



# Logistics Directions



Newsletter of

The Council of Logistics Engineering Professionals  
September – October 2015

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## From the President

It's been a challenging year for CLEP. As our membership grows we continue evaluating ways to enhance dialogue on logistics issues, develop engaging and rigorous educational & credentialing programs, and realize there are numerous logisticians that are making significant innovations and contributions to the logistics engineering community at large that deserve recognition. With that, there are several current activities within CLEP that I'd like to highlight and in some cases ask for your assistance.

### Elections and Awards

Our efforts often rely on many dedicated logistics professionals and leaders who devote valuable time and insight toward achieving our objectives. At this point in the year it becomes necessary to ask for members who can make a contribution to our mission to step forward. With regards to our current leadership, there are four positions open for nominations this year: Vice President - Operations, Vice President - Membership, Vice President - Communications, and Vice President - Administration. Descriptions of responsibilities and the nomination/election process are included later in this newsletter and I would encourage you to consider applying.

Additionally I maintain a Board of Advisors, currently consisting of Prof. Ben Blanchard, Dr. Wes Randall, Mr. James V. Jones and Mr. Steve MacDonald. The Board of Advisors to CLEP serves at the will of the President of CLEP and advises the CLEP Board of

Officers with regard to new trends within both government and industry and how the CLEP Board of Officers should tailor their programs to better serve the members of CLEP. If you would like to be considered for participation as an Advisor please feel free to contact me directly anytime at

[president@logisticsengineers.org](mailto:president@logisticsengineers.org).

CLEP periodically recognizes and honors individuals and groups who have advanced the discipline of Logistics Engineering through their endeavors, accomplishments, and stewardship in areas that include education, engineering, and management. We are currently accepting nominations for CLEP's Blanchard-Langford Award which periodically recognizes and honors individuals and groups who have advanced the discipline of Logistics Engineering through their endeavors, accomplishments, and stewardship in areas that include education, engineering, and management. More information on submitting nominations can be found later in the newsletter.

Lastly, we will begin highlighting an individual member's experience and accomplishments in the Newsletter. Be sure to look for one of your peers in each issue and reach out to them for assistance in your logistics endeavors!

### Mentoring and Credentialing

CLEP recognizes that an important part of contributing to the logistics community is through sharing and recognizing professional and educational experiences.

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## From the President, *- Continued from page 1*

To that end, CLEP is currently working to establish a formal mentoring program beginning next year. If you are interested in becoming a mentor or would like to be connected to a mentor stay tuned for more details. Our first step will be to publish the guidelines and process for the mentoring program which will occur during Nov/Dec 2015. Our next step will be to solicit mentees and offer several alternatives to participants. This step is planned for Jan/Feb 2016. Related to this is our initiation of a credentialing program. We are currently modeling a credentialing architecture that enlists help from various training partners and will evaluate and ultimately certify a logistician's expertise and contributions in terms of education, experience and peer recognition. If you would like to assist in this effort please contact me directly ([president@logisticsengineers.org](mailto:president@logisticsengineers.org)) or the Vice President of Education, Mr. Lincoln Hallen at [education@logisticsengineers.org](mailto:education@logisticsengineers.org).

### Symposia and Membership

Within the Newsletter you always find a

comprehensive listing of coming logistics related events. CLEP members and Officers are frequently attending these events but I would like to highlight our participation in this year's Defense Logistics-2015 hosted by Worldwide Business Research. I encourage everyone to engage with the participants during this event. One of the major undertakings of CLEP during next year will be to host a virtual Logistics Engineering Conference that includes real time training, exhibits and interaction with participants, vendors and educators. The Board of Officers is currently evaluating conference providers and will begin to develop content in the next month or so. If you have unique training requirements or simply desire a panel topic to highlight and discuss a current logistics issue please contact any of the CLEP Officers with your ideas or requests. A closing reminder than annual membership expires with the calendar year so please remember to renew and keep forwarding those ideas to our Board!

## CLEP's Scholarship Program

CLEP's Scholarship Program was established in 2010 to provide financial support to students who demonstrate promise in their academic and professional Logistics Engineering accomplishments, and to provide CLEP Members and their families resources to help off-set tuition in times of financial need.

### The Keith McClendon Scholarship

The Keith McClendon Scholarship is named in memory of Mr. Keith McClendon. Keith was employed with the US Army Materiel Command – Logistics Support Activity (LOGSA) in Huntsville, Alabama. His contributions to Logistics Support Activity (LOGSA) and to the Council of Logistics Engineering Professionals (CLEP) were numerous and unselfishly given.

THE KEITH McCLENDON SCHOLARSHIP APPLICATION IS NOW AVAILABLE

The following submission deadlines are:

- Summer Term – April 1st
- Fall Term – July 1st
- Winter Term – November 1st

Please send your request for the 2016 CLEP Keith McClendon Scholarship application to CLEP's Vice President, Education, Mr. Lincoln Hallen, at [education@logisticsengineers.org](mailto:education@logisticsengineers.org). All applications must be requested via this email process in order to be considered. Applicants will receive instructions and application in MS Word (™) format within 2 days of your request. Applications must be submitted in accordance with the application instructions not later than the submission deadlines above.

## Upcoming Events

The following is a listing of upcoming conferences, symposia, and events that are logistics related and may be of interest to CLEP members.

**Defense Logistics 2015**, December 1 – 3, 2015, Arlington, VA, (<http://defenselogistics.wbresearch.com/>)

For 14 years, Defense Logistics has been the go-to meeting place for discussing supply chain strategies of military, defense, and private organizations. Known for collaborative and interactive sessions, as well as high-ranking speakers, Defense Logistics remained strong during a time of government budget cuts, and is poised for an even larger audience in 2015.

Of particular interest this year, **CLEP** is supporting the event by taking an active role in developing the agenda, as well as contributing Logistics Engineering expertise as speakers and discussion panel members.

**RAMS 2016**, January 25 – 28, 2016, Tucson, AZ, (<http://rams.org/>)

The Annual Reliability and Maintainability Symposium (RAMS®) is the premier event in the reliability, availability, and maintainability engineering disciplines. Combining tutorials, presentations, CEUs, certifications, and networking into one week-long program, the RAMS® delivers cutting edge information to all technical industries.

Of note, **CLEP** members will be presenting papers during this event.

**The Logistics and Supply Chain Forum**, November 1 – 3, 2015, Scottsdale, AZ, (<http://www.logisticsforum.com/>)

The Logistics & Supply Chain Forum USA offers senior industry professionals the opportunity to meet potential new product & service providers; listen, as well as directly contributing, to industry thought leaders in conference and workshops; develop your personal network amongst industry peers.

**International Applied Reliability Symposium**, June 21 – 23, 2016, San Diego, CA, (<http://www.arsymposium.org/>)

Reliability engineering has never been more important than in today's economic environment. Whether you are just beginning your reliability journey or you are a weathered veteran, this conference has something for you. You will have the opportunity to network with others in your field while learning first-hand about real world applications by expert practitioners.

The ARS is one of the fastest-growing reliability forums and serves as a great way to further your education and shape the industry.

**32<sup>nd</sup> NDIA National Logistics Forum**, April 18 – 20, 2016, Washington, DC, (<http://www.ndia.org/meetings/6730/Pages/default.aspx>)

The 32<sup>nd</sup> Annual National Logistics Forum will bring together senior government and industry logistics policy officials and practitioners to address current challenges facing the delivery of logistics capabilities and services in the current and future severely resource constrained environment. NDIA's National Logistics Forum will highlight the challenges, attempt to identify the opportunities and assess future impacts on logistics support to Warfighters based on the known and anticipated fiscal constraints to be encountered in the coming years. A technology exhibition will highlight cutting-edge capabilities being developed to support our Warfighters in an efficient and effective manner.

**Annual INCOSE International Workshop**, January 30 – February 2, 2016, Torrance, CA,

(<http://www.incose.org/newsevents/currentevents/2015/01/13/incose-iw-2016---torrance-ca-usa>)

INCOSE kicks off each year with its annual gathering of the membership to discuss and advance the state of the art of systems engineering. Spend several days of intense activities centered around technical content with volunteers who meet electronically during most of the year. This is the time to collaborate and celebrate in person. The prestigious Working Group Award winners are named at IW, as is the recipient of the Johns Hopkins INCOSE scholarship; and, newly elected officers and directors are installed. The gathering is capped off with an annual INCOSE Foundation Wine Tasting to raise money for Foundation activities.

**2015 DoD Maintenance Symposium and Exhibition**, December 7 – 9, 2015, Phoenix, AZ, (The DoD Maintenance Symposium is co-located with the Defense Maintenance and Logistics Exhibition. View more information at [www.sae.org/defexpo](http://www.sae.org/defexpo))

The mission of the 2015 DoD Maintenance Symposium is to create an environment that enables attendees to share relevant information, identify critical issues, discuss key topics, and increase their awareness of Department of Defense maintenance initiatives. At this event, attendees have the unique opportunity to influence the future of the maintenance community. Here, your voice will be heard.

Join military, government and industry leaders, and maintainers from all levels at this distinctive, first class event – the maintenance community's primary venue for networking and content sharing.

**Diminishing Manufacturing Sources and Material Shortages (DMSMS) 2015 Conference**, November 30 – December 3, 2015, Phoenix, AZ, (<http://dmsmsmeeting.com/>)

The best practices in DMSMS will continue to push awareness and mitigation early in the design and development cycle, applying improved forecasting analytics and parts management across the services, utilizing the digital thread throughout the life cycle, and providing visibility into potential DMSMS threats along the life cycle. Anti-counterfeiting technologies and standards will comprehensively track inventories and actively provide trusted components. This conference will provide a balanced spectrum of DMSMS practices to improve DoD affordability.

Currently the DMSMS Conference will be conducted simultaneously with the Defense Manufacturing Conference (DMC), and both Conferences will join together their Exhibitions to bring the participants a diverse knowledge base in the manufacturing world and more networking opportunities, all in one location. Each Conference will still have their unique agenda structures and focus their program to the conference audience. However, each conference will have a registration procedure to attend, but one registration fee will gain you access to one or both of the conferences.



**December 1 – 3, 2015**

**Hilton Alexandria Mark Center  
Alexandria, VA**

<http://defenselogistics.wbresearch.com/>

## **Why Attend Defense Logistics 2015?**

- **Session Formats that Promote Interaction**

Concise Keynotes, Interactive Discussion Tables, Networking Activities and Awards Ceremonies  
 BENEFIT: During each session, our expert presenters and panelists will share key components of success and can answer your most pressing questions directly. Come together with 10-15 peers during small group discussions designed to provide concrete take-aways.

- **Invaluable Cross-Service Relationships and Idea-Sharing across the Defense Logistics Community**

Join us for Defense Logistics 2015 and tackle current and future logistics initiatives, technology innovations and advanced logistics strategies.

## **Education that You Can IMMEDIATELY Apply to Your Current Military Position.**

**In a resource constrained environment, here's how Defense Logistics maximizes your training budget:**

***It's impossible to put a price on the value of attending Defense Logistics!***

- Hands-On Expertise that Pays Immediate Dividends to the Job at Hand.
- You and your staff will be better prepared to meet the current and future needs of logistic operational systems.
- The Priceless Value of Developing New Relationships.
- Meet with senior leaders, share strategies and create a lasting network that will support you for year's to come.
- Training and Investing in Professional Development.
- There is no other single venue that will provide the variation and depth of educational training to develop your professional skills.
- You're Not Just an Attendee; You're a Contributor and Participant at Defense Logistics.

The Defense Logistics training program is built to incorporate attendees into the discussions through interactive and engaging session formats.

**Register Today at:**

<https://register.wbresearch.com/srspricing.aspx?eventid=1001174>

## "Why Does Europe Matter?"

By Capt. David A. Shealy, SC, USN

Let's begin with why is U.S. European Command (USEUCOM) here? Tracing back to the first Supreme Allied Commander (SACEUR), Gen. Dwight D. Eisenhower, USA, USEUCOM has a storied history of ensuring the peace and stability of Europe for more than half a century. During the height of the Cold War, more than 500,000 service members were stationed in Germany alone to defend against the USSR charging through the Fulda Gap. Today, we have less than 90,000 in the entire area of operations (AOR). As the only permanently forward deployed Combatant Command (COCOM) in their own AOR, EUCOM has a unique opportunity to train and fight at home.

### USEUCOM Mission

"U.S. European Command conducts military operations, international military engagement, and interagency partnering to enhance transatlantic security and defend the United States forward."

Even as U.S. policy and military focus shifts to the Pacific, EUCOM remains an important capability for logistical support to six geographic and functional COCOMs. A brief study of a few U.S. and coalition operations around the globe demonstrates "Why Europe Matters."

- OIF/OEF: Europe has been and will continue to be the gateway to Southwest Asia. In Feb 2014, the transit center at Mihail Kogalniceanu, Romania (MK) was fully operational and as of March 15, 2015, more than 171,000 passengers have processed in and out of CENTCOM theatre. Furthermore, the Landstuhl Regional Medical Center (LRMC), a Role 3 medical center in Germany, has been the principle facility for life-saving medical operations for the past 13 years.
- Operation Unified Protector (OUP): A NATO operation where our allies took the lead in the actual fight in Libya and the U.S. took on a support role. Whether it was providing millions of gallons of JP5/8 in the air, at sea via UNREP, or Foreign Military Sales (FMS) of more than \$113 million in Precision Guided Munitions (PGMs), the U.S. is the only nation in the world who could have enabled our allies to fight.
- European Reassurance Initiative (ERI): A resurgent Russia clearly demonstrates why having a mature logistics infrastructure in theater matters. While Europe has seen a major drawdown in personnel since the end of the cold war, the majority of the logistics capability remains. This capability allowed forces to deploy rapidly to Poland and the Baltic Nations without reliance on logistical support from thousands of miles away.
- Special Operations Missions: Operators are global in nature, but the majority of their missions in recent years involved support from Europe. Details are classified, but none of the news stories would have happened without the robust logistics support from EUCOM and its components.

- War Reserve Stock Allies-Israel (WRSA-I). The U.S. maintains 1.2 billion in stocks held on the U.S. balance sheet, and prepositioned in Israel to support various contingencies. In the most recent fight in Gaza, EUCOM demonstrated our capability to provide very quick and robust support for a wide range of operations for one of our closest and most important allies.

A mind's eye view tells the story even better. Picture a map/chart of the Mediterranean. Find Crete in the East Med. Place a dot in the Med 100NM south of the island. Next, use your nautical dividers (from OCS/USNA/ROTC) to draw a circle with a 1,000 NM radius. Start with Israel at three o'clock and work your way around your circle. You will find most of the U.S. and ally hot spots are well within the circle. Gaza strip, Egypt, Libya, Kosovo, Eastern Ukraine, Crimea, Georgia (South Ossetia and Abkhazia), Northern Distribution Route (NDN), Iran, Iraq, Horn of Africa (HOA) and Syria.

### Is Europe and NATO a direct U.S. National Interest?

- Europe + U.S. = 50 percent of world's GDP
- NATO economies account for nearly 33 percent of world trade flows
- 33 percent of trade across the Atlantic are intra-company transfers
- Most foreigners working for U.S. companies are European, likewise, most foreigners working for European companies are Americans
- In 2011:
  - Europe invested ~\$125 billion in U.S., eight times more than China
  - U.S. invested \$220 Billion in Europe, while divesting in China

Today's SACEUR, Gen. Philip M. Breedlove, USAF, faces some of the same challenges as Gen. Eisenhower did in 1945 just after World War II (coalition building, economic stability, etc...). However, the logistics infrastructure from basing to fuel pipelines in Europe provides a robust support network for both the U.S. and our allies/partners. The continued support of our NATO allies and non-NATO partners will be the foundation of many operations to come. This capability is a "crown jewel" and must be maintained to support worldwide operations in pursuit of U.S. political and national security interest.

So, "Why Does Europe Matter?" Many of our closest allies and most important partners are in Europe. No longer focused on rebuilding Europe after WW II, they share our interest and values of individual freedom, open markets, international order, and are willing to join a coalition to protect these interest and values.

Finally, most of our culinary treats originated in Europe and must be preserved. After all, what would football be without pizza and beer!

*Capt. David A. Shealy is the Deputy Director, Logistics Directorate (J4); U.S. European Command, Stuttgart Germany*

## Trickle-down logistics

By Steve Geary, DC Velocity  
www.dcvelocity.com

When you think about innovative organizations, what comes to mind? Amazon? Facebook? Apple?

If you're a logistician, the military—yes, the people who brought us the \$435 claw hammer, the \$640 toilet seat, and \$7,600 coffeemakers—should be on your short list.

Throughout history, the defense establishment has led the way in developing and implementing crucial tools and practices that have eventually seen widespread adoption by the business world.

The Department of Defense (DOD) has been a relentless early adopter of new logistics technologies and strategies. But in many cases, it has been more than just an early adopter; it played a major role in the innovations' fundamental research and development. What follows are just a few examples.

- **Intermodal freight and containerization.**

Containerization and intermodal transportation are deeply embedded in the way the world moves goods today. The commercial breakthrough for containers happened in the mid-1950s, brought about by visionary trucking executive Malcom McLean. After building and selling a successful motor carrier operation, McLean Trucking, he purchased the steamship line U.S. Lines and led the way in developing the containerships shippers now take for granted.

McLean deserves enormous credit for that. But in fact, the concept of containerized transportation originated with the U.S. Army. In the latter years of World War II, the Army used something it called "transporters"—standardized boxes that were really mini-containers—to speed up the loading and unloading of cargo ships ferrying goods between the U.S. and Europe. When the Korean conflict erupted, the military started using the "transporters" for sensitive military equipment heading to the Pacific Rim as well. In 1952, the Army adopted the term "CONEX," short for "container express," to refer to the transporters. Late that same year, the first major shipment of CONEXes, containing engineering supplies and spare parts, moved by rail from Georgia to the Port of San Francisco and then by ship to Yokohama, Japan, and on to Korea.

So, Malcom McLean ran with the idea and created an industry, but containerization and intermodal started with the military, not

McLean.

- **Roll on/roll off cargo ships.** Intermodal carriage and containerization are not the only transportation innovation we owe to the World War II-era military.

In the fall of 1946, the Atlantic Steam Navigation Co.'s *Empire Baltic*—a seagoing roll on/roll off (Ro/Ro) cargo ship with a built-in ramp—sailed from Tilbury in the United Kingdom to Rotterdam loaded with 64 vehicles for the Dutch government. Thus began the first commercial Ro/Ro service, which relied on a fleet of three ships: the *Empire Baltic*, the *Empire Cedric*, and the *Empire Celtic*.

The Atlantic Steam Navigation Co. didn't own the ships, though.

The Ro/Ros were leased from the UK's Royal Navy, which used the specialized cargo ships during the Normandy landings in 1944.

Known as LSTs, short for "Landing Ship, Tank," the vessels were the first purpose-built seagoing ships enabling road vehicles, like trucks, jeeps, and tanks to roll directly on and off. For the D-Day invasion, many of the LSTs were loaded in the United States and unloaded on the beaches of France. From this military innovation grew the roll-on roll-off ferry cargo ships of today.

- **The Internet.** The Internet is now so ubiquitous, so essential to business operations, that it's easy to forget how recent a development it is. It grew out of work carried out at the Stanford Research Institute (SRI) and the University of California, Los Angeles (UCLA) with funding from the Department of Defense. The Advanced Research Projects Agency (ARPA), renamed the Defense Advanced Research Projects Agency (DARPA) in 1972, oversaw the effort.

The first Internet message was sent over the wires from UCLA to SRI on Oct. 29, 1969. By the mid-1990s, the original network was decommissioned. By that time, there was

no further need for DOD involvement.

Commercial Internet service providers (ISPs) were off and running, and the rest is history.

- **Automated freight payment.** In 1998, the Department of Defense evaluated the benefit of re-engineering the freight payment process and abandoning the use of military manifests and government-defined bills of lading. That same year, DOD went all in with a commercial off-the-shelf solution from U.S. Bank called PowerTrack. Not only did this support an emerging commercial capability with millions of dollars a year of DOD funds, but it also helped legitimize the overall market for automated freight payment systems. Even if you don't work with U.S. Bank, if you use an automated system, you have DOD to thank. A rising tide lifts all boats.

### WHAT'S NEXT?

And these are but a few examples. We could also mention the military's groundbreaking work with radio-frequency identification (RFID) technology, global positioning systems (GPS), and even the Internet of Things.

As for what's next, innovations in military logistics will keep on coming, and commercial applications are sure to follow. Delivery drones are already in use at the Marine Corps.

Driverless cargo trucks are being tested by the Army. Field-deployable 3-D printing capabilities went forward in Afghanistan.

More innovations—some still on the military drawing board, some in development—are now taking shape. The Army is rolling out leading-edge virtual reality combat simulators to train people in battlefield conditions without an actual battlefield. Perhaps someday we'll train truck drivers the same way.

What the military has learned over the years is that creativity by itself is insufficient, that better is sometimes not good enough. The drive for different—innovating an entirely new approach—may be what's required to win the battle, or even the war.



You may not think of the military as a wellspring of logistics innovation. But the Defense Department has a long history of developing (and implementing) cutting-edge tools. Here are just a few examples.

## Everything Must be Ready for the Mission to Succeed

By Jay Levine

When it absolutely, positively has to be ready to go, whom do you call? When the location was New Zealand and the platform was the Stratospheric Observatory for Infrared Astronomy, Daryl Townsend had the answers for the aircraft. Townsend, SOFIA aircraft maintenance and logistics chief, had the responsibility of keeping the NASA 747SP ready to fly.

It was the SOFIA program's first deployment to the Southern Hemisphere where the focus was on astronomical phenomenon that can't be seen well - or at all - from the Northern Hemisphere. However, plans were put to the test July 17 when an aircraft system failed that required the rapid delivery of equipment and personnel.

Enter Matt Reaves, who is the SOFIA platform lead instrumentation engineer. When the call came that there was trouble, he headed down to the outpost in Christchurch, New Zealand. "I had three laptops shipped to meet me in Christchurch that could provide alternate methods of real-time data monitoring. After we found the best locations to place the two required

laptops, the avionics technician crew did an exceptional job installing them while still accomplishing their normal maintenance and flight preparation tasks. I reconfigured the data-processing applications and created display pages to meet the bare minimum data monitoring requirements. It took two-and-a-half days to bring back the ability to see the data needed for flight and post flight," Reaves explained.

The logistics staff members must have invested in a 55-gallon barrel of pain relievers, as it's not simple to plan for parts and people to travel halfway around the world. Logistics plans were detailed to cover anticipated challenges and fortunately, Townsend said, there were few major challenges that required items that were not on hand. Had there been those kinds of issues, the logistics plan included expedited shipping, vendors to tap and methods to pay for it quickly. Townsend also credited Valerie Jones, SOFIA maintenance logistics lead and Rosalia Toberman, Dryden Aircraft Operations Facility procurement officer lead, for invaluable work on logistical support.



While it was summer in California, where the SOFIA is routinely based, it was winter in the Southern Hemisphere during the New Zealand deployment.

Image Credit: NASA / Carla Thomas

"We have certain parts identified through experience and through a United Airlines logistics plan that included the failure rate of each component. We put it all together and the components that have a known high failure rate that we can actually repair in the field are in what we call a fly away kit for the aircraft," Townsend said. When the SOFIA team returns in 2015, Townsend said the challenges with customs in New Zealand will go smoother. The team will benefit from knowing how the customs process



Michael Toberman discusses with Andrew Fischer plans to divert the SOFIA to Auckland, New Zealand, because of weather concerns during the flying observatory's return from a 10-hour mission.

Image Credit: NASA / Carla Thomas



Daryl Townsend, the SOFIA aircraft maintenance and logistics chief, left, and Andres Hernandez, a SOFIA crew chief, wait for a forklift to bring up the cryogenic gases and servicing equipment.

Image Credit: NASA / Carla Thomas

## Everything Must be Ready for the Mission to Succeed – Continued from Page 7

works and from relationships developed during this deployment. Townsend said he would also look into improving the ability to meet a more catastrophic challenge, such as developing a capability to have a spare engine available.

The first challenge to a Southern Hemisphere deployment was deciding where to base the SOFIA. Locations early on included South Africa, South America, Australia and New Zealand. The best case was made for New Zealand, where the Christchurch Airport had an outpost for the U.S. Antarctic Program that isn't active in the area's winter season. The U.S. Antarctic Program uses Christchurch as a staging area for sending people and supplies down to the McMurdo Station, which is a U.S. Antarctic research center. "They conduct the majority of their research in the Antarctic summer, that's

why the facilities in Christchurch are not used in the Southern Hemisphere winter," said Michael Toberman, the acting SOFIA deputy program manager and mission manager for the deployment.

The location made logistics easier on the ground and created a climate for success, he added. Speaking of climate, it was chilly there - 30 and 50 degrees Fahrenheit, he said.

With a location determined, Toberman began to build the foundation of the deployment. Months prior to the deployment, items like aircraft air conditioners, tires, power carts and parts were shipped to the New Zealand destination.

In addition to being the first Southern Hemisphere deployment, flying three missions in three days was a first for the program. This was a feat repeated each of the three weeks they were based in

New Zealand, for a total of nine flights. That required two flight crews in order to safely ready the aircraft to fly the following day, Toberman added.

"It takes a lot of coordination with a lot of people," he said.

A non-stop trek from Los Angeles International Airport to New Zealand is roughly 12 hours of flying, he said. Crossing the International Dateline means passengers land in New Zealand tomorrow and return to the U.S. on the same day as they depart from New Zealand.

The mission displayed the SOFIA team's abilities as the program nears the goal later this year of flying up to four missions a week, Toberman said. The observatory and its staff will be challenged as the number of flights and the varied science gears up, but this mission shows that the team is ready for these challenges.

## Logistician, highest-ranking civilian joins Hall of Fame

By AMC Public Affairs

Arthur R. Keltz, native of Pittsburgh, Pennsylvania, was selected for induction into the U.S. Army Materiel Command Hall of Fame, class of 2015.

Keltz served as the AMC principal deputy for logistics from July 1992 through March 1997, which was the highest-ranking civilian position in AMC at the time. The principle deputy for logistics position was changed to the assistant deputy to the commanding general in June 2001, and later changed to the executive deputy commanding general in fiscal 2003.

During his tenure, Keltz served under three AMC commanding generals: retired Gen. Jimmy D. Ross, retired Gen. Leon E. Salomon, and retired Gen. Johnnie E. Wilson.

He was recommended for the AMC Hall of Fame for his tremendous contributions to the core missions of AMC, ensuring superior technology, acquisition and logistics support to the joint warfighter.

The nomination package referred to Keltz as the "epitome of a dedicated federal executive."

Under Keltz's leadership, the Logistics Support Element was developed and implemented. The LSE is a rapid response organization designed to

provide tailored logistical support to military and civilian relief operations throughout the world.

This capability was used in support of relief operations during the Hurricane Andrew aftermath, operation Restore Hope in Somalia, Uphold Democracy in Haiti, and in both exercises and real world deployments in Southwest Asia

Even today the LSE remains recognized as a critical national defense resource.

Also under Keltz's guidance, a first-of-its-kind handbook was published which outlined the duties and responsibilities of both military commanders and civilian personnel during deployment. The handbook was later used as the model for other services.

After leaving AMC, Keltz served at the Defense Security Cooperation Agency.

DSCA Director then-Lt. Gen. Tome Walters presided over his retirement ceremony in 2001 and referred to Keltz as "a true professional. "All of us who worked with him know him to have a sharp mind and a wonderful sense of humor. He has a gift for bringing people together, even while working on the thorniest problems," said Walters.

Keltz has received honors and awards including the Senior Executive Service Presidential Rank Awards of both Distinguished and Meritorious Executive, two awards of the Secretary of the Army Decoration for Exceptional Civilian Service, the Secretary of Defense Medal for Meritorious Civilian Service, the National Defense Transportation Association President's Award, designation as a Distinguished Member of the Army's Transportation Regiment, the Army Meritorious Service Medal, the Army Commendation Medal, and membership in Phi Kappa Phi.



Arthur R. Keltz

## 405th AFSB establishes Logistics Support Team-Africa

By Steven Stanfill. 405th AFSB public affairs

VICENZA, Italy - Under cloudy skies and a brisk Italy breeze, the 405th Army Field Support Brigade formally announced the establishment of the Logistics Support Team-Africa under the leadership of Maj. Shawn Muder. The organization will report to the newly designated Army Field Support Battalion-Africa commanded by Lt. Col. Joe Greenlee.

The ribbon cutting highlighted Army Materiel Command's commitment to being the premier provider of readiness to U.S. Africa Command (AFRICOM) and U.S. Army Africa (USARAF) in support of a safe, stable and secure Africa. The LST will serve as AMC's single face to USARAF and the warfighter in Africa anticipating, collecting and communicating requirements. LST-Africa will also be capable in managing Theater Provided Equipment, advising on equipment readiness, providing Logistics Civil Augmentation Program support and providing a scalable quick response team to meet mission requirements.

Maj. Gen. Kevin O'Connell, commanding

general, U.S. Army Sustainment Command, Rock Island Arsenal, Illinois, and Maj. Gen. Darryl Williams, commanding general, USARAF, Vicenza, Italy, took part in cutting the ceremonial ribbon. "The organization is thrilled to formally announce our relationship and our role in enabling African Horizons with the Logistics Support Team-Africa

and the Army Field Support Battalion-Africa," said Greenlee.

African Horizons is a strategy that aids in prioritizing efforts, requesting and applying Army resources, directing specific activities in support of AFRICOM and improving core functions.



## Satellite system keeps commanders current on battlefield

By Jim Katzaman. MCSC Office of Public Affairs and Communication | Marine Corps Systems Command

It's an old lament among warfighters. No matter how well scouted, no matter how quickly you arrive, the battlefield has changed by the time you get there. An uncooperative enemy has moved on.

The commanding officer of a Special Purpose Marine Air-Ground Task Force spoke for many of his brethren when he said, "As an infantryman, it's very frustrating when you've fully planned a mission. Then after a long air transit to the objective area you get off the plane and find out everything is different ... rules of engagement, enemy locations, even the objective itself."

The MAGTF Command Control and Communications team, known as MC3, at Marine Corps Systems Command intends to rectify that problem, thanks to the new Hatch-Mounted Satellite Communication Antenna System fielded on three continents for Marine Corps aircraft.

MCSC, the only systems command in the Marine Corps, deployed the five highly complex airborne command-and-control systems within four months of



receiving funds. Known as HMSAS, the system answered an urgent need from the field in record time while still meeting all necessary acquisition processes and documentation.

"HMSAS provides secure voice, tactical classified network access, common tactical picture, secure chat and streaming

### Hatch-Mounted Satellite Communication Antenna System

Marines muscle the Hatch-Mounted Satellite Communication Antenna System into the hatch of a C-130 Hercules aircraft. HMSAS provides secure voice, tactical classified network access, common tactical picture, secure chat and streaming intelligence and reconnaissance video for commanders in the field.

intelligence and reconnaissance video along with unclassified network and public internet," said Basil Moncrief, MC3 team leader. "It's a powerful combat capability in a very small package."

## LIFT-OFF, SIGNAL ACQUIRED FOR NAVY'S FOURTH COMMUNICATION SATELLITE

By Steven A. Davis, Space and Naval Warfare Systems Command Public Affairs

After a two-day delay due to tropical storm conditions, the Navy's fourth Mobile User Objective System (MUOS) satellite launched at 6:18 a.m. EDT from Space Launch Complex 41.

MUOS-4, whose signal was acquired approximately three hours after launch, completes the initial operational constellation and provides near global network coverage for warfighters and combatant commanders. This array allows mobile forces, including submarines, surface ships and aircraft, to communicate around the world via the narrowband spectrum. User communities that will primarily benefit include ground forces at the individual soldier level but also include members of all services and special forces.

"The legacy satellite communication system allowed users to 'talk' as long as they were within the same satellite footprint," explained Navy Capt. Joe Kan, program manager for the Communications Satellite Program Office. "MUOS allows troops all over the world to talk, text and share mission data seamlessly without having to worry about where they are in relation to a satellite."

The program office falls under the Navy's Program Executive Office for Space Systems, which has responsibility for the MUOS program and is located at the Space and Naval Warfare Systems Command in San Diego.

The Internet Protocol-based nature of MUOS allows network access to classified and unclassified networks. This network access for deployed tactical users will allow the exchange of critical situation awareness and targeting information.

"With the launch of MUOS-4 we're going to deliver that worldwide coverage and communication service for users," explained Nina Tran, the program office's space division director. "The legacy payload we have on MUOS satellites allows a smooth transition to a newer, better MUOS capability. We are benefitting from providing the legacy channels for current users and we are exploring all the capability that MUOS has to offer."

MUOS is an architecture comprised of a five-satellite constellation - a fifth on-orbit spare to be launched in 2016 - four ground stations across the globe, complex software to manage the network and an integrated waveform for use with user radios.

According to the program office's technical director, Jim Parsons, it's the system's flexible design that allows rapid insertion of technology to keep the system up-to-speed.

"The nice thing about MUOS is that the ground system and terminals contain all the switching and routing technology," Parsons said. "The satellite remains unchanged over time and can allow technology insertion into the ground stations and the waveform over time to increase capability without having to make any satellite changes."

Cmdr. Pete Sheehy, principal assistant program manager, explained that 24/7, beyond-line-of-sight communications will greatly benefit ground forces needing aviation support.

"With MUOS, the population of disadvantaged users is going to shrink considerably," Sheehy said. "And that new population of folks who have beyond-line-of-sight communication are going to be able to do their jobs more efficiently and safely. It could be as simple as that one person who otherwise might not have had beyond-line-of-sight comms being able to say 'This is where I am. This is who I am and I need help.' And know that someone is on the other side to be able to provide that support."

MUOS is already providing legacy communications to combatant commanders via active satellites on-orbit. MUOS' advanced capability - Wideband Code Division Multiple Access - has been demonstrated in various environments, platforms and applications such as integration testing with the newest submarine antennas, Navy special operations scenario exercises and Air Force C-17 in-flight tests.

"In our testing we've tried to be as realistic as possible," said Jarratt Mowery, director of end-to-end system testing. "In several events we've brought uniformed warfighters in and given them training on the MUOS system and

operating its components. They were able to define the types of operations they would like to use the system and allowed them to exercise those operations in a realistic environment. Be that in vehicles driving around, in a forest with a thick canopy or even in airborne platforms."

An added benefit beyond the system's initial requirements is extending communications further north and south toward the polar regions. This polar coverage, up to approximately 85 degrees in the Arctic under peak conditions, is significant considering that wireless and satellite communications has always been a struggle at extreme north and south latitudes.

Over the next several days MUOS-4 will transition to reach its geosynchronous orbit location approximately 22,000 miles above Earth to begin initial on-orbit testing. The satellite's solar arrays and antennas will then be deployed. On-orbit testing will start for subsequent turn-over to the Navy for test and commissioning to service.

Two MUOS satellites, launched in 2012 and 2013, are already providing legacy communications capability from their geosynchronous orbits over the Pacific Ocean and the United States.

MUOS-3, launched in January, was accepted by the Navy in June after on-orbit testing. The third satellite is awaiting final testing before being accepted for operational use.

Ultimately, the constellation and associated network will extend narrowband communications availability well past 2025.

The Navy's Program Executive Office for Space Systems, located at the Space and Naval Warfare Systems Command in San Diego, is responsible for the MUOS program.

For more news from Space and Naval Warfare Systems Command, visit [www.navy.mil/local/spawar/](http://www.navy.mil/local/spawar/)



The U.S. Navy's fourth Mobile User Objective System (MUOS) communications satellite, encapsulated in a 5-meter payload fairing lifts off from Space Launch Complex-41. The MUOS 4 satellite will bring advanced, new global communications capabilities to mobile military forces. (Photo courtesy United Launch Alliance/Released)

## Satellite system keeps commanders current on battlefield - *Continued from Page 9*

Crisis response units for U.S. Africa and U.S. Central Commands needed such a capability to conduct mission planning, and command and control when flying to distant objective areas while embarked in KC-130J Hercules aircraft. These aircraft, along with the Marine crisis-response teams aboard those and adjacent MV-22 Osprey aircraft, are typically disconnected from intelligence updates, tactical data sources and each other while flying to a crisis hot spot.

That is no longer the case. Moncrief said the HMSAS satellite communications system with integrated crypto, command-and-control-type ruggedized laptops and tactical C2 software “provides all command, control and mission planning capability a crisis response team could want.”

After receiving the Urgent Statement of Need from Marine Corps Headquarters, the MC3 team immediately started contracting actions, engineering processes, logistics planning and management coordination. The effort was structured into an accelerated acquisition program but with a higher level of emphasis on safety and testing.

A key enabler and risk reducer was fielding the first HMSAS to the Networking On-The-Move lab at Point Loma, California. The lab system allowed for rapid integration of crypto systems and tactical software, enabling firewall access at the Marine base stations and “tunneling” into secure Defense Department networks. Work conducted in the lab provided high confidence the system would work in the field.

“I’ve always believed putting the NOTM capability in an aircraft would be huge,” said Maj. Keith Kovats, project officer for both NOTM and HMSAS. “The commonalities between the two systems let us move very quickly forward with HMSAS. It’s a colossal force multiplier for the special-purpose units.”

The most exciting part of the program for the MC3 team was the actual fielding to deployed Marines. Moncrief, Kovats and lead engineer Chris Wagner started by taking a team of contractor and Space and Naval Warfare Systems Command personnel overseas. There they conducted testing, training and fielding to the SPMAGTF Crisis Response (Africa) in Spain.



A Marine-contractor team installs the Hatch-Mounted Satellite Communication Antenna System onto the fuselage of a C-130 Hercules aircraft. HMSAS provides secure voice, tactical classified network access, common tactical picture, secure chat and streaming intelligence and reconnaissance video for commanders in the field.

These Marines initiated the original urgent need and were well-prepared for the MC3 team’s visit to the Spanish Air Force base where they were stationed. The seminal event in Spain was testing the HMSAS system in a KC-130J during flight with tactical radio links to accompanying Ospreys, which had not been done before. “The testing went about as well as it possibly could. All the preparation paid off,” Wagner said.

Spain’s weather was perfect during the team’s 10-day effort, but the next stop was SPMAGTF-CR (Central Command) in Kuwait. The MC3 team went to work upon arrival, quickly growing accustomed to working outside in the 110-degree heat, 20-knot winds and airborne dust.

The SPMAGTF Marines in Kuwait were highly professional and embraced the HMSAS capability immediately, according to Moncrief. The team wrapped up their trip in three weeks with a final test flight over the Persian Gulf that resulted in perfect system performance.

Moncrief said the success of new equipment training was particularly gratifying. Marines on both continents

learned how to install HMSAS in the aircraft and get all systems operating in about 30 minutes. Then they operated the HMSAS systems throughout airborne testing.

The MC3 chain of command was pleased with execution of the HMSAS AAP. The team finalized all documentation, decisions, deliveries, training and testing in less than four months after receipt of funding. In the end, the Special Purpose MAGTF commander was also happy.

“The HMSAS capability resolves our problem,” said the no longer frustrated commanding officer of the Special Purpose Marine Air-Ground Task Force. “I now get constant updates in the air. I can coordinate digitally and by voice with my Marines and higher authority while in route. It’s like having an airborne Combat Operations Center.” Maj. Gen. Kevin O’Connell (left), commanding general, U.S. Army Sustainment Command, and Maj. Gen. Darryl Williams, commanding general, U.S. Army Africa, unveil the new branding of the Logistics Support Team-Africa, as the commander, Army Field Support Battalion-Africa, Lt. Col. Joe Greenlee, looks on. (Photo by Steven Stanfill, 405th AFSB public affairs)

## Natick researcher collaborates with North Carolina State on textile technologies

By Jane Benson, NSRDEC Public Affairs

Army researchers are partnering with universities to improve Soldier capabilities and protection.

At the U.S. Army Natick Soldier Research, Development and Engineering Center, or NSRDEC, senior research biologist Kris Senecal is collaborating with North Carolina State University, or NC State, which has resulted in the development of nonwoven, multifunctional materials. Senecal partnered with NC State's Nonwovens Institute, or NWI.

In a separate effort, she is developing novel textile coatings using atomic layer deposition, or ALD, with Dr. Gregory Parsons, director of the NC State Nanotechnology Initiative.

"NC State University is one of the largest textile colleges in the United States," Senecal said. "The fact that Natick has a significant textile focus makes it very important that we continue to interact with NC State."

NWI is a consortium that encourages cooperation among government, private industry and academia. Senecal will be the chair of the consortium's Industrial Advisory Board's Executive Committee in 2016.

"Companies, such as Nike and Kimberly Clark, are involved," she said. "It's really a special consortium that is getting national attention."

Rather than being knitted or woven, nonwoven fabrics are made by connecting fibers with adhesives or by entangling fibers mechanically, chemically or thermally.

"Nonwoven materials include felt, cleaning wipes, filters for cars and air conditioners, or brake pads for your car," Senecal said. "As more demands come up for the warfighter, nonwoven materials could help solve certain needs. The institute is investigating nonwoven topics that we have a lot of

interest in, including conductive textiles and antimicrobial textiles."

Through the institute, NC State graduate students are involved in research work on projects selected by the companies involved.

"The students love the chance to do Soldier research," Senecal said. "The students are very well trained, and the work gives them real-world experience. We give them input and provide feedback, and we interact with the main professors, as well. In return, it gives us fresh perspective, and we can leverage the research that is accomplished through the NWI."

As part of her own research, Senecal will be working with nonwoven materials supplied from member companies associated with the Nonwovens Institute on textile capacitors. The goal is to provide lightweight materials for wearable energy storage.

"Soldiers will have extra power capabilities built into the uniform, with no added weight penalty," Senecal said.

Senecal's collaboration with Parsons on ALD textile coatings will increase capabilities on existing fabric systems. In addition to being the director of the NC State Nanotechnology Initiative, Parsons is an Alcoa professor in the department of chemical and biological engineering.

"This research area applies a deposited conformal coating that is in the nanometer range," Senecal said. "You can tailor fabric properties specifically for differing environments by applying metal oxides and/or organic coatings using this coating technology, yet not increase fabric weight."

Research indicates that coatings could be used to improve Kevlar protection, she said.

"I was looking at putting the coatings on Kevlar, to improve cut- and puncture-resistance, and at the same time not

degrade ballistic protection capabilities," Senecal said. "Initial results using ALD coating showed improvement on both cut- and puncture-resistance on Kevlar."

Coating technologies allow for the creation of multifunctional capabilities for the Soldier.

"The multifunctional capabilities include flame resistance, antimicrobial protection, and additional cut protection, as well as other capabilities," Senecal said. "You can tailor the coating technologies depending on what you need. The coating technologies can be added directly to an already existing uniform fabric."

"Working with Kris Senecal has been tremendous," Parsons said. "She is a highly-energetic and highly-creative researcher dedicated to new technology to promote Soldier safety and well-being. By sharing her passion with our group at NC State, she inspired us to find new solutions to protect Soldiers in the field from physical harm. She has helped teach students in my group the importance of DOD basic and applied research, and her insights push my students to address problems and create solutions well beyond the obvious next steps."

"It is great when something theoretical becomes everyday use," Senecal said.

"I love to do the research, but I actually love to see that it has an impact. If it can make the Soldier safer, more comfortable, without adding any weight, that's rewarding."

"Kris is an excellent research partner who is willing to take on and solve the most challenging problems," Parsons said. "Her skills in personal engagement and enthusiasm for her work make her a tremendous asset for our research group and for the Army in general."

# Air Force radar upgrades ensure situational awareness

by Patty Welsh, 66th Air Base Group Public Affairs

A Battle Management program to improve the reliability and maintainability of U.S. Air Force long-range radar systems reached full operational capability recently when all the operational long-range radar sites were certified and deemed suitable and operationally effective.

The AN/FPS-117 is a three-dimensional radar system that provides advanced warning and air traffic surveillance. The Essential Parts Replacement Program replaces four major subassemblies: the Maintenance and Control System, the Beacon system, the Uninterruptable Power Supply/ Communications Rack and Local Control Terminals, which allow remote monitoring, troubleshooting and control of the radars.

According to program officials, it also reduces the line-replaceable unit count by approximately 80 percent, easing maintenance and the number of parts on the shelf.

"Prior to the EPRP modification, the radars, which were originally installed in the 1980s, suffered from excessive parts obsolescence and diminishing manufacturing sources," said Capt. Nicholas Cusolito, former program manager. "The focus of the program was to eliminate many of the obsolete components in the radar and to ensure continued supportability through 2025 to meet NORAD mission objectives. Furthermore,

the modification provides the hardware necessary for the eventual implementation of Mode 5 [identification, friend or foe] capability."

More than twenty-five radar systems were upgraded, including the Hill AFB Engineering Facility, with the last site in Hawaii being returned to service in late June after all personnel overseeing operations and maintenance had been trained.

As many of the sites are located in locations that experience severe weather, the teams faced many challenges.

"Install teams had to brave exceptionally harsh conditions in the Alaskan and Canadian Arctic, including sub-zero temperatures, during the dead of winter in order to keep the install schedule on track," said Cusolito. "Once on station they were isolated and confined to relatively tight quarters for five to six weeks at a time and had to remain self-sufficient during that timeframe. Many members were not able to go home for months."

In addition, a change to the Canadian radar O&M contractor during the middle of installs was also a challenge. According to Cusolito, the team had to shift their focus entirely to the Alaskan theater until the new contractor was in place and up to speed.

He added that users in the field and the prime

contractor, Lockheed Martin Mission Systems and Training, also came up with innovative solutions to challenges faced during the installs, including how to move electronics cabinets, which weigh several hundred pounds each, up narrow stairwells without damaging the walls, cabinets or sensitive electronic equipment.

"Our exceptionally dedicated and passionate users out in the field were extremely flexible in adapting and accommodating to help solve the predicaments that came up," Cusolito said. "This truly was a team effort where all stakeholders contributed equally to the successful outcome of the program, allowing the capability to be delivered on time and well within budget."

And Cusolito said the improvements are showing their worth.

"It was critical that these upgrades got completed in order to maintain key situational awareness for the U.S.," he said.

From here, software updates will be ongoing. Also, a contractor logistics support program will be established to continue sustainment of the system's hardware and software beyond the current warranty period. During this time, the program office will also look at transitioning to organic sustainment of the hardware to meet the Air Force's core logistics capabilities and save on repair and replacement costs.

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