

THE ENGINEERING EDGE



ECBC ENGINEERING
Design→Build→Test→Support

EDGEWOOD CHEMICAL BIOLOGICAL CENTER

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For article suggestions, questions or comments please contact Ed Bowen at ed.bowen@us.army.mil

Leadership Interview Series: *Bill Lake, Chief of Engineering Support Division*

In this month's Engineering Edge Leadership Interview Series, we talked to Bill Lake, Chief of Engineering Support Division, about his role and got him to share his thoughts on leadership.

Engineering Edge: How did you start your career here at ECBC?

Bill Lake: I've been here for 23 years. I transferred here from the Army Intelligence Agency and initially worked in the PM shops during my first seven years. I did the testing on the Fox MBC Recon System and AJay Thornton was my team leader. Later, I came to work on the Homeland Defense Initiative under Suzanne Milchling. While working under Suzanne, I was the lead of the Chemical Improve Response Program. After that I spent two years on a matrix assignment to the Defense Threat Reduction Agency. **(Continued on page 2)**



Engineering Powers the New Face of Protection: *JPM-IP leads the way in military respiratory protection*



Each month the Joint Project Manager for Individual Protection (JPM-IP) fields 10,000-15,000 Joint Service General Purpose Masks (JSGPM) to the U.S. Armed Services. The masks represent over ten years of engineering and testing efforts that resulted in providing Warfighters with state-of-the-art respiratory protection against known chemical and biological agents and radioactive particles.

According to Bill Fritch, Product Manager of Joint Service Ground Masks (JSGM), the JSGPM establishes cohesion among the Services by replacing the previous M40 series of protective military **(Continued on page 3)**

ECBC Hosts the 2010 Army-wide Publications Council

For the first time in over a decade, ECBC hosted the annual Army-wide Publications Council Meeting. Held on June 22-24 2010 in the Berger Auditorium, members from organizations all over the Army participated in discussions related to equipment publications and new policies and procedures towards the development, management, and sustainment of these publications.

In addition to ECBC, this year's participants included Equipment Publications representatives from the following commands: Research Development and Engineering Command (RDECOM), Logistics Support Activity (LOGSA), **(Continued on page 4)**



Amy Shipley, third from the left, represented ECBC Engineering at the Army-wide Publications Council meeting in June.



Leadership: Bill Lake

(Continued from page 1)

When I came back from there I took my current position as the Chief of Engineering Support.

EE: What are your main roles and responsibilities?

BL: I have two branches that report to me, the Smoke Core Branch and Safe Haven branch. I provide oversight and management support to those branches and I also serve on a number of Army and Federal level working groups for human decontamination.

EE: What have been some of the challenges you have faced during your career? How did you overcome them?

BL: I encountered some of the biggest challenges as I grew into various leadership roles. As I went from being a team leader to a supervisor to a division chief it became imperative that I develop an understanding of how to get the most out of people and understand what they needed from me to allow them to succeed. It's something you can't learn by taking a class or reading a book. You acquire the understanding through interactions with wonderful people, gradually realizing how to get most out of your team and motivate them in an optimal manner.

EE: What makes you most excited about the work you do here at ECBC?

BL: Just interacting with all of the wonderful people. There are some top notch people here at Edgewood personally and professionally. It's a great organization to work for.

EE: What kind of advice would you give to members of the Engineering workforce who would someday like to see themselves in a leadership position?

BL: The best advice I can offer is to get involved in Leadership Programs. The Leadership Cohort Program, Executive Officer training and especially the Engineering Balanced Scorecard strategic initiatives – these are all programs you really need to participate in. They provide excellent opportunities to get to know who your management is and the leaders of the other ECBC Directorates.

The Engineering BSC strategy is perhaps the most available opportunity to interact with Engineering leadership. Not everyone is eligible to participate in things like the Leadership Cohort Program or the Executive Officer training, but everyone can and should participate in BSC.

If you want to be a leader, you need to be willing to step outside of your boundaries. Network and get involved in the general ECBC workforce to meet people who work with you and leaders at a Directorate level and at the Center level. Apply for developmental assignments even if the assignments are not accepted. Participate in these types of initiatives even if you don't see a payoff for tomorrow. ⚙️

Do you know someone who you think should be featured in the Leadership Interview Series or the Why I Love Balanced Scorecard? Let us know— email Ed Bowen at ed.bowen@us.army.mil. We value your input.

Why I Love BSC: A conversation with Suzanne Milchling, Product Director, Standoff Detection



Suzanne Milchling, Product Director, Standoff Detection, was one of the initial members of the Balanced Scorecard (BSC) Core Team when the strategy was first developed in 2005. The Engineering Edge talks with Suzanne to understand why she chose to participate in the strategic planning process.

Engineering Edge: How did you first hear about BSC?

Suzanne Milchling: I've been involved from the beginning, since 2005. I was one of the first people working on it with Bill Klein (Associate Director of Engineering) and Ed Bowen (Engineering Directorate Branch Chief of the Strategic Planning and Business Operations Branch). At that time I was the Associate Director for Joint Interagency Activities. I sat on the BSC Board of Directors as well as the BSC Core Team. At that time, the Engineering Directorate really didn't have a business strategy that was totally integrated. I remember during the initial stages of developing our strategy, we'd meet for two days at a time to hash out, in sometimes heated debates, the purpose of this integrated strategy – we had to make sure what we put down on paper would be interpreted in the way we intended. I was a proponent of the BSC from the start because I saw it as a tool that we would use in our jobs regularly, not just something the Engineering workforce would put on a shelf and follow once in a while. The BSC allowed us to contemplate where we were going as an organization and ask ourselves, "Does it make sense?"

EE: What initiative were you assigned when you began working on the BSC?

SM: In the early days of the BSC, I was the Core Team Point of Contact for Internal Process 2 (IP2), "Provide Customers an Accountable Person." IP2 essentially measures the process for matching customers to a specific, accountable person, who then defines the scope of the effort and works with various groups within the Directorate and Center to develop the cost and schedule details and ensure that the client's requirements are met.

EE: What were some of the challenges the BSC Core Team faced when launching the strategic business strategy?

SM: I think one of the primary challenges when building any strategy is looking at each specific initiative, understanding how they overlap, matching interdependencies and determining the best order to phase the initiatives. We also were coming from a unique position as a mid-tiered team; we had to figure out how our strategy fit within the overall ECBC mission and vision. In order to tackle some of these challenges we intentionally developed a diverse group of people within the BSC core team to properly reflect the diversity of the Engineering Directorate. It was important that our messaging mirror the Engineering workforce in order to create a strategy that could easily feed into the mission and vision of the [Engineering] Directorate.

EE: What has been the most rewarding part of working on the BSC?

SM: Change can be fun and I like doing different things, so being a part of this strategic planning effort has been a welcomed addition to my work. The strategy is intrinsically rewarding - it is applicable, we can take all of the bubbles on the Balanced Scorecard map and apply them to our job on a daily basis. ⚙️

JSGPM

masks for USA and USMC ground and combat vehicle operations, as well as the MCU-2/P series of protective masks for USAF and USN shore-based and shipboard applications.

Unlike legacy protective masks that were designed specific to each Service, the JSGPM was designed to be used by all U.S. Armed Services.

Previous military masks provided excellent protection; however, in the context of complex, hostile environments, they were cumbersome with capability gaps that had to be closed. The catalyst for the development of the JSGPM was the need for continued exceptional respiratory protection, but with improved operative capabilities.

Among the myriad of operative capabilities achieved, comfort, visibility and hydration improvements obtained by the JSGPM provide a more ergonomic design for the Warfighter with increased optical clarity, and efficient weight distribution to lower the mask's profile. Unique to the JSGPM is the external dual filter design which reduces breathing resistance by half and provides 24 hours of respiratory protection; an enhancement over legacy masks' eight hours of protection.

"Not only do these Joint Service General Purpose Masks greatly improve the ability of the Warfighter to perform, logistics are reduced, the cost goes down as a result of producing so many, and it is easier to support," Leroy Stitz, Chemical Engineer, Protection Factor Toxic Chamber (PFTC) Branch said.

Fulfilling required mission capabilities across each of the four



Services proved to be one of the greatest challenges when developing the JSGPM. Each of the Services had specific requirements for integrating with weapons systems, communication systems and other mission-critical functions.

"There was a lot of market research that was conducted. Once all of these technologies were analyzed and evaluated, we started on a more definitive concept approach based on what would meet the Warfighter's requirements," Fritch said.

What started as rough sketches and clay modeling eventually evolved into this first-of-its-kind Joint respiratory protection solution for the U.S. Army, Navy, Air Force, and Marine Corps.

"The program had a lot of concept wrangling early on to determine which technologies we needed to invest in, in order to support a variety of design approaches," Fritch, said.

"We did some modeling with clay and rough sketches that the CAD engineers would convert into computer models. These would then be sent to rapid prototype companies that would build crude prototype components that we would assemble and conduct testing.

"We continually repeated the CAD modeling/prototype fabrication

cycle until we obtained designs that were gaining Warfighter acceptance. This work and knowledge was captured in reports and prospective contractors were given the information to build their approach to completing the design work and getting the design to production," Fritch said.

Since 2001, more than 300,000 Warfighters have trained on or been deployed with this respirator. Their feedback and contributions to the development of the JSGPM resulted in a product that is one of the most heavily-tested pieces of Individual Protective Equipment (IPE) ever developed by the Department of Defense (DoD).

"We received a lot of cooperation from the Warfighter groups to participate in testing," Fritch said. "We really tried to get out there in the field and adjust the design based on the feedback we received. The mask was worn on a lot of Warfighters throughout testing."

According to Leroy Stitz and Steve Yurechko of Engineering's PFTC branch, the new joint service concept and dual filter design necessitated new testing processes.

"We implemented standard military testing, work testing, and obstacle courses for the soldier and civilian personnel. But, when new concepts like the dual filters are introduced, we must design new testing exercises in order to adequately stress the critical areas of concern," Yurechko, PFTC Chemical Engineer, said.

From the initial Milestone Zero development process in 1997, through the development, testing and support phases, over 100 people have participated at various levels of the JSGPM program in the past 13 years. In his 28 years of experience with mask development and production, Fritch says that the success of a program like JSGPM is a result of an exceptional integrated product team.

"As long as everyone works together to overcome some of the inevitable obstacles and issues that arise, things will go smoothly and the process will be enjoyable," Fritch said.

To date, 313,000 JSGPM's have been fielded since 2008. In the past two years the masks have primarily been rolled out to the Air Force and Marine Corps; however, the Navy has a small allotment of them and eventually the Army's requirements will be filled. ⚙️

ECBC Safety Tip of the Month

From the time you pick up a firearm, you become part of a system over which you have control. Following the basic rules of handling firearms can ensure the safety of the handler as well as surrounding individuals. Below are "Ten Commandments of Gun Safety" compiled by the Safety Programs and Activities Committee.

1. Always point the muzzle in a safe direction.
2. Firearms should be unloaded when not in use.
3. Never rely on the gun's safety.
4. Be sure of your target and what is behind it.
5. Always use the proper ammunition.
6. If your gun fails to fire when you pull the trigger, handle with extreme care.
7. Always wear eye and ear protection while shooting.
8. Be sure the barrel is free from obstruction prior to shooting.
9. Do not alter or modify the gun, and have it serviced regularly.
10. Learn the mechanical and handling characteristics of the firearm you use.

Army-wide Publications Council

(Continued from page 1) Armament Research Development and Engineering Center (ARDEC), Aviation and Missile Life Cycle Management Command (AMCOM), TACOM Life Cycle Management Command (TACOM LCMC), Army Publishing Directorate (APD), Communications-Electronics Life Cycle Management Command (CECOM), CECOM Communications Security Logistics Activity (CCSLA). In addition to presenting issues from Army project teams, the Publications Council (AR 15-3) discussed publication policy for the Army.

The Council provides a forum for each command to present and resolve publications challenges, such as planning a strategy for supporting product teams whose programs require shorter and shorter fielding dates. Most of all, it is the forum to establish Department of the Army policy through Publications Council consensus.

Representing ECBC at the Council Meeting was Amy Shipley, Publications and Provisioning Branch (PPB) Chief and a part of the Acquisition Logistics Division (ALD). Shipley also serves as the Equipment Publications Control Officer (EPCO) to uphold Department of the Army policy and procedures.

Shipley works on a daily basis with Engineering product groups to create required technical manual publications for supply support equipment going to the Warfighter.

In layman's terms, "every product needs a book," Shipley says.

Every product or system that ECBC and the Joint Program Office (JPO) develop often uses ALD to determine a maintenance concept that can support reliability, maintainability, and sustainability of each system. A big part of that is Provisioning Parts Data.

"That's where the Publications and Provisioning Branch comes in, providing the support and publications piece to give the Warfighter the authorization and ability, via instructions, to use the equipment," Shipley said.

"I think many product teams at ECBC know they need a technical publication for their developmental system, but they don't realize all that goes into creating one. For example, each publication requires an initial provisioning specialist to code spare and repair parts. That information is combined with the system's maintenance concept and used to develop the technical manual. Each system has elements that require tailoring, and the Publications Council can use the lessons learned throughout the year to adjust policy in a way that

provides better product support."

An immense amount of attention is given to the manuals. When a Warfighter is in the field, the manual is expected to be thorough and clear enough to guide the individual through each procedure to complete the needed task. In order to verify the effectiveness of a manual's instructions, Shipley says they "start from a blank slate," assuming the Warfighter who will be following the manual to operate a piece of equipment is not knowledgeable about the product.

"It's a part of our verification process. We give the manual to Warfighters, and they should be able to complete the task at hand (for example, change a filter) without outside assistance," Shipley said.

When writing technical manuals, EPCOs like Shipley must abide by MIL-STD 40051-X, which is the established policy for providing product information for instruction and supply to the Warfighter. The Army Material Command (AMC) establishes many of these policies based on the results of Publications Council voting. Since there is one EPCO at every Command across the country, the annual Publications Council Meeting becomes a necessary meeting point in order to provide accountability amongst the many EPCOs for publications procedures and to discuss changes on the horizon. Shipley actively communicates with Publications Council members in order to keep ECBC product team concerns in the forefront.

"We are experiencing a paradigm shift right now. We're seeing a huge shift in the developmental process of a product," Shipley said.

According to Shipley, there has been an increased demand for Urgent Need equipment, which has led to an increase in the integration of commercial equipment with traditional Government development items. Though this integrated effort has certainly been used before, the shift in the Government's product development process has caused a major shift in the way publications are developed.

An additional discussion point during this year's Publications Council Meeting was the development of publications that support Joint Service programs. Currently, a different manual publication is developed for the U.S. Army, Navy, Air Force and Marine Corps per product. However, at this year's meeting the Council discussed how publications might meet the different procedural requirements for each of the Services within one manual per equipment piece.

The next Publications Council meeting will be held February 2011 at Redstone Arsenal in Huntsville, Alabama. ⚙️

Allen Swim, Meg Hower and Genna Rowe receive "Balancing the BSC" Award

On August 31, 2010, AJay Thornton, Director of the Engineering Directorate, announced the launch of a new Engineering Directorate Balanced Scorecard (BSC) Awards Program at the August Town Hall Meeting. Thornton honored three individuals from the Engineering Directorate with the first round of BSC awards. Allen Swim, Meg Hower and Genna Rowe were recognized for their outstanding contributions to the Directorate through their work on the 'Develop Leaders' strategic objective, with the "Balancing the BSC" Award.

The "Balancing the BSC" Award is given to employees who have made individual contributions to the BSC that can be linked to significant results and value added for the Engineering Directorate. It is intended to recognize individuals for outstanding long-term efforts demonstrated in multiple situations, and substantial BSC progress. To nominate co-workers for a BSC Award, download nomination forms online from the Engineering BSC SharePoint site at: <https://ecbcsharepoint.apgea.army.mil/sites/engineering/bsc/> and submit to BSC Awards Coordinator, Ed Bowen. For questions regarding the program, please contact Ed Bowen at ed.bowen@us.army.mil. ⚙️

Genna Rowe and Meg Hower smile for the camera as they receive the "Balancing the BSC" Award at August's Town Hall.



DoD Writing tips

The Engineering Edge encourages its readers to take note of the following DoD writing style tips, excerpted from the U.S. Naval Institute's August 2008 Proceedings magazine. The tips were featured in an article called War on (Buzz) Words by Kate Bateman and submitted by Dr. John R. Kennedy, Detection Engineering Branch.

General John W. Vessey, Jr. while serving as Chairman Joint Chief of Staff in 1984 remarked, "From my own experience, I can tell you, more has been screwed up on the battlefield and misunderstood in the Pentagon because of a lack of understanding of the English language than any other single factor."

EIGHT TIPS FOR DoD WRITING:

- Do not convert a noun into a verb.
- Do not convert a verb into a noun.
- Aim for sentences of less than twenty words.
- A paragraph is not a Power Point slide with extra words.
- Favor the concrete over the abstract.
- Consider your audience: generalist or specialists?
- Aim for no more than one buzzword in a sentence, and no more than two in a paragraph.
- Less is more. ⚙️

Mental Illness Awareness Week: October 3-9



Mental Illness Awareness Week (MIAW) is October 3-9. Every year since 1990 the U.S. Congress has acknowledged the first week of October as MIAW in recognition of the National Alliance on Mental Illness' (NAMI) efforts to raise mental illness awareness. Over the past 20 years, mental health advocates from across the country have joined together during this first full week of October to celebrate.

Beginning Oct. 1, PBS television stations in some communities will begin airing the documentary *Unlisted: A Story of Schizophrenia*. NAMI encourages community groups to use the documentary as a public education tool to spread awareness of mental illness.

This year's MIAW coincides with election season and in order to establish an active voice during the mid-term elections, NAMI has incorporated a "Mental Health Gets My Vote" theme in addition to the general NAMI theme, "Changing Attitudes, Changing Lives."

Additional information about non-partisan election activity can be found at www.nami.org/elections. For additional information regarding NAMI and MIAW visit www.nami.org. ⚙️

Army Core Values in Action: Afghanistan OP defense leads to Army's second-highest decoration

By Vince Little, Reprinted with permission from Maneuver Center of Excellence (MCoE) Public Affairs
FORT BENNING, Ga. (Sept. 8, 2010) — Sgt. 1st Class Jack White, an Airborne School instructor, received the Army's second-highest military decoration, the Distinguished Service Cross, Sept. 7.

In a ceremony on the hallowed ground of the 173rd Airborne Memorial at the National Infantry Museum, White was surrounded by his family, Soldiers he served with in the 173rd Airborne Brigade and the Fort Benning community.

The award was for his actions June 29, 2008, in Khost Province, Afghanistan, while serving as a squad leader with the Vicenza, Italy-based A Company, 1st Battalion (Airborne), 503rd Parachute Infantry Regiment.

That night, White and 18 other Soldiers on a tiny observation post near the Pakistan border turned back an enemy force of 105 Taliban fighters who attacked from a ridge with small-arms fire, RPK machine guns and rocket-propelled grenades.

"He brought them all back unscathed," said Command Sgt. Maj. Rick Weik, who was the battalion's command sergeant major and now fills that role at the 198th Infantry Brigade. "Very easily this could've turned bad. If it wasn't for his leadership, it would've."

FOR THE COMPLETE ARTICLE, PLEASE VISIT: <http://ww.army.mil/news/2010/09/08/44844-afghanistan-op-defense-leads-to-armys-second-highest-decoration/index.html>



Sgt. 1st Class, Jack White receives the Distinguished Service Cross for his heroic actions in Afghanistan.

PHOTO CREDIT:
Lori Egan, *The Bayonet*

The Engineering Edge

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Submissions: We need your stories, photographs, comments and suggestions. If interested, contact *The Engineering Edge* staff concerning ongoing and future products and submissions to *The Engineering Edge* Newsletter. Submit your stories or ideas via e-mail to ed.bowen@us.army.mil.



will be leaving ECBC. ⚙️

ECBC Engineering Directorate HR Tip of the Month: Outprocessing Checklist

All employees leaving ECBC must complete the Civilian Personnel Clearance Form EAP Form 1132. The form must be completed even if you are going to another Activity on APG. Contact Sabre Harper when you know you

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