changes indicated the presence of specific chemical warfare agents. The kit could detect small amounts of 11 different chemical agents. It was simple to use and did not require a chemist to make the tests. The Navy standardized a similar kit designated the Mark I Vapor Detector Kit. Although it was noted that "If active gas warfare had been initiated these kits would have provided the basic detecting medium for practically all units," it was also discovered that the M9 Kits did not detect field concentrations of Hydrogen Cyanide (AC) and any of the nerve agents. The M9 Kit was obsoleted in 1954 and the remaining stockpile converted to M9A2 Kits.[8]

M9A1 Chemical Agent Detector Kit

The M9A1 (E13) Chemical Agent Detector Kit was standardized in 1947. The primary difference was the addition of detector tubes for Hydrogen Cyanide (AC) in place of the nitrogen mustard tubes since the nitrogen mustards could be detected by other tubes. The M9A1 Kit was obsoleted in 1952 when the M9A2 Kit replaced it.

M10 Chemical Agent Analyser Kit



During the war, there was a need for a kit for collecting more complete data and samples of agent in the field by chemical laboratory units than was possible with the smaller M9 Detector Kit. At the same time, there was a requirement for a small compact laboratory that could be used by technical intelligence teams and that could be carried in a standard cargo truck. These duel requirements were partially met by the standardization of the M10 (E10) Chemical Agent Analyser Kit in 1945 for use with M3 Mobile Laboratory. The kit was designed for use by a technician trained in chemistry and therefore was not issued to field troops. It could detect most chemical warfare agents except nerve agents, by using detector tubes, detector papers, and detector solutions. It came in a metal box that weighed 26 pounds. The M10 Kit was obsoleted in 1952 when the M10A1 Kit replaced it.[9]

M11 Smoke Identification Kit

The need for a high quality smoke identification kit for use with M3 Mobile Laboratory resulted in the standardization of the M11 (E11) Smoke Identification Kit in 1945. Similar to the M10 Kit, it was designed for use by chemical technicians or other specially trained personnel. The kit could identify most toxic

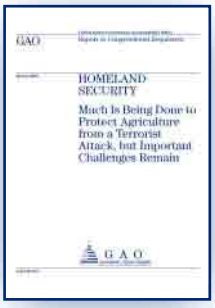
Continued pg. 14

CBIAC New Resources *cont.*

CB-030898
U.S. Department of Homeland Security
7th and D Street
Washington, D.C. 20258
Phone: 1-800-368-6498
http://www.dhs.org

GAO. **Homeland Security—Much is Being Done to Protect Agriculture from a Terrorist Attack, but Important Challenges Remain.** GAO-05-214. Washington, D.C.: Government Accountability Office (GAO), 2005.
http://www.gao.gov/new.items/d05214.pdf

"Protecting agriculture is…critically important to the well being of Americans and the U.S. economy. While the United States has never experienced a terrorist attack against agriculture, this important industry is vulnerable for a variety of reasons, including the relative ease with which livestock and crop diseases could be obtained and disseminated.
Many of these diseases are endemic in other parts of the world and can be extracted from common materials, such as soil. Farms in general are easily accessible because they are located in rural areas and have minimal security, especially crop farms." *(Letter to Congressional requesters)*



CB-019971
GAO
441 G St., NW
Washington, D.C. 20548
Phone: (202) 512-6000 Fax: (202) 512-6061

Working Group on Bioterrorism Preparedness, the Century Foundation. **Breathing Easier? Report of the Century Foundation Working Group on Bioterrorism Preparedness.** New York: Century Foundation Press, 2004.
http://www.tcf.org/Publications/HomelandSecurity/breathingeasier.pdf

The anthrax mailings of late 2001 were a landmark event in the history of the U.S. Public health system. They revealed serious flaws in the system and its inability to cope with bioterrorism. After the anthrax attacks Congress enacted legislation and appropriated billions of dollars to upgrade the public health system and enhance its ability to cope with a large scale bioterrorism event. This report examines how states, cities and counties are using this money, how effectively they are using it and how this stepped up biodefense funding is affecting the overall mission and structure of the public health system in the U.S.

CB-031686
The Century Foundation
41 East 70th Street
New York, NY 10021
Phone: (212) 535-4441 Fax: (212) 535-7534

Chemical and Biological Defense
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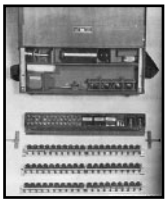
The focal point for DoD Chemical and Biological (CB) Defense scientific and technical information

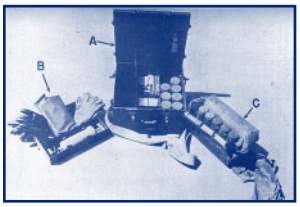
History of Detectors *cont.*



smokes and other non-toxic smokes. The complete kit came in a metal box and weighed 24 pounds. Although the kit met its requirement, there was little concern for identifying non-lethal smokes in the field and the M11 Kit was obsoleted in 1956.[10]

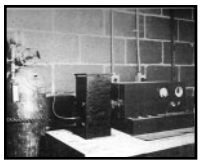
M12 Agent Sampling Kit

The M12 (E12) Agent Sampling Kit was standardized in 1945 for use with the M3 Mobile Chemical Laboratory. Although it was designed only to collect liquid or solid agent samples of persistent agents in the field, it also contained detector paper for more immediate identification. The sampling bottles and storage containers were stored in a metal box. The Kit was designed only for use by technically trained operators. The M34 Refill Kit for the M19 CBR Kit replaced the M12 Kit. The M12 Kit was obsoleted in 1967.[11]



Halide Photometer Automatic Chemical Alarm

During World War II, the concept of an automatic chemical agent alarm was continuously studied, but not perfected by the end of the war. The Halide Photometer Alarm was about 30 inches long by 10 inches wide and 12 inches high. It required a hydrogen cylinder also. The detector used a Beilstein lamp attached to a photoelectric cell. When halides burned in the flame of the lamp, copper halide was formed and burned a green color. By using colored filters, a photoelectric cell was sensitized to the green color. Upon activation, the cell closed a circuit that set off an alarm. Edgewood Arsenal developed three test units and installed them in the Mustard Agent Plant at Rocky Mountain Arsenal. One unit activated immediately due to contamination already present. The only way to continue with the test was to decontaminate the portions of the plant that were contaminated. The primary problem with the concept was that the detector lacked sensitivity and selectivity between chemical agents. Due to these problems, the unit was never standardized.[12]



Nerve Agent Automatic Alarm Requirement

The Germans had developed nerve agents during World War II and the United States called them "G-agents." The requirement for an automatic nerve agent alarm was formalized in 1947. The objective was to develop an automatic detection system that detected the odorless and colorless nerve agents. After detection, the system then was required to sound an alarm. Although several projects were initiated immediately, it would take another decade to actually standardize an automatic nerve agent alarm.[13]

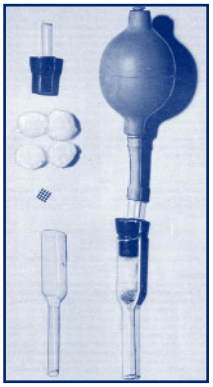
Biological Agent Detection

Biological Agent Field Detection Capability

The need for a biological agent detector was not apparent to the Army prior to World War II. Only when rumors of the extensive Japanese and German biological warfare programs became apparent did the United States start their own biological weapons program. The field detection of biological agents, however, was not feasible with the current technology. Unlike chemical agents, biological agents were normally not detectable by any of the five senses. This created a tremendous challenge to develop and standardize a field detection capability. This deficiency would not be met for 50 years. Until then, the Army had to rely on field sampling and laboratory identification.

Smears and Cultures

The laboratory use of swabs to contaminate agar plates proved more convenient and quicker than animal inoculation in some cases. However, prior knowledge of the agent was needed to use the proper solution on the swab and the proper agar medium. Researchers also used smears on slides for microscopic examination.[14]



Field Sampling

Although the Chemical Warfare Service developed several sampling procedures for biological agents during the war, the difference in the various biological agents prevented standardization of any one procedure. The Cotton Impinger was the most useful for collecting air samples. It pulled air through a cotton wool filter that collected suspended organisms.

The limits of field sampling without a detection capability were clearly demonstrated during a major biological warfare scare during the war. Starting in December 1944, the Japanese began sending unmanned balloons holding bombs over the United States. The initial concern was that they held biological agents. The Chemical Warfare Service dispatched specialized teams of biological warfare officers to sample the bombs' fillings. Without a field detection capability, these samples had to be sent to Fort Detrick, Maryland, for analysis. This created a significant delay in identification. Luckily, all the samples were negative for biological agent.[15]

Animal Detectors

The use of animals to detect biological agents was one early method used in most laboratories and plants. Susceptible animals such as the guinea pig, rat, or rabbit were inoculated with samples of the suspected agent and then watched for reaction. This concept was actually used as an early field detector in Hawaii shortly after Pearl Harbor. Fear of a follow-up

Continued pg. 19

2006 CBIAC Products

Critical Reviews

Code/Price	Title/Classification
CR-05-15 $10.00	**Technical Report on the Portable Airlock for Non-Procedural Entry or Exit of CSEPP Pressurized Shelters** Approved for Public Release; Distribution Unlimited
CR-05-14 $10.00	**Dispatcher's Guide for WMD Incidents** Approved for Public Release; Distribution Unlimited
CR-05-13 $25.00	**Biological Incident Operations: A Guide for Law Enforcement** Approved for Public Release; Distribution Unlimited
CR-04-12 $2.00	**Emergency Decontamination Corridor and Ladder Pipe Decontamination Systems** Approved for Public Release; Distribution Unlimited
CR-04-11 $2.00	**Quick Response Guidelines for a Suspected Chem/Bio Attack** Approved for Public Release; Distribution Unlimited
CR-04-10 $25.00	**The Psychological Effects of Weapons of Mass Destruction (WMD) on Military and Civilian Personnel** U.S. Government Agencies and their Contractors Only; Unclassified
CR-03-09 $10.00	**Law Enforcement Officers Guide for Responding to Chemical Terrorist Incidents** Approved for Public Release; Distribution Unlimited
CR-03-08 $10.00	**Medical Aspects of Biological Agents** Approved for Public Release; Distribution Unlimited
CR-03-07 $25.00	**WMD Reference CDs** Approved for Public Release; Distribution Unlimited
CR-02-05 $25.00	**Chemical Agent Simulants and Associated Technologies** U.S. Government Agencies Only; Unclassified
CR-01-04 $45.00	**Joint Service Chemical and Biological Science and Technology Base Program in Decontamination** U.S. Government Agencies and their Contractors Only; Unclassified
CR-01-03 $25.00	**Air Purification Technologies** U.S. Government Agencies and their Contractors Only; Unclassified
CR-00-02 $25.00	**Critical Review on Anti-Crop Biological Agents and Associated Technologies** U.S. Government Agencies and their Contractors Only; Unclassified
CR-00-01 $75.00	**Chemical Biological/Smoke Modeling and Simulation (M&S) Newsletter Compilation** U.S. Government Agencies and their M&S Contractors Only; Unclassified
CR-99-10 $60.00	**Wide Area Decontamination: CB Decontamination Technologies, Equipment and Projects** Approved for Public Release; Distribution Unlimited
CR-99-09 $20.00	**Determination of Optimum Sorbent Material for Collection and Air Desorption of Chemical Warfare Agents** Approved for Public Release; Distribution Unlimited
CR-98-08 $25.00	**Demilitarization Technologies for Biological and Toxin Weapons** U.S. Government Agencies Only; Unclassified
CR-98-07 $15.00	**The Year 2000 Millennium Bug: A Chemical and Biological Defense Community Perspective** Approved for Public Release; Distribution Unlimited
CR-98-06 $15.00	**The Emergency Responder's Ability to Detect Chemical Agents** U.S. Government Agencies, their Contractors, State and Local Government Agencies Only; Unclassified

2006 CBIAC Products

Critical Reviews (cont.)

Code/Price	Title/Classification
CR-98-05 $25.00	**Critical Review of Surface Sampling Technologies for Volatilizing Liquid Chemical Agents** Approved for Public Release; Distribution Unlimited
CR-98-04 $25.00	**Critical Review of Non-Lethal Grenade Technologies and Lethality Evaluation Criteria** Approved for Public Release; Distribution Unlimited
CR-96-03 $60.00	**Critical Review of Sources of Chemical and Physical Properties Data for Militarily Significant Compounds** Approved for Public Release; Distribution Unlimited
CR-95-02 $20.00	**A Critical Review of Sources of Spectral Data for Militarily Significant Compounds** Approved for Public Release; Distribution Unlimited
CR-95-01 $20.00	**A Critical Review of Nuclear, Biological and Chemical Contamination Survivability (NBCCS)** Approved for Public Release; Distribution Unlimited

Databases, Databooks, Handbooks, and Others

Code/Price	Title/Classification
DBS-02-01 $125.00	**Chemical Sources Database and Databook: Toxicological Values for Catastrophic Release of Toxic Industrial Chemicals (Set)** U.S. DoD Agencies Only; Unclassified
DB-02-01 $75.00	**Chemical Sources Database: Toxicological Values for Catastrophic Release of Toxic Industrial Chemicals** U.S. DoD Agencies Only; Unclassified
DBK-02-01 $75.00	**Chemical Sources Databook: Toxicological Values for Catastrophic Release of Toxic Industrial Chemicals** U.S. DoD Agencies Only; Unclassified
DBK-99-02 $125.00	**Susceptibility of Aircraft Materials to Chemical Warfare Agents (Reprint)** U.S. Government Agencies and their Contractors; Unclassified
DB-97-01 $60.00	**Physiological and Psychological Effects of the Nuclear, Biological, and Chemical Environment and Sustained Operations on Systems in Combat (P^2NBC^2) Database** U.S. DoD Agencies and their Contractors; Unclassified
DBK-95-01 $10.00	**Chemical Defense Materials Databook** U.S. DoD Agencies and their Contractors; Export Controlled; Unclassified
HB-04-03 $175.00	**BACWORTH Encyclopedia Version 6.2a** U.S. Government Agencies Only; Export Controlled; For Official Use Only
HB-99-03 $75.00	**CB Terminology Handbook** Approved for Public Release; Distribution Unlimited
HBS-98-03 $200.00	**Worldwide Chemical Detection Equipment Handbook and Worldwide NBC Mask Handbook (Set of Both Handbooks)** Approved for Public Release; Distribution Unlimited
HB-95-02 $150.00	**Worldwide Chemical Detection Equipment Handbook** Approved for Public Release; Distribution Unlimited
HB-92-01 $75.00	**Worldwide NBC Mask Handbook** Approved for Public Release; Distribution Unlimited
SIMKIT-05-01 $650.00	**CBR Simulant Training Kit** Federal, State, and Local Government Agencies Only—Further Distribution Only as Authorized by TSWG; Unclassified
SIMKIT-96-01 $150.00	**Chemical Warfare Agent Simulant Training Kit** Approved for Public Release; Distribution Unlimited

2006 CBIAC Products

State-of-the-Art Reports

Code/Price	Title/Classification
SOAR-05-14 $25.00	**Chemical and Biological Medical Treatment Symposium - V** Approved for Public Release; Distribution Unlimited
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History of Detectors *cont.*

Japanese biological attack led the Chemical Warfare Service to put small fish in aquariums at key locations. Daily drinking water samples were put in the aquariums to test for poisons. According to a 1944 biological warfare emergency response plan, "The presence of dead fish in the aquarium calls for immediate investigation." The use of animals, however, was only suitable for certain agents and normally did not provide an immediate response. This limited their use to primarily research laboratories.[16]

Warning Systems

M1 Gas Alarm

During World War II, the Army tested a number of percussion-type gas alarms. They included triangles, tubes of various materials, cylinders, 75mm and 105mm shells casings, and drums. The metal hollow tube in a Ushape proved the most satisfactory. The final result was the M1 Gas Alarm, standardized in 1942. It consisted of a steel tube about 1-1/2 inches in diameter and about 15 inches long. A striker, consisting of a steel tube with a wood handle, was used to hit the tube. The alarm was obsoleted in 1951.[17]

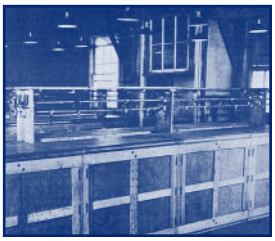
M1 Civilian (Ratchet Type) Gas Alarm

This alarm was intended for civilian air raid wardens in case of a chemical attack. The ratchet was 14-1/2 inches long by 3 inches and was made of maple wood with a white birch handle. The alarm was assigned an "M" number in the Army system, but was never standardized due to a change in policy not to standardize civilian type articles. The civilian ratchet alarm remained an experimental item in the Army and was obsoleted in 1946.[18]

NBC Reconnaissance

M2 Base Chemical Laboratory

During World War II, the concept of taking a chemical laboratory into the field led to the standardization of the M2 Base Chemical Laboratory in 1944. The purpose of the laboratory was to equip Chemical Laboratory Companies sent overseas to permit examination, evaluation, and identification of materiel and equipment pertinent to chemical warfare. The equipment was packed in 65 containers and weighed over 20,000 pounds. The packaging crates were designed to create laboratory benches. It was intended for semi-permanent installation. Only 12 of the M2 Laboratories were procured during the war. The M2 Laboratory was obsoleted in 1986.[19]

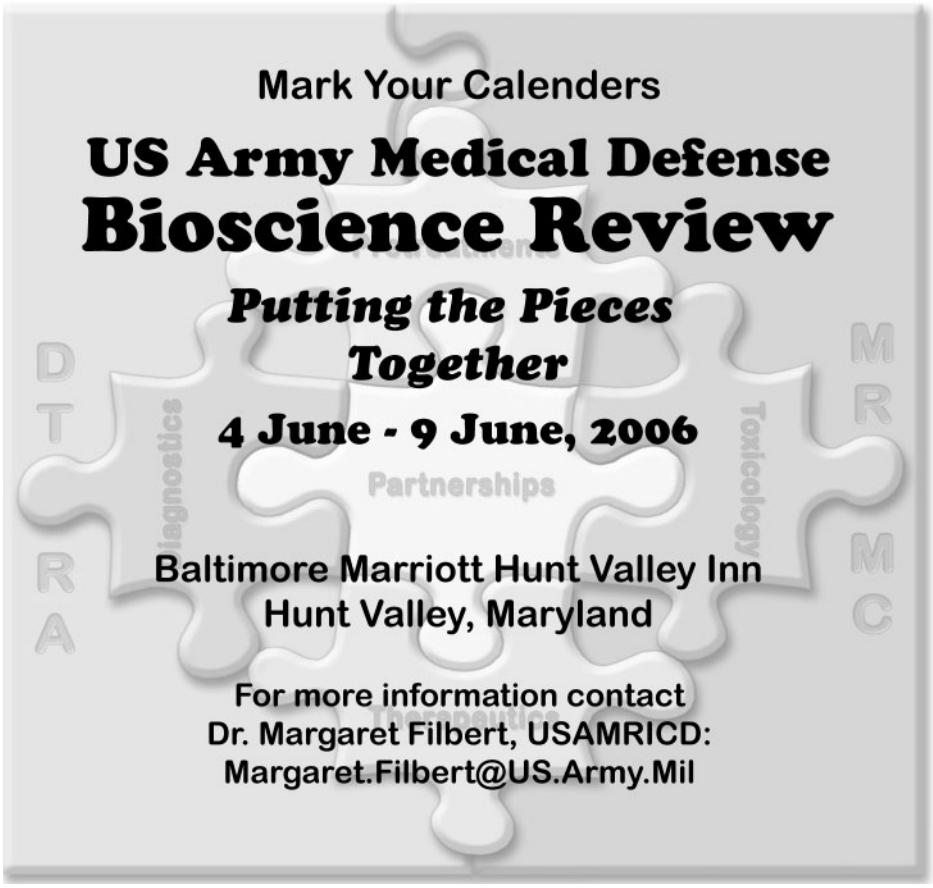


M3 Mobile Chemical Laboratory

In attempt to create a more mobile laboratory, the Chemical Warfare Service standardized the M3 (E1) Mobile Chemical Laboratory in 1944. This unit, when packed, consisted of 16 crates and weighed about 3,200 pounds. It could be carried in a standard truck, but still required unloading and setup before beginning laboratory operations. The reduced size limited its chemical analysis capability, but it was intended to operate in combat zones and refer more complicated analysis back to the nearest M2 Base Chemical Laboratory. The M2A1 Laboratory and the M19 CBR Sampling and Analyzing Kit replaced the M3 Laboratory during the 1960's. The M3 Laboratory was obsoleted in 1965.[20]

Notes

[1] Falkof and Gehauf, 5; Chemical Warfare Technical Committee Minutes (CWTC) Item 1403, 2 Aug 45.
[2] Falkof and Gehauf, 3-4; CWTC Item 1679, 15 Oct 46; Training Regulation 155-5, *Defense Against Chemical Warfare*, 15 Jul 26, 11.
[3] CWTC Item 945, 17 Mar 44; CWTC Item 1666, 12 Dec 46; Chemical Warfare Service, *Report of Production, 1 January 1940 through 31 December 1945*, 20; Sloan, 13-31.
[4] Falkof and Gehauf, 99; Bernard Gehauf, *Chemical Agent Detector* (TDMR 273), 17 Mar 1941, 1-2; CWTC Item 456, 6 Feb 42; CWTC Item 783, 29 Jun 43; CWTC Item 1403, 2 Aug 45; *Report of Production*, 19; Carl Niemann, "Detection of Certain Chemical Warfare Agents," *Chemical Warfare Agents, and Related Chemical Problems*, Parts III VI, 581.
[5] Falkof and Gehauf, 99; CWTC Item 296, 18 Jan 41; CWTC Item 456, 6 Feb 42; CWTC Item 736, 11 Jun 43; Chemical Corps Technical Committee (CCTC) Minutes Item 3188, 17 May 56; *Report of Production*, 24; Technical Manual (TM) 3-290, *Individual Protective and Detection Equipment*, September 1953, 60-61.
[6] Falkof and Gehauf, 38-39; CWTC Item 456, 6 Feb 42; .CCTC Item 2818, 8 Apr 54; Army Materiel Command Technical Committee (AMCTC) Minutes Item 1647, 1 Nov 63; *Report of Production*, 24; TM 3-290, 62-63.
[7] CWTC Item 456, 6 Feb 42; .CCTC Item 1954, 11 Jan 49; AMCTC Item 3599, 22 Jun 65; *Report of Production*, 12; TM 3-290, 58-59.
[8] CWTC Item 736, 11 Jun 43; CWTC Item 783, 29 Jun 43; CCTC Item 1773, 28 Jul 47; CCTC Item 2480, 1 May 52; CCTC Item 2806, 12 Feb 54; AMCTC Item 3598, 23 Jun 65; *Report of Production*, 18.
[9] Falkof and Gehauf, 78-79, 102, 105; CWTC Item 1337, 24 May 45; CCTC Item 2542, 16 Aug 52.
[10] Falkof and Gehauf, 79, 85, and 105; CWTC Item 1337, 24 May 45; CCTC Item 3231, 15 Aug 56.
[11] Falkof and Gehauf, 85, 93, 107; CWTC Item 1337, 24 May 45; AMCTC Item 5440, 8 Jun 67; *Report of Production*, 18.
[12] Falkof and Gehauf, 31; H. Scherr, *Halide Photometer Gas Detector*, TDMR 1312, 4 Apr 1947.
[13] CCTC Item 3527, 25 Jun 1958.
[14] Rexmond C. Cochrane, *Biological Warfare Research in the United States*, 1947, 159-162.
[15] *Research and Development in the Special Projects Division*, 22 Sep 1945, 8 and 19-20; U.S. Army Forces Middle Pacific, *History of Chemical Section*, 1945, Annex II; *Instruction for Defense Against Biological Attack*, CWS TNG Memo SPCYV, 10 Jan 45, 14.
[16] Cochrane, Part I: 25, Part II: 159-162; *History of Chemical Section*, Annex II.
[17] CWTC Item 553, 4 Aug 42; CCTC Item 2283, 28 Feb 51; *Report of Production*, 1.
[18] CWTC Item 1679, 15 Oct 46.
[19] CWTC Item 945, 17 Mar 44; CWTC Item 1960, 1 Feb 49; AMCTC Item 1643, 7 Oct 63; *Report of Production*, 20.
[20] CWTC Item 1120, 31 Aug 44; CWTC Item 1960, 1 Feb 49; AMCTC Item 3400, 22 Apr 65; *Report of Production*, 20.



The Bioscience Review

For the past two decades, the United States Army Medical Research Institute of Chemical Defense (USAMRICD) has sponsored a biennial scientific conference, the **Medical Defense Bioscience Review**. The Bioscience Reviews have traditionally been an excellent forum to discuss the science of medical chemical defense. As an avenue for advancing and communicating knowledge among the participants, the conference challenges attendees to explore and develop better countermeasures for the best possible medical protection against chemical threats. The 15th Bioscience Review will be held at the Marriott's Hunt Valley Inn and Conference Center in Hunt Valley, Maryland, on 4-9 June 2006. The conference theme is "Science and Technology Capabilities for Medical Chemical Defense." Dr. Bruno Papirmeister, a pioneer in sulfur mustard research will deliver the Honorary Clarence A. Broomfield Lecture, and Dr. James S. Ketchum, a former military psychiatrist involved with human volunteer studies of the early 1960s, will be the speaker at this year's conference banquet.

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