THE ENGINEERING EDGE

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ECBC ENGINEERING
Design→Build→Test→Support

Through the Smoke: Pyrotechnics and Explosives Branch Creates Safer Grenade for the Warfighter

Edgewood Chemical Biological Center (ECBC) Engineering's Pyrotechnics and Explosives Branch is making smoke grenades safer for the Warfighter. The branch is working to slow the burn rate and increase the yield factor of grenade smoke by revamping the screening smoke composition for the AN-M8 HC Screening Smoke Grenade. The new screening smoke composition, labeled HX Smoke Composition, will be used as a direct replacement fill for the AN-M8 HC Screening Smoke Grenade, which has been placed into restricted use due to environmental and toxicology issues.

"HX Smoke is one of the most effective smoke screening types we have seen to date because it has the highest extinction coefficient of any of the new smoke candidate compositions," said Joe Domanico, Chief of the Pyrotechnics and Explosives Branch. "We wanted to be able to use this kind of smoke because it is the best type for concealment; however, first we had to make it safe for Warfighter use."

"We wanted to be able to use this kind of smoke because it is the best type for concealment; however, first we had to make it safe for Warfighter use," said Joe Domanico, Chief of the Pyrotechnics and Explosives Branch.

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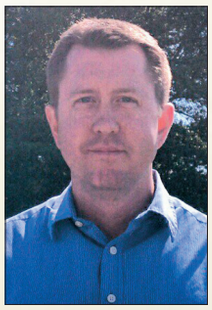
Life in the Fast Lane: ECBC Employees Take on New Roles in the Center

Former Engineering Directorate Executive Officer (XO) Dan Barker and current XO Dr. Carrie Poore, describe their perceptions and takeaways when they made the decision to abandon the comfort of their teams to take on the great unknown by becoming the Director of Engineering's right hand. Barker recently finished his tour as XO in mid-May when Poore began her assignment.

Dan Barker



Engineering Edge (EE): How has your perception of the Directorate changed since participating in the program?

Dan Barker (DB): I gained a much better understanding of the wide variety of work performed within the Directorate. Prior to my XO assignment, I was primarily familiar with respiratory protection programs in Engineering. Once I started working here I realized there was much more. I also had a similar experience across the Center. I was able to gain a nice macro-level perspective of the work performed in all three Directorates. That knowledge has been the biggest shift in perspective for me.

EE: What is the biggest lesson you have learned in this position?
DB: While in the position I learned to not underestimate the importance of marketing and strategic communications. Working in the Engineering Directorate has certainly brought this to the front of my mind. Secondly, I learned that working in a senior leadership role is a big commitment. I don't think everyone understands the time, commitment, and energy that is required of senior leaders. If you aspire to be at the level, you must understand the requirements and character traits needed.

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Dr. Carrie Poore

Engineering Edge (EE): What are you hoping to gain from the XO position?

Dr. Carrie Poore (CP): I have had a lot of different interactions and experiences in all of the jobs I have held here at the Center. I participated in the cohort program, which allowed me to gain a different, larger perspective of the people, the Directorates and the Center as a whole. For one, you meet a lot of people and you get a different reference point from what you have previously been exposed to. You begin to understand more about the decisions being made by senior leaders and why things at your level are happening. Those interactions allowed me to learn so much, both professionally and personally from many individuals. If you open yourself to looking at each person you meet as a mentor in some way, the lessons you can learn are limitless. People say they have a mentor they follow their whole lives. I have many, all with something important to say. By being in this XO position, I am learning even more from leadership as to what and how they think. I am getting first hand examples of how divisions and people are managed in a field in which I am not as familiar. I am extremely excited to be working with the engineers in this Directorate and gaining insight as to how they best support the Warfighter.

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This newsletter was published through the Balanced Scorecard.

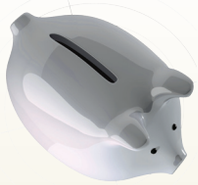
For article suggestions, questions or comments please contact **Ed Bowen** at **ed.bowen8.civ@mail.mil**.

Awareness: Summer 2012 Olympics Opening Ceremony

The 2012 Summer Olympics will kick off on 27 July 12, in London, UK. Below are the five basics of the Opening Ceremony that will help you keep up with the pomp and circumstance of the ceremony involving 15,000 athletes and an expected 4 billion spectators worldwide.

1. **Receiving the Head of State:** The President of the International Olympic Committee, Jacques Rogge, will greet the Head of State (Her Majesty the Queen of England) at the stadium and lead her to her seat.
2. **Parade of Athletes:** Nation by nation, teams in the Olympic games enter the stadium by alphabetical order with the host country team marching into the stadium last.
3. **The Speeches:** Olympic London 2012 Organising Committee (LOGOC) Chair Seb Coe will give a speech, followed by IOC President Jacques Rogge. Following the speeches, the Queen will officially declare that the games have begun.
4. **"Let the Games Begin!"** After the games are declared open, the Olympic flag will be carried into the stadium and Olympic representatives from the host country will recite an oath vowing to compete and judge in compliance with the rules. Last, but most importantly, the Olympic flame enters the stadium. The flame is passed from athlete to athlete, ending with the final torchbearer who will light the cauldron. The flame will remain lit for the entirety of the games.

ECBC Engineering Directorate HR Tip: Roth TSP



Army civilian employees who are eligible to participate in the Thrift Savings Plan (TSP), will soon be eligible to make contributions to the new Roth TSP. Under Roth TSP, money is invested after-tax, and along with its associated earnings, is tax-free upon withdrawal, as long as certain Internal Revenue Service conditions are met. There is no reduction in adjusted gross income under Roth TSP contributions as there is with traditional TSP contributions. More information on ROTH TSP can be found at: **https://www.tsp.gov/whatsnew/roth/compareRoth.shtml**

*For information about ECBC HR policies, please contact **Sabre Harper** at **sabre.d.harper.civ@mail.mil**.*

Ask a Tech Tip: Cutting through hard to remove grease on stovetops!

***Mike Kauzlarich**, of the Pyrotechnics and Explosives Branch, reveals how the techniques and lessons learned in labs can help you solve your household problems. Submit a question to him at **usarmy.APG.ecbc.mbx.engineering-directorate@mail.mil**.*

Every household has baked-on grease and carbon on a stovetop liner or wire rack. It can be almost impossible to properly remove these without using harsh chemicals. Here is a solution to cut through that grease: Ammonium Hydroxide, better known as Household Ammonia.

Take those nasty grill/stove parts out and put them between sheets of newspaper. Put the newspaper-wrapped items into a heavy duty plastic bag. Now, put on some protective latex/nitrile disposable gloves. Carefully pour in a cup of household ammonia and then tightly seal the bag - do this outside. Leave the tightly sealed bag in a warm, safe place for 24 hours. After 24 hours, carefully remove the parts from the bag and clean off the newspaper from the items as you normally would clean them. The baked on grease should wipe right off.

If you are worried about keeping the bottle of leftover ammonia in the house, you can mix half of it with water, put it in a hose-end sprayer and spray it on the lawn. Ammonium Hydroxide and water is an excellent nitrogen booster – farmers use it all the time.

As always when using chemicals around the home, we encourage everyone to keep safety first. It is easy to be lulled into a false sense of security because you purchase these "household" chemicals from the local store, however they are still chemicals. Exercise caution when using any household chemical: be safe, read labels, and store the chemicals properly. Always wear appropriate personal protective equipment. Chemical safety is not just for the labs.

Be, Know and Do: Leveraging Lessons Learned from the Army for ECBC Engineering

Angel Castro, Engineering Technician, with Joint Service Physical Protection Engineering Branch shares how his service in the U.S. Army prepared him for his work supporting Joint Program Manager – Protection (JPM-P).

Engineering Edge (EE): How did you get your start in your current ECBC position as Engineering Technician?

Angel Castro (AC): I came here as a contractor to support the Joint Equipment Assessment Unit (JEAU) team. At that time, the team was called the Individual Protection Team. Now, it's the Joint Service Physical Protection Engineering Branch. Before that, I was in the Army for 20 years. I retired in 2003 as a chemical operations specialist. After retirement, I was with Batelle, working for the Marine Corps for the Readiness Improvement Program. We did fit tests and fitting of sailors for individual protection equipment. Then they opened two positions here and I applied for one. It has been almost four years. I worked for Batelle, then switched to Jacobs Technology and now I am civil service.

EE: What is your favorite part of your job?

AC: Continuously supporting the Warfighter - ensuring that they have the right information and the right equipment and training. I used some of the same equipment in the Army. I can see it from the perspective of the user at the lowest level. Also, I really like working here and interacting with the engineers.

EE: What project are you currently working on, or have you worked on in the past that you learned the most from?

AC: I think I learned more from the JEAU Chemical, Biological, Radiological, Nuclear and High- Yield Explosives (CBRNE) program, because it taught me how things are made and the process of taking something from an idea to getting it issued for production for the Warfighter. I also learned what it takes to make a product effective. I have learned a lot from doing the Defense Chemical Test equipment testing, and using that equipment to validate the CBRNE equipment that is used by the Warfighter.

EE: What skill do you use most in your job, that you did not realize you would need?

AC: The "Be," the "Know," and the "Do" is how the Army defines leadership. It is something the Army teaches every Warfighter from the time you join the service, to the time you retire. If you know the "Be," and the "Know," then you have to follow through with the "Do." Basically the "Be" shapes your character. It gives you the courage to do what is right regardless of the circumstances or the consequences. The "Know" is about the knowledge and skill sets you need to be competent – know your equipment, you need to be technical, you have to manage your resources and you have to know what the needs of the people are. The "Do" is the act that brings together everything you are, everything you believe, and everything you know how to do to provide purpose, direction, and motivation. Some examples - the "Be" is believe in yourself, your mission, and your team. Select a role model and follow his or her example. Find the best in others and emulate their attributes; look for people that inspire you. Be honest and truthful. Be a person of your word. Be receptive to constructive criticism. Also, part of "Be" is taking initiative as things happen; your commitment. Be a coach, leader, mentor, and trainer. Approach every problem as a challenge to overcome and an opportunity to learn and grow. Examples of "Know" - earn the reputation as a subject matter expert on the job; know the nuances of your assigned responsibilities better than anyone else in your outfit; ask if you are responsible; become an expert instructor; know your equipment and maintenance. Take courses or read technical manuals to remain current on the status of Army technology. Also learn the history about ECBC and how it became what it is today. The "Do" is very simple. Examples include, always arriving early and leaving late. Be responsible. Be a good listener, observe, learn, and always ask questions. Volunteer for additional duties. Try to develop and lead a vigorous training program. Enhance your professional qualifications. Part of the "Do" is to strive for the tough job and do it well. I learned all this in the military and I knew it was going to help me, but I did not know it would help me this much.

A Gathering of the Minds: ECBC Engineering Facilitates First JACKS-RW Summit

ECBC Engineering's Information & Technology Solutions Team (I&TST) facilitated a DoD-wide Joint Acquisition CBRN Knowledge System-Reporting Warehouse (JACKS-RW) Summit, held concurrently at Aberdeen Proving Ground (APG) and Rock Island Arsenal (RIA) on 4-5 April 2012.

JACKS-RW is a Joint Program Executive Office for Chemical and Biological (JPEO-CBD) information management system that is used by all Department of Defense (DoD) Service Branches and Agencies to collect, consolidate, and report Chemical, Biological, Radiological, Nuclear (CBRN) stock quantities and serviceability status in support of the Annual Report to Congress (ARC). The system is also an important tool in managing the shelf-life of CBRN assets across DoD.

"This is the first time the JACKS-RW program and project management teams, along with users and data managers of the system have gathered together to evaluate processes, identify improvements, and brainstorm methods to standardize and display the data to ensure that effective and efficient methods are used to respond to the needs of the CBRN community," said Pat Estep, JPEO-CBD Knowledge Management and JACKS Program Manager.

For the first time, program and project management teams, users, and data managers of the JACKS-RW program gathered to share ideas on improving processes and efficiencies.

Forty professionals participated, representing DoD, JPEO, ECBC, Army, Navy, Marine Corps, Air Force, Coast Guard, Defense Logistics Agency (DLA), and the Joint Equipment Assessment Program (JEAP). "This is the first time the JACKS-RW program and project management teams, along with users and data managers of the system have gathered together to evaluate processes, identify improvements, and brainstorm methods to standardize and display the data to ensure that effective and efficient methods are used to respond to the needs of the CBRN community," said Pat Estep, JPEO-CBD Knowledge Management and JACKS Program Manager.

"The summit was very productive," said Estep. "The level of participation attests to the value of the information and the remarkable momentum that has developed over the past few years. "

The story doesn't end here! To read more, visit the ECBC blog at http://edgewoodchembio.blogspot.com.

SUPPORTING AMI

ECBC Engineering's Decon Branch Provi

ECBC's Decontamination Engineering Branch (DCEB) actively supports the decontamination needs of U.S. government agencies with a focus on the acquisition and sustainment of decontamination products in support of the United States Armed Forces. While the DCEB performs technical management of the major fielded decontamination systems, such as the M12A1 Decontaminating Apparatus and the M100 Sorbent Decontamination System, their work touches the full spectrum of lifecycle activities. In this issue, *The Engineering Edge* takes you inside two focus areas that illustrate how the DCEB supports a wide range of customer needs in the area of decontamination.

James Burns (DCEB) provides members of the 59th CBRN Company with operator training for the M12A1 Decontaminating Apparatus.

Opposite page, bottom left:: James Burns (DCEB) provides members of the 59th CBRN Company with training for the M12A1 Terrain Decontamination Spray Bar.

Opposite page, top right: Members of ECBC Engineering's Decontamination Branch, Alex Carlson and Joe Grodecki, collaborate with Shannon Blackmon and Kurt Schwinn, both of JPM-P, to develop and assemble decontamination kits for the U.S. Army, Marine Corps, Navy and the Coast Guard.

ERICA'S TROOPS:

vides State-of-the-Art Decon Equipment

ECBC Engineering's DCEB Supports JPM-P with Decon Needs for U.S. Armed Services

One of the Decontamination Engineering Branch's core competencies is providing engineering and technical support for decontamination systems to Joint Project Manager-Protection (JPM-P).

"The opportunity to work with service representatives, testing agencies, and JPM-P personnel with the objective to provide the best product possible to the Warfighter has been an extremely gratifying experience," said Joe Grodecki, the lead Army technical representative for developmental decontamination programs within JPM-P.

This type of support and collaboration is done through several roles and responsibilities, to include the Army Materiel Developer (AMD) role.

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Engineering's DCEB Travels to Camp Arifjan, Kuwait

Members of the Decontamination Engineering Branch (DCEB) at ECBC traveled to Camp Arifjan in Kuwait in early May to field a new Terrain Decontamination Spray Bar (TDSB), and to provide M12A1 support.

The TDSB works in conjunction with the M12A1 Decontaminating Apparatus to apply decontaminant or water over terrain. The M12A1 remains the major large scale decontamination system in the field today and is expected to stay for several years to come. As such, it is important that the system not only remain mission ready, but that it evolves as necessary to meet Warfighter needs.

ECBC Engineering has been an integral player, along with its business partners at Tank-automotive and Armaments Command-Life Cycle Management Command (TACOM-LCMC), Joint Project Manager (JPM) Protection (JPM-P) and Pine Bluff Arsenal (PBA), in ensuring the continued readiness of the M12A1 Decontaminating Apparatus for several decades. ECBC Engineering continues to ensure the system's readiness today.

The fielding of the TDSB was sponsored by TACOM-LCMC and was performed at the request of U.S. Third Army/Army Central (ARCENT). The 59th Chemical Biological Radiological Nuclear (CBRN) Company, from Fort Drum, N.Y., was the receiving unit. James Burns, ECBC Engineering, and Nathaniel Jarrett, Pine Bluff Arsenal, traveled to Kuwait to conduct the fielding of the TDSB, as well as provide M12A1 operator and maintenance training. Burns and Jarrett also supported a decontamination training exercise conducted by the 59th CBRN Company.

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Through the Smoke: Pyrotechnics and Explosives Branch Creates Safer Grenade for the Warfighter

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"Some of the earlier types of grenades were unsafe for Warfighters, because while they were screened in the smoke, the smoke cloud could irritate skin, or it could be ingested and cause problems under the right conditions. We needed to find ways to be able to use the most effective smoke grenade without similar risks," said Joe Domanico, Chief of the Pyrotechnics and Explosives Branch.

"We will continue to test it for both performance and toxicity until all of our design criteria have been met. The technical approach we took was to make every chemical in the smoke composition perform two functions. For example, the binder not only slows down the burn rate, but also adds to the smoke output," Domanico said.

Domanico and his team use chemistry to create a safe screening smoke that is still able to produce the correct density of smoke, for a longer amount of time. One of the bonus factors in the proposed overall new grenade design is the ability to use a lid from the M18 series of colored smoke grenades which will completely seal the can from moisture during storage in hot, cold, dry, and humid conditions. This will allow the grenade to last longer in storage and be able to sustain higher abuse prior to use such as deep water immersion. A safe ignition composition designed concurrently with the HX smoke development burns through the sealed metal can, while simultaneously igniting the HX smoke composition.

"Some of the earlier types of grenades were unsafe for Warfighters, because while they were in a screen of smoke, the smoke cloud could irritate skin, or it could be ingested and cause the Warfighter problems under certain conditions. We needed to find ways to be able to use the most effective smoke grenade without similar risks," Domanico said.

The smoke composition in the current screening grenade is an improved version of a training grenade, which was designed for minimum toxicity at the expense of producing less smoke than the AN-M8 HC grenade. The search has taken the team into an area of increased smoke per unit weight of composition, while maintaining focus on toxicity. Instead of taking a chemical and making a smoke cloud from it, the team produces the smoke chemical as a result of the combustion of two other chemicals.

"Basically, when a smoke cloud has a higher extinction coefficient, you need less of it to screen a particular area. Other factors such as the depth of the smoke cloud, the duration of the smoke particles before they evaporate into the atmosphere and the time the grenade continues to put out smoke particles are all considered in the evaluation of a specific design," Domanico said.

ECBC's Pyrotechnics and Explosives Branch works together to make HX Smoke, an effective but previously dangerous smoke composition, safe and usable for Warfighters.

Domanico said some of the methods used in creating a higher extinction coefficient for the grenade included forming a balance of oxides, which do nothing special for increasing the smoke cloud, and chlorides, that pull water out of the atmosphere and add additional smoke to the existing smoke. Some chlorides under current consideration and testing come from the combustion of powdered metals such as titanium and boron, and certain waxes.

When the team works to improve materials, such as a smoke composition, they use a thermodynamic balancing program to establish a baseline composition. Small-scale testing then determines the best modifications to that baseline composition. During the initial formulation effort, safety testing is performed to determine the new composition's sensitivity to shock, friction and static discharge. New compositions that make excellent smoke have often been rejected due to an unacceptable sensitivity to ignition during storage, transportation, and/or handling.

"There still is a lot of trial and error, once you find a material that works well, the next step is figuring out how much of each material you need to use, and what other chemicals you need to put into the grenade to maintain the desired reaction rate," Domanico said.

Before the actual grenades are made, Domanico and his team conduct an imperial test matrix to measure the relationships between the chemicals, and make sure that the combined chemicals can produce the required effect.

While the chemistry knowledge of the Pyrotechnics and Explosives Branch's operations is extensive and involves several rounds of trial and error after the initial calculations, the application of other disciplines such as mechanical engineering, drafting and human factors all work together towards creating the highest quality and safest type of smoke grenade for the Warfighter.

Pyrotechnics and Explosives Branch Chief Joe Domanico demonstrates the HX Smoke grenade for the Cecil County Leadership Council.

Life in the Fast Lane: ECBC Employees Take on New Roles in the Center

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Dan Barker

EE: What skill did you gain from working in this position?
DB: I honed some of my existing skills like time management and multitasking. As an XO, your work comes fast and furious, so you must utilize your desk time very efficiently and ensure that nothing is overlooked. I expanded my networking skills. You soon learn in this position that no one person has all the answers, so you have to have an understanding of who to contact when you need to complete a task. I had the opportunity to brief senior leadership from other organizations and refine my presentation skills. Finally, I got a taste of long-term strategic planning rather than short-term tactical efforts.

EE: What is your advice to becoming a successful XO?
DB: It is really important to gain an understanding of who does what, and who knows what within the Directorate. I recommend setting up desk-side conversations with as many division and branch chiefs as you can, in order to be fully aware of all their capabilities and areas of expertise. Once you have that understanding, it makes performing certain tasks easier. Also, the Front Office Administrative Support is remarkable. They are a wealth of information and experience, and they are extremely professional. I realized what a great asset they were very early on.

EE: Did you learn anything that you hope to bring back to your home Directorate? (R&T)
DB: The biggest thing I brought back to the Research and Technology Directorate was a full understanding of the Center's capabilities, and how we fit into the larger picture of the Chemical Biological Defense Program. I hope I can leverage this knowledge for future collaboration, and to enhance the marketing of research efforts for which I have involvement.

EE: What will you miss about Engineering?
DB: I will miss the people. I sincerely enjoyed working with everyone in the Directorate leadership. I found them all to be extremely hard working, kind and sincerely devoted to ensuring the vitality of ECBC for years to come.

Dr. Carrie Poore

A joke I have heard over the years is that engineers think one way and scientists think another. I am a scientist, so it is a new, fairly unchartered world for me. But, in my mind, the way I can be most effective in both my career and for the Center, is to become knowledgeable as to what the Center is doing in total. I know a lot from the Research and Technology (R&T) and the Directorate of Program Integration (DPI), so now I'm getting to learn what happens in Engineering.

EE: Where was your previous position before applying to the XO program?
CP: I took leave from being the Team Leader for the Advanced CBRNE Training Team in DPI. The training program focuses primarily on educating the Warfighter on sensitive site exploitation of potential chem and bio production processes.

EE: What are your perceptions of the Engineering Directorate?
CP: The acquisition aspect is more of a driving force over here than anything I have been exposed to. Engineering appears to have the most involvement with acquisition activities. The things I have been doing have not really been acquisition focused. It is something new for me to learn. I will pick it up the quickest because I am surrounded by so many experienced individuals. I am happy to be learning about it and this well-suited environment, conducive for learning, makes it even more enjoyable. The support I have always received from upper management throughout all of the Directorates has afforded me the opportunity for continuous learning and personal and professional growth.

EE: What kind of exposure have you had outside of your home directorate? (DPI)
CP: When I first got here as a contractor, I was in the R&T directorate. When I turned government, I immediately went into DPI. I've worked with all three Directorates through different programs, but since I have been with DPI, I have had the opportunity to work in the lab with R&T.

EE: Why did you want to join the XO program?
CP: I think you get to the point where you reach your comfort level and you have most of the information you need to execute your current job, like it is second nature. I think we always need to be learning something and figuring out how to better ourselves. I was at the point where I wanted to be able to contribute and be more value-added to my organization. This program was suggested to me as a means for professional growth. I knew, by becoming an XO, I would learn volumes that would be helpful to me in the execution of any work I may undertake in the future. It is really about using and growing our abilities in the most efficient way possible.

Kevin Wallace: Your Reality Check

In his first guest column, Kevin Wallace describes the Catch 22 of long vacations.

Summer is in full swing, which means barbecuing on the grill, relaxing by the pool and most importantly, hitting the road for vacation (or "holiday" for our European readers).

I look forward to experiencing somewhere new each year, but my desire to "get away" is bittersweet. In one respect, the opportunity to decompress and relieve your mind of the stresses from work is extraordinary and essential to maintaining your sanity. On the other hand, the rest of the working world continues to march forward whether you like it or not and, by the way, you better be caught up as soon as you return to the office, or else.

There lies my internal struggle with the notion of "taking a vacation." Quite often the voices do not agree. Upon my return do I really want to spend the majority of my day sifting through numerous emails, missed phone calls and "anxious" customers? So I have made the conscious decision to take a little piece of work with me to help ease the pain of my return. Entering from stage-left: the evil, the dreaded, the electronic ball-and-chain: the Blackberry.

Call it what you want, but I see the Blackberry as an arbitrator; the middle-man mitigating the Monday morning blues when returning to work. The big problem with that line of thought is my wife's opinion. Let's just say she is not a big fan of work and vacation intermingling, so I routinely catch myself sneaking away to check my email. So I must apologize in advance, if I do not immediately respond to you while I am on vacation, there is a very good possibility my covert emailing operation has been exposed and I have been placed in time-out with my Blackberry locked in a remote location where I cannot reach it for an undetermined amount of time.

I suppose your matter will need to wait until the Monday I return or whenever I am allowed out of timeout.

ECBC Engineering's DCEB Supports JPM-P with Decon Needs for U.S. Armed Services

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"We look forward to continuing this effort with JPM-P and the DR SKO program office. It is always exciting to work on a great project with a great group of people," said Joe Grodecki, the lead Army technical representative for developmental decontamination programs within JPM-P.

As the AMD, Joe Grodecki is the lead Army technical representative for developmental decontamination programs within JPM-P. This includes support on Source Selection Boards, a role in review and approval of key programmatic documents, as well as acting as the Army focal point and voice, in unison with the Army Combat Developer (Maneuver Support Center of Excellence) on Systems Engineering and Test & Evaluation Integrated Product Teams (IPTs).

"During my three years in this position, it has been a tremendous experience. I learn something new every day," Grodecki said. "The opportunity to work with service representatives, testing agencies, and JPM-P personnel with the objective to provide the best product possible to the Warfighter has been an extremely gratifying experience."

In addition to the support provided to JPM-P as the AMD, Grodecki and Alex Carlson, DCEB, have worked with JPM-Contamination Avoidance and JPM-P to develop the Decontamination Expeditionary Bag (DEB) as part of the Dismounted Recon Sets Kits and Outfits (DR SKO) program. The DEB is a self-contained, tactical, and independent decontamination system to be used against Chemical Biological Radiological Nuclear (CBRN) agents, Toxic Industrial Chemicals, and Toxic Industrial Materials for personnel decontamination. It is a one-time use item that is designed to decontaminate up to 24 personnel at a time in each of the services, except the Navy, which has an eight-person variant kit. ECBC Engineering and JPM-P have collaborated with the DR SKO program office and the services to ensure the DEB kits contain the necessary equipment for each service to complete their mission. There are currently three variants of the kit: Army, Navy, and Marine Corps.

In addition to the DEB kits that ECBC has already helped develop, ECBC Engineering has been designated as the lead for the development and assembly of all future DR SKO DEB requirements as well as for the development of the DEB specification.

To date, ECBC Engineering has collaborated with the Dismounted Recon Sets Kits and Outfits (DR SKO) and JPM-P to develop and assemble 37 Army, Marine Corps, and Navy decontamination kits and 20 kits for the Coast Guard.

"We look forward to continuing this effort with JPM-P and the DR SKO program office," Grodecki said. "It is always exciting to work on a great project with a great group of people."

Engineering's DCEB Travels to Camp Arifjan, Kuwait

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"We have enjoyed the recent successes that our business partnerships have enabled. The partnership successes are direct results of the people involved and their commitment to teamwork, communication and building strong relationships," said John Kerch, Sustainment Engineering Division Chief and DCEB Branch Chief.

Over the years, the M12A1 has undergone several ECBC-led upgrades. The most recent effort involved development of a spray attachment that improves the consistency and safety with which the Warfighter can perform decontamination of large areas of terrain using the M12A1.

In the past, when the M12 was carried in the older M54 and M809 5-ton cargo trucks, terrain decontamination was performed by Warfighters positioned on seats affixed to the front fenders of the truck. The Warfighters would apply decontamination solution in front of the vehicle as it traversed terrain. When the M1083 Medium Tactical Vehicle (MTV) became the M12A1's prime mover, there was no place for the Warfighter to sit and spray decontamination solution, due to the M1083's design with the cab over the engine.

DCEB's James Burns traveled to Camp Arifjan, Kuwait, to provide training for the M12A1 Decontaminating Apparatus.

In response to this, the DCEB developed the M12A1 TDSB. The TDSB is carried in the cargo bed of the M1083 in a storage case when not in use. When needed, the TDSB can be rapidly connected to the front of the M1083 vehicle, without using tools, and can be used to apply decontaminant, or water over terrain as the vehicle moves. The TDSB is operated entirely from the bed of the vehicle. This design increases Warfighter safety, reduces manpower requirements for terrain decontamination operations, and improves the consistency with which decontaminant can be applied to the terrain.

"It was a uniquely rewarding experience," Burns said regarding the trip. "You work on these projects and you are involved in the technical aspects of it, but getting the opportunity to work directly with the Warfighters using the equipment, getting that feedback and experience first-hand, is irreplaceable."

While initial fielding of the M12A1 TDSB is complete, the current strategy involves future fielding of the TDSB to all other units possessing the M12A1.

"We have enjoyed the recent successes that our business partnerships have enabled. The partnership successes are direct results of the people involved and their commitment to teamwork, communication and building strong relationships," said John Kerch, Sustainment Engineering Division Chief and DCEB Branch Chief.". "We look forward to advancing those partnerships and successes into the future."