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THE ENGINEERING EDGE

EDGEWOOD CHEMICAL BIOLOGICAL CENTER



ECBC ENGINEERING
Design→Build→Test→Support

CENTERSPREAD - The *Engineering Edge* remembers 9/11.

Engineering Packaging Branch's Dean Hansen Patents Innovative, Military Packing Container

Engineering Packaging Branch's Dean Hansen is thinking outside of the box – literally. After three years in the making, Hansen has successfully patented a revolutionary, reusable military packing box that will allow for increased durability, longevity and customization to remain concurrent with item design.

"If I wasn't looking for a cheaper way of doing things, this idea could have gone right by me," Hansen said. "Some of the success of this invention has come by way of accident, but mostly because our team was searching for a more cost-effective packing solution."

Almost three years ago, Hansen was asked to attend a packaging system test at the **(Continues on page 7)**



ABOVE: Dean Hansen poses with his newly awarded U.S. patent and the reusable military containers for which he earned the patent.



ABOVE: ECBC industrial designers, animators, graphic artists and computer scientists created concepts for the U.S. Army Science, Technology, Engineering and Mathematics Innovation Asset.

Advanced Design and Manufacturing Conceptual Modeling Team Works with U.S. Army to Design Futuristic Recruitment Vehicle

Engineering's Advanced Design and Manufacturing Division (ADM) Conceptual Modeling and Animation Branch (CMAB) is supporting the U.S. Army to recruit science, math and engineering talent through an innovative, high-tech project that simulates the U.S. Army in the year 2032.

CMAB conceptualized and designed the interactive recruitment project for the U.S. Army's Science, Technology, Engineering and Mathematics (STEM) Innovation Asset, enlisting the work of several different skills including industrial designers, graphic artists, animators, computer scientists and programmers. The rest of the project was carried out by various branches of ADM. **(Continues on page 3)**

Engineering Advanced Technology Demonstration Branch's HaMMER Team Completes Second Early User Assessment, Demonstrates New Hazard Mitigation Technologies

The Advanced Technology Demonstration (ATD) Branch within the Engineering Directorate supports technical, acquisition, and operational communities by demonstrating new technologies. In simple terms, an ATD can show that the right technologies will be pursued to accomplish the right goals.

In July, the ATD Branch's Hazard Mitigation, Materiel and Equipment Restoration (HaMMER) Team wrapped up the second of two early user assessments (EUA), aimed at identifying Warfighter-desired hardware and applicator configurations to better support HaMMER technologies that will be demonstrated in the FY12 HaMMER Operational Demonstration. **(Continues on page 3)**

To access the electronic version of this newsletter visit:
<http://www.ecbc.army.mil/news/ENG/>



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This newsletter was published through the Balanced Scorecard.

For article suggestions, questions or comments please contact Ed Bowen at edward.c.bowen8.civ@mail.mil.



Security Tip of the Month: Facsimile (Fax) Machine Security

When sending or receiving information via a fax machine, it is important to ensure that security controls and best practices are implemented to protect the data. Be sure that you follow some of these best practice guidelines: 1.) Limit confidential information contained in the fax to the minimum necessary to accomplish the purpose of the communication. 2.) Take reasonable precautions to ensure that the intended recipient is either available to receive the fax as it arrives or has exclusive access to the transmitted document on the fax machine. 3.) If there is any reason to question the accuracy of a fax number, contact the recipient to confirm the number prior to faxing.



HR Tip of the Month: Updating Education in DCPDS

If you need to update your education in Defense Civilian Personnel Data System, please have your college mail a copy of your official transcript to Sabre Harper or Debbi Yonce and we will coordinate the update with the Civilian Personnel Advisory Center. We cannot accept hand-delivered copies. ⚙️

For more information about your HR policies, please contact Engineering Workforce Management Representative **Sabre Harper** at ext. **5-2722**.



Awareness: Labor Day

This year Labor Day is Monday, September 5.

Labor Day is a federal holiday to celebrate the economic and social achievements of workers. Labor Day began during the Labor Rights Movement of the late 19th Century. The Central Labor Union of New York organized the first Labor Day in 1878, and following the violence of the Pullman Railroad strikes on 1894, Congress made Labor Day an official holiday.

Celebrated on the first Monday of September, Labor Day signifies the end of summer, the beginning of the regular football season and for some fashion conscious people, the last day it is appropriate to wear white. Whether you're taking a final lap at the community pool or packing away that pair of white shorts, have a safe and relaxing day off. ⚙️

Safety Tip of the Month: Home Safety

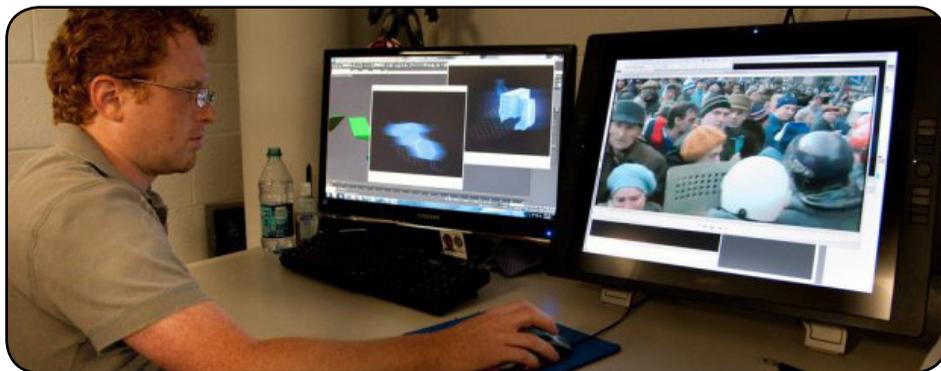
There are many causes of home injuries. Some arise from yard work, and some arise from do-it-yourself projects, lifting heavy objects or working on motor vehicles, among others. The Home Safety Council report listed falls as the number one cause of home injuries. Elderly people 70 years or older are most at risk for fatal falls. However, anyone is susceptible to slips and falls, which accounted for 5.1 million home injuries annually, according to the council. Chief Warrant Officer 4 Joseph Reese, Senior Maintenance Officer, Ground Task Force, U.S. Army Combat Readiness/Safety Center advises people to put things in their proper place and not just toss them on the floor where they can cause trips. He also suggested placing baby gates at the top and bottom of stairs to protect children and placing bath mats on wet floors and keeping floors dry. Reese also advised the use of nightlights to illuminate dark areas of the home at night. ⚙️

ECBC Engineering's Standards Development Support Team Collaborates with Government Agencies, Industry Professionals to Draft Standardizations for Chemical Detectors

In an effort to enhance First Responder capabilities and establish a program which provides certified equipment to fire and law enforcement, Engineering's Standards Development Team (SDT) is collaborating with government agencies and industry professionals to draft performance specifications and test methods for chemical detection equipment.

"Emergency First Responders must arrive prepared to a scene and ready to take on any scenario using the necessary instruments. Most responders have several different types of chemical detectors and monitors for use in various response scenarios. Current chemical detectors sold on the market are not independently certified outside of vendors' claims," said SDT Branch Chief Greg Mrozinski. The goal is to have certified equipment in the hands of the First Responders who are using U.S. Department of Homeland Security (DHS) grant money to purchase the items, similar to what currently exists with respirators and protective suits. Engineering's SDT works under an interagency agreement with the DHS Science and Technology Directorate to establish certification standards for the equipment that First Responders use.

Two years ago, SDT, DHS Science and Technology Directorate, DHS Office of Health Affairs and
(Continues on page 6)



ABOVE: ECBC industrial designer/concept artist Greg Thompson works on videos and graphics for the U.S. Army STEM Innovation Asset.

ADM Conceptual Modeling Team Works with U.S. Army to Design Futuristic Recruitment Vehicle

(Continued from page 1) "We have 20 people working on the project," said ADM's Chief of CMAB Jeff Warwick. "The order came from the Research, Development and Engineering Command corporate communications. Since we do concept work, the request came straight to us."

The team created a modified tractor-trailer equipped with high-definition TVs and touchscreen computers, providing prospective U.S. Army scientists and engineers with a hands-on crisis simulation. The three-room vehicle begins with a Scenario Room, where the students watch a Hollywood-produced trailer. The short film is a series of fictional news segments that introduces students to the problem at hand—Hands of Liberation. The fictional antagonist is a growing terrorist organization that has attacked a chemical plant in Eastern Europe. In the second room, the students are tasked with the mission to design an innovative technological platform to save lives. Finally, in the third room, students access interactive graphic programs to design a solution to the problem. They are given the option of designing an autonomous ground system, a robotics system, an unmanned aerial vehicle or a future soldier.

The story doesn't end there. To read more about the work ADM's CMAB is doing to support the U.S. Army STEM Innovation Asset, visit ECBC's blog at:
<http://edgewoodchembio.blogspot.com/> 

Engineering ATD HaMMER Team Completes Second Early User Assessment **(Continued from page 1)**

EAU2 was held from July 18-22 in Schofield Barracks, Hawaii, with approximately 33 Warfighters supporting the assessment. Participants included Warfighters from the following organizations: 8th Theater Sustainment Command; 25th Infantry Division Chemical Section; the 71st Chemical Company of Schofield Barracks, Hawaii; the U.S. Air Force 15th Wing of Hickman Air Force Base, Hawaii; the U.S. Marines, III Marine Expeditionary Forces (MEF); and the Marine Corps Base of Kaneohe Bay.

The HaMMER ATD is one of two large efforts within the ATD Branch. For both of these efforts, the ATD Branch provides the Technical Manager. The HaMMER ATD is also supported by two other managers that work alongside the Technical Manager. The HaMMER Operational Manager from the U.S. Army, Pacific, represents the operational community, while the HaMMER Transition Manager from Joint Project Manager-Protection (JPM-P) represents the acquisition community.

The current Department of Defense (DoD) policy objective is to eliminate hazards associated with chemical and biological (CB) contaminants from all surfaces in all environmental conditions while not creating additional surface damage. However, this universal approach has resulted in decontamination doctrine and equipment that requires substantial Warfighter labor, logistics burden and waste stream management without reducing hazards to levels that enable useful outcomes.

"The overall objective of the HaMMER ATD is to operationally demonstrate new hazard mitigation technologies, allowing the Warfighter, represented by the Operational Manager, to determine if these technologies have military utility," said HaMMER ATD Technical Manager Shawn Funk. "The HaMMER ATD will be the first time that a family of systems, designed to work together for hazard mitigation, has ever been demonstrated, both in the laboratory and in the field. **(Continues on page 7)**



HaMMER ATD includes three technology areas: 1.) agent disclosure/decontamination assurance, 2.) decontaminants and 3.) coatings/strippables. Pictured here: strippable coatings applied prior to contamination, easily peeling away once contaminated without damaging the original surface.

THE ENGINEERING EDGE REMEMBERS 9/11...



This year marks the 10th anniversary of the 9/11 terrorist attacks.

The 10-year anniversary of the 9/11 attacks on the U.S. will see many special events and programming. Here are just a few of the commemorative happenings that you can look for:

National Moment of Remembrance on Sept. 11, 2011, at 1 p.m.

<http://www.facebook.com/pages/National-Moment-of-Remembrance>

9/11 Memorial of Maryland Dedication: Sunday, Sept. 11, at 3:00 p.m., World Trade Center Plaza 401 East Pratt Street Baltimore, MD

<http://www.9-11healingandremembrance.org/ovc/Events/Default.aspx>

9/11: THE DAYS AFTER on the History Channel: Premieres Saturday, Sept. 10 at 9 p.m.

TIMELINE OF EVENTS

9/11/2001 -
0846: American
Airlines Flight
11 crashes into
the World Trade
Center north tower
between the 93rd
and 99th floors.

9/11/2001 -
0937: American
Airlines Flight 77
crashes into the
Pentagon.

09/11/2001-
1003: United
Airlines Flight 93
crashes into a field
in Shanksville,
Penn.

9/18/2001 and
10/9/2001: Anthrax
attacks kill 5 and
infect 17 others by
anthrax spores in
New York, N.Y., Boca
Raton, Fla., and
Washington, D.C. in
the United States.

9/11/2001 -
0759: Mohamed
Atta boards
American Airlines
Flight 11 which,
under his control
will crash into
the World Trade
Center.

9/11.2001 -
0818: American
Airlines Flight
11 is taken over
by Mohamed
Atta and other
hijackers.

9/11/2001 -
0911: United
Airlines Flight
175 crashes into
the World Trade
Center south tower
between the 77th
and 85th floors.

9/11/2001 -
0959: South tower
of World Trade
Center collapses.

9/11/2001 -
1028: North tower
of World Trade
Center collapses.

ECBC MEETS THE URGENT NEEDS THAT EMERGE AFTER 9/11

Ongoing support to the Secret Service: ECBC provided special chemical and biological facility support to the U.S. Secret Service (USSS)

The Engineering Directorate was the project manager for the program, handling day-to-day operations and overseeing contractors on the project. This project also enlisted the help of both the Research & Technology (R&T) Directorate as well as the Directorate of Program Integration (DPI). R&T provided testing support and technical experts, while DPI extensively monitored lab, filtration and environmental support.

The program has recently been moved to Washington, D.C. however the USSS still reaches out to ECBC-DPI for ongoing analytical support. The USSS is grateful to ECBC for the role we played in developing and prototyping this effort.

M31A2 Biological Integration Detection System (BIDS): Initially fielded in 2003

This was the third generation of the BIDS that was originally fielded in 1995. The first generation of the BIDS combined a variety of standard laboratory equipment into a military vehicle to provide early warning and identification capabilities in response to a large area biological warfare attack. The Non-Developmental item BIDS was a manual system and served as a predecessor for the semi-automated P31 M32A2 BIDS as well as the fully automated M31A2 BIDS. The acquisition program for this was initiated in July 1996 by the Joint Product Manager for the Joint Biological Detection System.





10/16/2001 - Operation Active Endeavour officially begins.

1/24/2003: Governor Tom Ridge sworn in as Secretary of new Department of Homeland Security.

3/20/2003 - The Iraq War begins. President George W. Bush refers to it as "the central front in the War on Terror."



10/7/2001 - The War in Afghanistan begins.

1/3/2003 to 4/12/2003- Anti-war groups across the world organized public protests against war with Iraq. About 36 million people across the globe took part in almost 3,000 protests

2/5/2003 - Colin Powell addressed a plenary session of the United Nations Security Council, stating that Saddam Hussein was working to obtain key components to produce nuclear weapons.

12/13/2003 - Saddam Hussein is found and captured by U.S. forces.



Biological Sampling Kit (BiSKit): A portable, disposable device that will permit inspectors and forensic evidence specialists to collect biological contaminants from surfaces.

The BiSKit allows Warfighters and First Responders to efficiently test environmental samples from contaminated sites. The device can swab surfaces to collect bacteria, viruses and toxins for analysis and other purposes. The original design of the BiSKit was developed by Peter Emanuel of the Research and Technology Directorate, and Engineering's Advanced Design and Manufacturing Division carried out the actual production. BiSKit received the 2005 Award for Excellence in Technology Transfer.

Joint Biological Point Detection System (JBPDS): A system that can automatically detect and identify biological warfare agents from far distances.

In response to the attacks of September 11, the Department of Defense had an immediate need for an automated biological point detection capability around the Pentagon Reservation. Engineering's ADM worked with Joint Project Manager for Biological Defense to integrate JBPDSS into eight Homeland Defense trailers that were deployed around the Pentagon within two months. JBPDSS can identify multiple biological agents in less than 15 minutes and have been integrated into ships and tactical vehicles for biological detection capacity.

ECBC Engineering's SDST Collaborates with Government Agencies, Industry Professionals to Draft Standardizations for Chemical Detectors (Continued from page 3)

other groups came together to form the Detection Technology Evaluation and Reporting (DeTER) Program. The DeTER Program will establish a certifying agency and the process by which commercial detectors can be certified.

On August 10, DHS, in conjunction with ASTM International, held a meeting to establish a task group within ASTM Committee E54 on Homeland Security Applications to complete the drafting of two performance standards for chemical vapor detectors. This allows DHS to gain input from government and industry professionals in the final drafting of these standards.

The work items for the two proposed new standards are ASTM WK33681, Specification for Standard for Handheld Chemical Vapor Point Detectors, and ASTM WK33684, Specification for Standard for Stationary Monitoring Chemical Vapor Point Detector. The proposed standards are being developed by Subcommittee E54.01 on chemical, biological, radiological, nuclear and high-yield explosive (CBRNE) Sensors and Detectors.

ASTM International is a globally recognized leader in the development and delivery of international voluntary consensus standards. Today, some 12,000 ASTM standards are used around the world to improve product quality, enhance safety, facilitate market access and trade and build consumer confidence.

ASTM's leadership in international standards development is driven by the contributions of its members: more than 30,000 of the world's top technical experts and business professionals representing 135 countries. ECBC professionals, including SDT, make up a handful of these experts.

"Respiratory and personal protective equipment is already CBRN certified by the National Fire Protection Association and through National Institute for Occupational Safety and Health. However many other types of equipment, like handheld chemical detectors, monitors and decontamination systems/shelters, have no standards for certification, which makes the purchasing difficult for First Responders since DHS wants the equipment to be certified," Mrozinski said.

A certification program for chemical detectors will increase the confidence of First Responders buying that equipment. Additionally, this helps DHS meet its goal of implementing their grant programs to the First Responder community.

"In the normal certification process, manufacturers send their item to an independent, third party testing lab to have it evaluated against established performance requirements using accredited methods," said Detection Team Lead Mary Beth Busch. "Either the device meets the standards or it doesn't. However, for chemical and radiation detectors, there is a broader spectrum of operational requirements that a First Responder must contend with."

Under the DeTER Program and using the ASTM standards, detectors will be tested against the same basic requirements, in addition to specific operational criteria. As Mrozinski noted, a First Responder in Alaska may need a detector that is more environmentally rugged than a First Responder in Maryland. The DeTER Program will allow varying levels of certification.

(Continues on page 8)



Employee Spotlight: A conversation with General Engineer of the Rock Island's Industrial Base (IB) Analysis Team, Shay Macias.

The Engineering Edge sat down with Industrial Base (IB) Analysis Team Engineer Shay Macias to learn more about her role within the ECBC Engineering Directorate and how she has progressed through the Center.

Engineering Edge: What are your current job title and responsibilities?

Shay Macias: I am a general engineer within the IB Analysis Team, and have been since 2007. Some of my major responsibilities within this title are monitoring various types of IB project analyses, formulating methods to solve projects intended for our various customers' requirements and then compiling the content with data and producing it into an easy-to-read format. After that is done, our team sends the compiled reports out to wherever they need to go. ECBC IB is dual-hatted and is an extension of U.S. Army Materiel Command (AMC), so we coordinate Taskers and projects for Headquarters AMC (HQAMC) G-4 Industrial Base Capabilities Division by writing ECBC's input, collecting input from each of the different Research Development and Engineering Command (RDEC) and Life Cycle Management Command (LCMC) groups and compiling them into one consolidated format to return to the HQAMC G-4 IB Capabilities Division. The consolidated format allows whoever reads the reports to be able to compare all the RDECs' and LCMs' responses as one grouping.

EE: How long have you worked for ECBC? What areas of Chemical and Biological defense have you worked in during your time here?

SM: I first came to ECBC in March 2005. I thought that lab work was very interesting. My previous work was with a lab at the University of Iowa, so I felt like my experience there could translate well at ECBC. I started out working in surveillance, supporting the Individual Protection Team, and then I moved to the Information and Technology Solutions Team before working with IB.

EE: What is something you look forward to about your work each day?

SM: I have really enjoyed the variety of projects I get to work on. The assignments never get dull or boring; each requires a different approach for completing. Once I was working on an IB Project about rare earth element materials, which I had absolutely no background on. I enjoyed having the opportunity to do the research and discover how our organization could support the project.

I've really enjoyed all of the projects I have worked on, especially the ones that involve communication with the Edgewood ECBC site. My career experience at ECBC has been a positive one. I'm privileged to work with such wonderful individuals.

EE: What is a little known fact about you?

SM: I take karate lessons regularly. First, my kids got into it, and then my husband and I started taking classes two years ago. At first, learning the different forms was a little bit awkward. With practice though, I've gone from a white belt to a third-degree brown belt since I started. I think karate is a great way to learn good discipline skills. Also, it can be a great method of protection for someone who travels alone. 🌀

Hansen Patents Innovative Military Packing Container

(Continued from page 1)

Aberdeen Test Center. The system being tested was an antiquated technology made up of fiber board, and Hansen believed he could create a cheaper, more resistant packaging technology. He returned to his office, and within a week, designed the aerial deliver box to meet this new requirement.

After experimenting with a variety of box materials, Hansen had what some innovators would call a “light bulb moment.” Two commercial off-the-shelf (COTS) items were the key to this new way of military packing – Polystyrene and truck bed liner.

Since the U.S. Revolutionary War, most military packing boxes have been wooden. Hansen’s innovative box is made out of polystyrene – known to the “layman” as Styrofoam – and sprayed with a polyurethane coating, commonly used as a truck bed liner. The design is not only cheaper than the traditional wooden carriers – it can sustain greater impact and a wider array of environmental conditions.

Originally, Hansen’s bright idea was birthed when he discovered Polystyrene coolers, similar to the disposable ones found in grocery stores, were the basis for shipping bio assays to Warfighters in the Middle East. The packages had less-than-adequate insulation and crushed under a normal pressure load. In order to improve the container’s design, Hansen suggested spraying the box with resilient polyurethane – truck bed liner.

“Our team dove tailed the box’s joints to allow for hot and cold temperature transfer after spraying the Polystyrene container with the truck bed liner,” Hansen said. “Then we subjected it to several rounds of testing – compression testing, manual handling, loose cargo, dropping it from set heights and environmental testing.”

Military packaging is designed to offer protection to items in any environment in the world. Many times there are no available warehouse facilities, and the packaging must provide protection from the environment without any additional storage protection. Unlike commercial distribution chains, items in the military distribution chain are exposed to multiple handlings and modes of transport and can be exposed to shock, vibration, high humidity, rain, snow and temperatures that are not seen by commercial products. Each contract must consider the final destination of the item and contain the requisite packaging requirements.

By using COTS items like polystyrene and truck bed liner, the Packaging Branch has been able to meet urgent need requests for the new boxes, providing direct packaging assistance to the Warfighter within as little as six weeks.

“These new boxes are two-thirds the cost of the wooden boxes and one-third the weight of them,” Hansen said. “The polyurethane truck bed liner is not only readily accessible at a moment’s need, it is incredibly tough, lightweight and environmentally friendly.”

The new containers exceed requirements for current military packaging testing, resisting any deflation at 35,000 lbs. of compressed load strength. Designed to sustain a toss out of a helicopter moving at 110 knots air speed, 100 feet in the air, the boxes can make a jolting landing on land or sea with contents unscathed. Not only are the boxes water and vapor proof, they also float.

“If you were to parachute a box into a drop zone, it would be expensive. You would have to have a large drop zone area to account for wind variations. By the time the box lands, adversaries will have tracked its drop point. With these new boxes, you can get in, drop the item and be gone before the enemy knows what’s happened,” Hansen said.

Hansen’s patent comes to fruition at a bittersweet time for him. At the end of 2011, he will be retiring, closing out his career **(Continues on page 8)**



ABOVE: Hansen’s patent for the new polyurethane lined Styrofoam military packing containers. “The creation of these new boxes all started because our branch was looking for a cheaper option,” Hansen said.

Engineering ATD HaMMER Team Completes Second Early User Assessment

(Continued from page 3)

This information and all associated data from the technical and operational demonstrations will be provided to the acquisition community, represented by the Transition Manager, to help reduce risk for the follow-on acquisition efforts, and to the operational community to help start the foundation for any doctrine change needed to adopt these new technologies and processes. In support of the overall ATD effort, it is the Technical Manager’s responsibility to obtain the right technology products, perform technical demonstrations to identify the capabilities and limitations of these products, and integrate these technology products into systems that best leverage the available capabilities for operational demonstration. **(Continues on page 8)**

BEFORE THE HaMMER ATD’S EARLY USER ASSESSMENT: RISK REDUCTION & OPTIMIZATION PHASES

RISK REDUCTION PHASE - FY2009

This first phase of the HaMMER ATD was called the Risk Reduction Phase, and was executed in FY09. The team executed a huge technology survey that included technology products from Defense Threat Reduction Agency’s current portfolio, technologies from industry, technologies from foreign governments and finally, any non-traditional technologies that could have dual use in the HaMMER application. This process resulted in a manageable technology pool and enabled the HaMMER ATD to enter the Optimization Phase in FY10.

THE OPTIMIZATION PHASE - FY2010-FY2011

The Optimization Phase was a large effort, spanning FY10 to early FY11. The purpose of the phase was to conduct testing of products in the technology pool, and downselect to the final group of technologies that will be technically and operationally tested in HaMMER. The optimization efforts resulted in three distinct system concepts that directly support their force structure: “Mobile on the Move,” “Mobile Support” and “Stationary.”



PHOTO OF THE MONTH

ECBC was awarded with the Federal Women's Program "Activity Most Supportive of FWP Goals" on August 23, recognizing ECBC's Women in Science and Engineering March panel event. ECBC Associate Director of Engineering Bill Klein and ECBC Director of Program Integration Suzanne Milchling

accepted the award on behalf of the Center. PICTURED HERE (from left): Bill Klein, Gary Martin, Col. Orlando Ortiz, Suzanne Milchling pose with the FWP award and Department of Army certificate.

Hansen Patents Innovative Military Packing Container (Continued from page 7)

at Edgewood Chemical Biological Center as a certified military packaging specialist. He notes that while he will miss the work, the last three years have been a fulfilling journey.

"The first shipment of the containers went out in early August, and the technology has just begun to convert to the commercial sector," Hansen said. "Before I retire, I would love to see the entire system of Department of Defense wooden boxes replaced with this new technology." ⚙️

ECBC Engineering's SDST Collaborates with Government Agencies, Industry Professionals to Draft Standardizations for Chemical Detectors (Continued from page 6)

ASTM recognized the baseline requirements for the detectors, which were originally developed in 2007 by Busch. The standard – E2411-07, Standard Specification for Chemical Warfare Vapor Detector, ASTM Committee E54 on Homeland Security Applications, subcommittee E54.01 on CBRNE Sensors and Detectors – was based roughly on existing Department of Defense chemical detection specifications. Other ASTM standards that SDT created include three published standards for chemical personnel decontamination systems - E2542-08 Standard Specification for Portable Water Heaters Used at Personnel Decontamination Stations, E2543 – 08, Standard Specification for Portable Air Heaters Used at Personnel Decontamination Stations and Shelters, E2739 – 10, Standard Specification for Personnel Decontamination System to be Used During a Chemical Event and two work items for handheld and fixed site Toxic Industrial Chemical vapor detectors .

The meeting on August 10 was just a small part of a longer process that could take up to a year. "The next steps following the meeting would be to develop non-chemical testing methods for criteria such as size and weight, display functions and communications and establishing accredited testing labs. Another publication needed would be a guide for the First Responders to assist them in deciding which equipment they need," Mrozinski said.

SDT has been together for almost eight years and is made up of three sub-teams: Detection (led by Mary Beth Busch), Decontamination (led by Mike DeZearn) and Personal Protective Equipment and Respiratory (led by Pete Farlow). ⚙️

Engineering ATD HaMMER Team Completes Second Early User Assessment (Continued from page 7)

The EUAs are being used as one means to ensure that the HaMMER technology products are being integrated into configurations that will be accepted by Warfighters. The first EUA was held in October 2010 and helped the HaMMER team identify force structure, process and technology expectations.

The first EAU laid a foundation for the integration effort and set the stage for detailed design work. Incorporating Warfighter feedback into each major design phase ensures the HaMMER systems will be as useful as possible for the Warfighter.

"We want to provide our Warfighters with technologies and processes that allow them to work smart instead of hard," said Funk. "The HaMMER ATD products will allow them to be able to do so. Some of these products will very likely result in doctrinal change because of the new capabilities they offer.



The HaMMER ATD consists of a family of systems: the stationary suite, the preparatory suite and the mobile support suite. Pictured here is a part of the mobile support suite, a battalion deployed High Mobility Multi-Purpose Wheeled Vehicle with the capability to fully decontaminate a small number of vehicles.

"For EUA2, the team provided full scale, fully functioning prototype applicator systems to Warfighters. The feedback obtained from a hands-on experience is more valid and more insightful than what you could hope to obtain from feedback on PowerPoint slides. We tried to emphasize that this is an opportunity for them to help shape the possible future of decontamination by providing feedback on the HaMMER applicators, technologies and processes."

EUA2 provides a wealth of feedback for the HaMMER Team, enabling the team to refine their designs and Tactics, Techniques and Procedures (TTP) and to enter the Technical Demonstration phase, where each technology is evaluated as it would be used in the field.

"TTPs are very important because they define the sequence in which the technologies will be employed," Funk said.

The HaMMER technical demonstrations will perform laboratory testing using the technologies both individually, and in TTP sequence, to determine the hazard mitigation results of using a family of systems.

THE PATH FORWARD

The HaMMER ATD has gained the attention of Service Combat Developers and has the potential to stimulate both a technological and doctrinal update for Warfighters in the area of hazard mitigation and decontamination. The successful completion of Technical Demonstration in FY11-12 and Operational Demonstration in FY12 will see this through. ⚙️