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SPACE CAPABILITIES HELP CREATE LASTING PARTNERSHIPS

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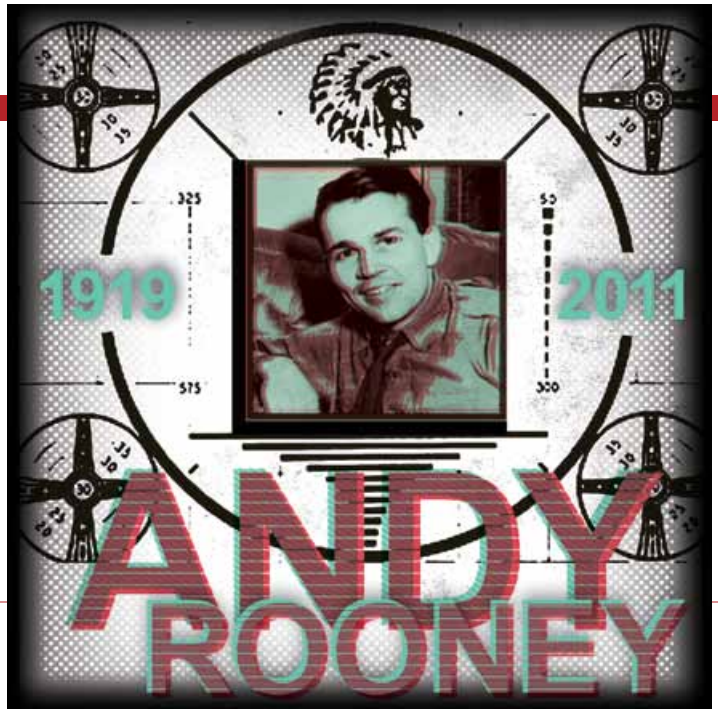
Straight Talk

– Reporting from the Trenches



Andy Rooney died. I always liked him because he questioned things and people of authority. I saw him on "60 minutes" as a disheveled elderly man who mostly needed to trim his eyebrows and seemed a bit grouchy and even unpleasant. He usually came up with some oddball piece challenging this manufacturer or that one for the size of a cereal box or other marketing ploy. But he always spoke his mind. He was never unwilling to take on powerful leaders, politicians or businesses for their slights on the average, everyday Joe. On television, he walked a mile and more in our shoes, so to speak, and he did it for 33 of his 92 years. He earned his way to have a masterful presence that will continue in memory. I can hear Rooney's voice telling the television camera right now how it would be impossible for him to have a presence if he were not here. That's the voice of reason that made him so popular with his audience.

For me, there has always been more to the Rooney story. In a way, he's even iconic. When I think of Rooney and his mannerisms and words, I think of WWII, the campaigns in the European and Pacific theaters of war. I think of my favorite General in the Army, General Dwight D. Eisenhower and my least favorites, Generals Douglas MacArthur and George Patton. I think of Stars and Stripes, the independent military newspaper overseas. I think of my talks with Bill Mauldin, who created the Pulitzer-winning cartoon series *Willie and Joe* while serving on the staff of the European Stars and Stripes with Rooney. I think of Soldiers yesterday, today and even in the future. And, I think of my dad who passed away years ago. The very first Soldier I ever knew was my father, although he had taken off the uniform long before I was born. Maybe that explains why I think of the average Soldier down in the trenches fighting when I consider all these things that Rooney triggers in my mind.

So it all gravitates – starts there, really – to the greatest generation that endured war. I have been a military journalist for all but three of my adult years and have come to know many Soldiers over the years. I read my first Stars and Stripes newspaper sitting on a curb in Frankfurt, Germany while on my way to my first job as a battalion journalist in 1979. From that day, I wanted to write for Stripes. It represented a level of professionalism and excellence in journalism that was meaningful to me. I did not know it then, but that attraction connected me to the past and my strong viewpoint on communication today. When I eventually did make it to the Stripes staff in Tokyo in the mid-1980s, I was able to experience just a touch of being a Soldier working the grind of a journalist for a daily newspaper.

The key to understanding the value of Stripes – Mauldin, Rooney, my dad, Eisenhower, MacArthur, Patton and WWII veterans – is to understand the newspaper's premise. Stripes began as a Union newspaper in the Civil War. Afterwards it stopped printing until World War I. In 1942, Eisenhower brought the newspaper back in Europe with Army Soldiers Mauldin and Rooney a part of the original staff. In 1945, MacArthur started an edition for the Pacific troops. Since then, both editions have published continuously for U.S. peacetime and combat troops serving overseas – to include conflicts in Korea, Vietnam, Bosnia,

I don't know how Rooney would feel about being this icon. He'd probably call me an idiot for writing about him in an Army magazine.

Kosovo, Desert Storm, Iraq, Afghanistan. Throughout, the purpose of Stripes has been to provide unfiltered news to the troops away from their hometown newspapers.

The idea of providing a free press for troops fighting for the freedoms of Americans is a poignant one. Eisenhower seemed to understand this. I remember talking to Mauldin in the early 1980s. He told me that Patton did not really care for his portrayals in drawings of unshaven and disheveled Soldiers in the trenches, but Eisenhower understood the value. Mauldin told me about Patton calling him to his headquarters one day to "chew my ass – he had his view, I had mine and mine had more stars." Mauldin explained that Patton felt the Army newspaper should carry only the party line story – that the images of Soldiers should be spit-n-polish in order to encourage the fighting troops to emulate the image. Later, I would learn that MacArthur seemed to have the same perspective and even ran the Pacific edition of Stripes with a tighter reign.

But the point goes deeper than viewpoints on what type information a military newspaper should print. What drives to the heart of the Rooney piece is that these talented Soldiers came together while men were fighting and dying to do something journalistic to help the cause. They covered the war. They questioned things, even authority. They knew – as did Eisenhower – that their journalistic work had to be credible, believable to have the meaning with troops. Through this approach, they brought the troops a little touch of home, a smile. Somehow or other, Eisenhower knew this was good. He knew his force would be better for it. It did not weaken discipline, I suspect it strengthened it. Sadly, through my reading about and understanding of both Patton and MacArthur, they seemed to lack this understanding.

I don't know how Rooney would feel about being this icon. He'd probably call me an idiot for writing about him in an Army magazine. He'd say I was over blowing the facts to make him seem like something he was not. But I guess I don't care. Rooney and my dad and Eisenhower and MacArthur and Patton and WWII veterans and the greatest generation each in independent ways represent something fresh as we move forward to face future challenges. While most are gone from this earth, we should remember the straight-talk effect they had on their surroundings.

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Mike Howard

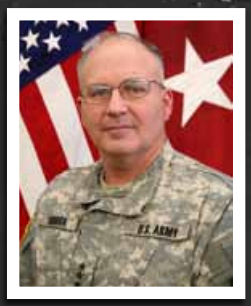
Space Professional,

Please answer as many of the following survey questions as possible and return to LTC J. Dave Price ASAP. Your input could make a difference in Army space.

1. What should be the vision of SMDC/ARSTRAT?
2. What should be the objectives and goals of SMDC/ARSTRAT?
3. What should be the Army Space strategic communications plan or narrative?
4. What should be the vision of the Army Space proponent and FA 40s?
5. What should be the objectives and goals of the Army Space proponent and FA 40s?
6. What should be the strategic communications plan or narrative for Army Space proponent and FA 40s?
7. What is the future of Army Space and or FA 40s?
8. How does the mission of the Army command or FA 40s need to change to get ready for the next 10-15 years in support of joint commands?
9. Other than STO/ACCM, where does the focus of battalion, brigade and Army Space support forces need to be? What kind of mission creep or mission change to you perceive?
10. Any other thoughts? Can I quote you? If not, your answers will remain anonymous.

Please reply to J. Dave Price at john.price1@us.army.mil or jdp3usa@aol.com LTC Price is currently a student at the Army War College at Carlisle, PA

Nov 10 at 6:17 pm · Comment · Like



LTG Richard P. Formica

Commanding General

USASMDC/ARSTRAT

USASMDC ARSTRAT

Streamlined, Steady, & Sharp

In my previous column in the Spring/Summer edition of the Army Space Journal I shared my testimony to the Senate Armed Services Subcommittee on Strategic Forces on May 11, 2011. The testimony was about the Army as a user of Space capabilities; the Army's Space strategy and policy; and the Army as a provider of Space capabilities. I shared the testimony in this column because I believe it provided a good summary of what the Army and U.S. Army Space and Missile Defense Command/Army Forces Strategic Command contribute to our nation's Space capabilities.

In this column, I will highlight the synergy derived from vertical-horizontal integration of our core tasks and the cumulative effect of a uniquely organized command that is geographically well-positioned to optimize support to combatant commanders and Warfighters.

As the Army's proponent for Space, high altitude, and global Missile Defense and as the Army's operational integrator for global Missile Defense, USASMDC/ARSTRAT has three core tasks which focus on providing capabilities today, tomorrow, and the day after tomorrow:

1) Providing trained and ready Space and Missile Defense forces and capabilities to the combatant commanders and to the Warfighter (today)–our Operations function;

2) Building future Space and Missile Defense forces (tomorrow)–our Capability Development function;

3) Researching, testing, and integrating Space, Missile Defense, directed energy, and related technologies (day after tomorrow)–our Materiel Development function.

Another key to the synergy we derive from integrating the three core tasks across functions is that we are geographically well-positioned to execute our mission.

This year, USASMDC/ARSTRAT aligned our organization along the three core tasks. The Operations function is responsible for providing trained and ready forces for today; the Capability Development function is responsible for building the Space and Missile Defense forces for tomorrow; and the Materiel Development function is responsible for researching the technologies for the day after tomorrow.

The Operations function is performed by our operational forces. The Deputy Commander for Operations, COL Timothy R. Coffin, is responsible for leading, training, and supervising our operational forces: 1st Space Brigade, 100th Missile Defense Brigade, the Astronaut detachment, and the Army Space Professional Development Office.

The Capability Development function is performed by the Future Warfare Center (FWC), led by Mr. Larry Burger. As the Army's force modernization proponent for Space, high altitude, and global Missile Defense, FWC follows the Army and U.S. Army Training and Doctrine Command (TRADOC) processes in building future Space and Missile Defense forces using the Doctrine, Organizations, Training, Materiel, Leader Development, Personnel, and Facilities construct. The FWC consists of the Battle Lab, Directorate of Combat Development, Directorate of Training and Doctrine, Decision Support Directorate, and the TRADOC Capability Manager for the Ballistic Missile Defense System and Space.

The Materiel Development function is performed by the Technical Center (TC), led by Ms. Debra Wymer. The TC is responsible for the directorates which research, test, and integrate Space, Missile Defense, high altitude, cyber, directed energy, and related technologies. In the TC are the Space and Cyber Technology Directorate, Emerging Technology Directorate, Rapid Transition, and U.S. Army Kwajalein Atoll/Reagan Test Site.

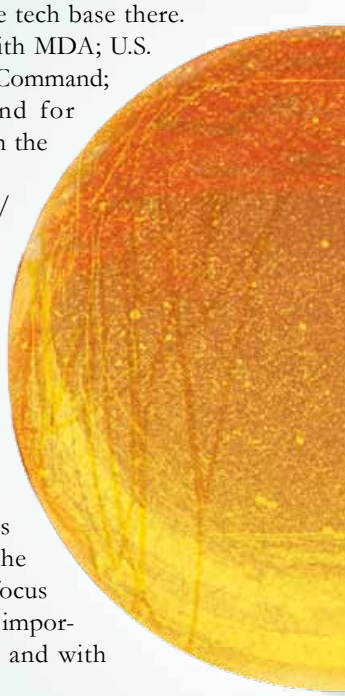
When we streamlined the command, we created a Deputy to the Commander. The Deputy works closely with the Chief of Staff to integrate across the functional areas associated with each of the core tasks by providing a vertical-horizontal view. The Deputy and the staff ensure the integration of the core tasks across the three functions of Operations, Capability Development, and Materiel Development.

Responding directly to the deputy are two special capability areas–the Chief Technology Officer (CTO) and Contracting and Acquisition Management Office (CAMO). The CTO looks internally across the functional components as well as looks externally to the command to develop the strategies and implementation of a "gate" process for all programs (technology, test, and demonstrations) in order to ensure effective inter-organizational efficiencies. CAMO manages active contracts (total value $17.6 billion) for USASMDC/ARSTRAT, the Army, and other agencies (fiscal year 2010 obligations: $2.4 billion). In fiscal year 2011 CAMO successfully underwent a yearlong review to demonstrate synergies, efficiencies, and benefits of realigning under the Army Contracting Command, resulting in the approval to realign under the Army Contracting Command-Redstone (ACC-RSA) effective Oct. 9, 2011. As part of ACC-RSA, CAMO will remain co-located with USASMDC/ARSTRAT in direct support of its mission. USASMDC/ARSTRAT retains its Head of the Contracting Activity (HCA) authority with the ACC-RSA Principal Assistant Responsible for Contracting dual-hatted to support both USASMDC/ARSTRAT and the Army's Aviation and Missile Command HCAs.

Another key to the synergy we derive from integrating the three core tasks across functions is that we are geographically well-positioned to execute our mission. In Huntsville we're co-located with the Missile Defense Agency (MDA); Army Materiel Command/Army Aviation and Missile Lifecycle Management Command; Program Executive Office (PEO) Missiles and Space; PEO Aviation; Missile and Space Intelligence Center; NASA; and the tech base there. In Colorado Springs we are co-located with MDA; U.S. Northern Command; U.S. Air Force Space Command; Joint Functional Component Command for Integrated Missile Defense; and again with the particularly Space-oriented tech base there.

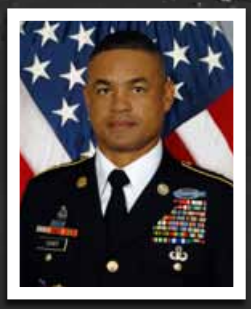
In summary, aligning USASMDC/ARSTRAT under our three core tasks and their related functional components, along with the cumulative effect of a unique organization and geographically well-positioned elements, is a synergy that optimizes support to combatant commanders and Warfighters.

Our nation is facing critical decisions in the military's future. Providing Space and Missile Defense capabilities to Warfighters while remaining disciplined stewards of the government's resources remains a critical focus for our command. This will be particularly important in an environment of tight budgets and with today's fiscal realities.



SECURE THE HIGH GROUND

The Sun Never Sets on USASMDC/ARSTRAT



CSM Larry S. Turner
Command Sergeant Major
USASMDC/ARSTRAT

Space Sys

A Must Have for the Modern Fight

Any Soldier who's had boots on the ground in a combat environment knows the importance of maintaining continuous situational awareness, of precisely striking an intended target, and of having reach-back communication capabilities. What many Soldiers don't know is that you need Space-based systems to enable many of these critical capabilities. This lack of knowledge is both a good and a bad thing. It's good because it means we've been able to integrate Space across the Army in a transparent manner. It's bad because we haven't done a good enough job of educating the Soldiers on the ground about capabilities they receive and capabilities that are available from Space.

The recently completed Talisman Sabre training exercise with the Australian military shows just how much Space brings to the modern fight. "Space Operations help the commanders visualize movement on the battlefield using commercial topographical imagery, but it isn't just about terrain features and maps," said MAJ Courtney Henderson, U.S. Army Pacific, Space Support Element, Fort Shafter, Hawaii. "Space capabilities enhance the military's ability to communicate, navigate terrain, engage the enemy with better accuracy, and protect its forces."[1]

Throughout Operations Enduring Freedom, Iraqi Freedom, and New Dawn, Space systems have given our Soldiers a strategic advantage and have helped keep them out of harm's way. The use of GPS and satellite imagery has gone from a "nice to have" to a "must have" mission requirement. We Space Enablers are very familiar with the advantage pre-

tems

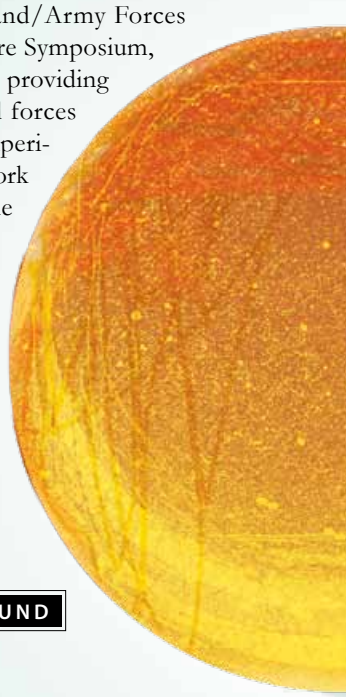
> **"Space Operations help the commanders visualize movement on the battlefield using commercial topographical imagery, but it isn't just about terrain features and maps."**
>
> **— MAJ Courtney Henderson**

cision navigation and targeting brings to the battlefield, but many Soldiers aren't aware that vital systems like Friendly Force Tracking can't work without Space. Satellite imagery provides critical terrain information to the Soldier on the ground. When plotting attack and escape routes, I'm positive our Soldiers would prefer to know that a bridge on the route has been destroyed by seasonal flooding before trying to cross it.

Soldiers constantly use these products with little to no appreciation of what it takes to produce them. Again, a good and bad thing. As MAJ Henderson noted, "Space Operations Soldiers retrieve and interpret data and develop products that help commanders navigate on the battlefield. Whether they're tracking convoys, establishing landing zones and distribution networks, or mapping critical infrastructure to locate obstacles, bridges, and crossings … ."[2]

Another great example of how Space Enablers contribute to the safety of service members comes from the annual Army Space Cadre Symposium which was held the week of Aug. 1-5, 2011, in Colorado Springs, Colo. At the conference, a former U.S. Central Command Space Support Element member told of a team from the Department of Agriculture which was in theater to assess current crop conditions and the status of irrigation systems. A Marine Corps unit would escort the Department of Agriculture team, and was plotting the route for the inspection which would transverse several hostile areas, when a Space Enabler asked exactly what was needed for the assessment. The Space Enabler provided current satellite imagery of the areas in question to the team. After reviewing the satellite imagery, the team determined that they could develop their assessment using the satellite imagery and would not have to physically visit the hostile locations. Space kept American citizens and their Marine escort out of harm's way.

Space has become an integral part of all Army operations. As LTG Richard P. Formica, commanding general of U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, said at the Space Cadre Symposium, "there's no going back." We must focus on providing resilient Space capabilities for our ground forces in order to make sure the Army doesn't experience "a day without Space." We also must work to educate the rest of the Army on the role Space plays. As LTG Formica noted, we must provide "Space training for the rest of the Army–at the schoolhouses, in exercises, NCO schools, etc." We'll do this by helping them add information on what Space contributes to their current lesson plans and exercises, not by creating new courses or new exercises. The goal is to help the Soldier get a solid grasp on the importance of Space to mission success.



SECURE THE HIGH GROUND

The Sun Never Sets on USASMDC/ ARSTRAT

Footnotes

[1] Corine Lombardo, "Space Systems Give Australians, U.S. Soldiers Edge in Talisman Sabre," Aug. 3, 2011, http://www.army.mil/article/62877/.

[2] Ibid.

Dr. Steven L. Messervy

Deputy to the Commander

USASMDC/ARSTRAT

Building Capabilitie

Today, Tomorrow, & the Day After Tomorrow

These days we see a lot of headlines and briefings that raise the issue of reduced budgets and being more efficient with our resources. "Do more with less … find new ways to do our mission effectively … we have to think differently." However, our Space and Missile Defense forces and capabilities continue to grow in importance to the Warfighter. Just like we saw during the Arab Spring, Japan's earthquake and tsunami disaster, and natural disasters in the United States, our high-demand, low-density capabilities are often requested to support the combatant commanders and ground commanders. Under an umbrella of uncertainty–in terms of both threats and resources–our challenge is to build and maintain the capabilities our Warfighters need. So what is U.S. Army Space and Missile Defense Command/Army Strategic Forces Command doing to meet those challenges, and how can we ensure that we are not only executing our missions effectively, but also preparing for the uncertain future?

The best thing we can do is ensure our team is trained and ready to deliver capabilities today and prepare capabilities that will meet the challenges of tomorrow. Within our command, Space and Missile Defense operational forces and professionals deliver capabilities 24/7/365 at 16 locations around the globe; the Future Warfare Center builds capabilities for future forces; and the Technical Center develops future technologies to address capability gaps.

As a result of our reorganization efforts in fiscal year 2011, these three components of our command are now streamlined. To summarize, we moved the TRADOC Capabilities Manager function out of Operations and placed it under the direction of the Future Warfare Center. We also merged two technology development centers–the Technology Center and the Test and Warfighter Solutions Center–into one Technical Center. Finally, the Commanding General created a

The senior leadership across the command has supported the LEMV team to ensure this fast-track project has the support it needs to provide a technology demonstration for the Warfighter in 2012.

Deputy to the Commander position to serve as an integrator across the three functional components of the command and the headquarters staff.

These three significant realignments will help USASMDC/ARSTRAT improve its organizational effectiveness and allow our workforce and leadership to better execute our core tasks in support of the Army, combatant commands, and the Warfighter. As we transition into fiscal year 2012, our focus will remain on our three core tasks, but with greater emphasis on improving command-wide integration.

We already are seeing the benefits of working across the functional areas of operations, capability development, and materiel development. For example, the Long Endurance Multi-Intelligence Vehicle (LEMV) pulls from subject-matter representatives across the command, to include engineers, budget analysts, program managers, military and intelligence analysts, requirements developers, modeling and simulation experts, and contracting specialists. Similarly, the senior leadership across the command has supported the LEMV team to ensure this fast-track project has the support it needs to provide a technology demonstration for the Warfighter in 2012.

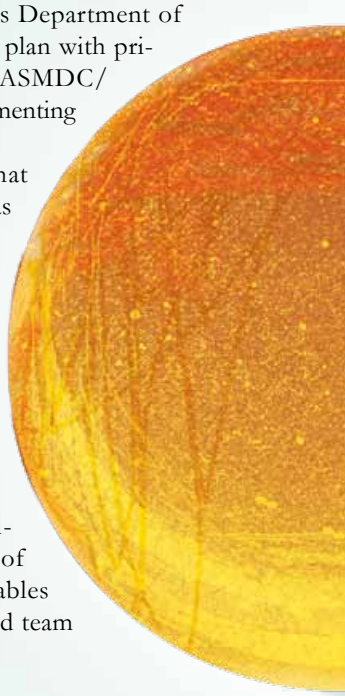
Another example of how our command is synchronizing across the three core tasks is the recent formation of the USASMDC/ARSTRAT Concepts/Capabilities Development Integrated Concept Team (ICT). This team, chartered by the Commanding General, consists of command representatives from the staff, Operations, Future Warfare Center, and the Technical Center to collaborate on Space and Missile Defense concepts, analysis, and requirements, to ultimately shape or deliver new Space and Missile Defense capabilities to the Army. The ICT is designed to lead the command's efforts integrating and synchronizing all concept, doctrine, organization, training, materiel, leader development and education, personnel, and facilities activities related to the Army's Space, high altitude (HA), and Global Missile Defense (GMD) proponent. As such, the ICT will develop the conceptual underpinnings for the advancement of Army Space, HA, and GMD support; identify the associated required capabilities and gaps; and prioritize the gaps and identify solutions. The solutions will focus on answering the Army's most critical military problems.

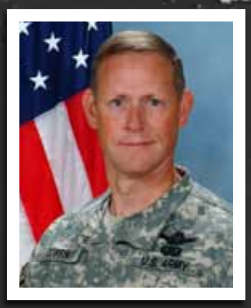
The ICT will be guided by an Executive Oversight Committee consisting of the Deputy to the Commander, Chief Technology Officer, Deputy Commander for Operations, Director of the Future Warfare Center, and the Director of the Technical Center. Using this ICT as a means to leverage the talent across our command, USASMDC/ARSTRAT can shape the Army's Warfighting concepts, doctrine, and capability portfolios, and our efforts are resource-informed, integration-focused, and outcome-based.

In emerging efforts such as the command's nanosatellite technology initiatives, led by the Technical Center, the command's functional teams are coming together to shape this effort and optimize the potential capability in support of the tactical Warfighter. As the command pursues a Joint Capability Technology Demonstration for tactical nanosatellites, the 1st Space Brigade is now involved to provide the operational perspective; the Future Warfare Center is supporting through studies and analysis, and concepts and architecture development; and the headquarters staff is engaged to help the project through external coordination and synchronization with other Army Space activities.

Finally, perhaps one of the best examples of success resulting from an integrated command effort was the recent publication of the Army Space Strategic Plan. When the effort was first tasked by the Army Space Council, elements of the command had multiple approaches for what the Army Space Strategic Plan should include. Through many iterations of command coordination with Headquarters Department of the Army staff, the Army now has a solid plan with priorities for its Space investment, and USASMDC/ARSTRAT will have a leading role in implementing the Strategic Plan.

These are just a few examples of what USASMDC/ARSTRAT is accomplishing as we emphasize integration across our unique command. Through the employment of our operations, capability development, and materiel development functions, we provide the Army with a core of subject-matter expertise in Space, high altitude, and ground-based Missile Defense. The Army and the Warfighter will soon reap the benefits of that expertise applied to the LEMV demonstration, the products from our ICT, the military potential of nanosatellites, and the prioritized deliverables from the Space Strategic Plan. Our talented team of Soldiers, Civilians, and contractors enables us to deliver capabilities today, tomorrow, and the day after tomorrow..





COL Timothy R. Coffin

Deputy Commander for Operations

USASMDC/ARSTRAT

People Powe

Finding the Return on Investment

Like most military commands, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command has a stated mission and vision. These statements are very helpful in defining and understanding the command's direction and purpose. A way to add meaning to these definitions, however, is to assess our professional capabilities to deliver on our *raison d'être*–meaning reason for existence. If we look across the various parts of the command that provide capabilities to Space and Missile Defense operations–doctrinal processes, organization, training, material/equipment, logistics, facilities, and people–we find the most important of these assets is the human element.

It is the people of the command who drive powerful contributions through their collective experience, knowledge, education, insight, and passion. With that in mind, it requires the investment of time, money, leadership, training, education, and care to develop people-based qualities. This is much the same as developing a technical solution like a missile interceptor takes in terms of time, effort, money, testing, and nurturing. Both types of investments are absolutely worthwhile and vital. In business, companies and employers make investments to recruit and retain employees, obtain new or upgraded equipment and facilities, and train and educate the workforce. In general, corporations make decisions along the way using "refund on investment" or 'ROI' as a metric. The same fundamentals apply when we–USASMDC/ARSTRAT–invest in its most valued asset, its people.

Our command vision highlights the fact that our workforce is talented and made up of Soldiers, Civilians, and contractors–all public servants. They are organized, aligned, and equipped to support three functional areas: operations or

Through investment, we gain the physical and knowledge-based human capital necessary to provide exceptional Space and Missile Defense capabilities today, tomorrow, and the day after tomorrow.

today, capability development or tomorrow, and materiel development or day after tomorrow. Let's informally designate the employees in those areas as Operators, Thinkers and Teachers, and Researchers and Designers, respectively. Equally important–and providing services across the entire command–are the members in our liaison offices and staff, contracting, and headquarters elements.

More than 840 of our Operators are providing day-to-day support to the Warfighter, either in place in the United States, forward stationed in Europe, Asia, or the Middle East, or deployed in an area of operations for the fight against terrorism. Operators in the command are primarily found in the 1st Space Brigade, 100th Missile Defense Brigade, selected portions of the staff and in the technical center operating radars on Kwajalein Atoll, and of course in our NASA astronaut detachment.

The center of gravity of the command's Thinkers, Teachers and Trainers is in the Future Warfare Center where they prepare the command to operate its U.S. Strategic Command and U.S. Army missions in the future. On the side of Army Service Component Command (ASCC) responsibilities, the team's activities look to providing future capabilities–forces and equipment in global strike, space, missile defense, cyber, and weapons of mass destruction. To meet the command's Army-level responsibilities, the team runs the Army's Space and ballistic Missile Defense "schoolhouse." They write doctrine and instruction manuals, teach courses at other military educational institutions, such as the Army War College, Command and General Staff College, and U.S. Military Academy.

Researchers and Designers grouped in the technical center investigate and develop equipment and technologies with potential for Warfighter use–again, with both Army and ASCC responsibilities in mind. Researchers and Designers are working more than 50 programs, creating solutions for our long-term needs as well as plugging the gaps in capabilities identified during our last decade of asymmetric warfare. They are doing this through advances in nanosatellites, solid-state lasers, medium- and high-altitude airships, advanced hypersonics, high-power microwave weapons, sensors, and many other technologies.

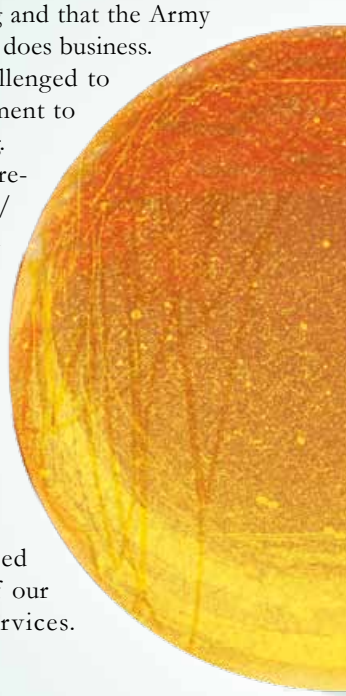
Each of these separate groups of experts could easily go their own way or collide across independent paths. Instead, the guidance of the command's common vision and the lubrication and glue provided by the supportive staff–like CIO, Logistics, Personnel, Intelligence, Operations and Resourcing–help bind us together. This creates the path to move in a forward direction toward a more capable future.

Investment in the people of the command takes many forms. A few examples include salary, benefits, professional development, buildings, equipment and supplies, and official travel. The command makes such investments realizing that they will have both immediate and long-term benefits. These investments pay off in the short term by enabling the workforce to fulfill our mission and vision. In the long term, they assist in establishing a solid base upon which to build the future. Through investment, we gain the physical and knowledge-based human capital necessary to provide exceptional Space and Missile Defense capabilities today, tomorrow, and the day after tomorrow.

It is true the United States as a nation is making some hard choices on government spending and that the Army is making significant changes to how it does business. While USASMDC/ARSTRAT is challenged to think differently as well, the commitment to our people remains strong and enduring.

A powerful and potent force is created when the people of USASMDC/ARSTRAT come together as a focused team. The force becomes even a more powerful tool when a cross-cutting team of all four chords–Operations, FWC, Technical Center and staff–is formed leveraging the different skills and perspectives of the command. The command's leaders look to each and every person for contributions to fulfilling our mission.

Lest I forget, we are also blessed with the critical support from some of our sister and even foreign military services. Now, for the first time, Australian officers and soldiers serve as key partners and allies in offering us the tremendous opportunity to expand our horizons and the richness of our personnel treasure. We salute you all and thank you for your service.



The Sun Never Sets on USASMDC/ARSTRAT

Larry Burger
Director
Future Warfare Center

iSpace

Operational Utility of Smart Phones

Market analysts estimate that more than 90 percent of all Americans have some type of wireless services contract and about five billion of the earth's 6.9 billion people have wireless access. Military studies show that not only do the majority of Soldiers entering the military own handheld devices, but they rely on them both in garrison and in combat. Some studies[1] show that Soldiers equipped with handhelds protect the devices as they do their weapons, a solid indication of how much they value these devices.

The Space and Missile Defense Battle Lab (SMDBL) in Colorado Springs has been experimenting with handheld devices, such as smart phones and tablets, and exploring ways to use them in Space operations and other mission areas. Based on the SMDBL's Scouts program, a continuing effort to identify shortfalls, gaps, and relevant technologies, an opportunity arose to co-develop technology jointly with Air Force Space Command (AFSPC). The AFSPC A3/Irregular Warfare Division and Space and Innovation Development Center (SIDC) approached the Battle Lab in the fall of 2010 with an idea for developing operational Space capabilities for handheld devices. The idea gave rise to a Joint Technology Exchange Program (JTEP) between SIDC and SMDBL to exploit handheld devices to serve Army, Air Force, Joint, and host-nation mission requirements.

The JTEP's initial project, named iSpace, was focused on developing Space Situational Awareness (SSA) functions on Android handheld devices. Less than a year later, SMBDL took its handheld capability to Panamax 11 (PMX 11), a military exercise that took place in Stennis, Miss., with foreign nation partners.

The Battle Lab experimented with a variety of handheld devices and operating systems and determined that the Android operating system (OS) offered greater versatility both in the number of different devices supported and the internal flexibility of the OS. Furthermore, Android has been selected by the Army's

The Battle Lab experimented with a variety of handheld devices and operating systems and determined that the Android operating system (OS) offered greater versatility both in the number of different devices supported and the internal flexibility of the OS.

Connecting Soldiers with Digital Applications (CSDA)[2] program as the OS of choice. SMDBL also leveraged relationships with national organizations and laboratories to understand how their "mobility" work and development roadmaps could be used for iSpace. SMDBL also connected with CSDA at Fort Bliss, Texas, and Fort Gordon, Ga., to ensure synchronization across programs.

SSA Android applications ("apps") currently being developed jointly with SIDC (based on porting of the Integrated Space Situational Awareness tool set) include Position Dilution of Precision and Circular Error Probable current status and predictions for GPS. Also under development is an app for Overflight predictions for unclassified imaging and communications satellites (Satellite Reconnaissance Advanced Notifications). Another emerging application will help determine selection and launch criteria for GPS-guided munitions by mapping GPS signal strength and interference conditions to requirements for the employment of specific mortar and artillery munitions and platforms.

The success of iSpace quickly led to another project, a variant of iSpace, called the Advanced Visual Information System (AVIS). AVIS is a tactically deployable handheld system that supports global Beyond Line of Sight (BLOS) communications, Situational Awareness–including imagery and basic mission planning, and Grey Force Tracking (GFT) in austere conditions (e.g., no cell phone towers and limited or no commercial power). AVIS uses Android tablets to support operations and in the absence of WiFi or cellular service, links them via Bluetooth to Iridium and Inmarsat satellite communications (SATCOM).

The kits are designed to be used by host-nation security and military forces supporting Foreign Internal Defense missions. They are built entirely from commercial, off-the-shelf components, are not classified, and have no export restrictions. AVIS systems, when brought to a country by U.S. military personnel, also support the larger objective of building partnership capacity. PMX 11 provided an ideal environment to test and evaluate early versions of the AVIS kit because of the bilateral nature of the exercise and the expertise of the participants. A team of SMDBL and SIDC members deployed to Stennis, Miss., in August 2011 to participate in PMX 11 and give U.S. and foreign Warfighters the chance to test the program's equipment and operational concepts.

The AVIS System

An AVIS system consists of a Hub Kit and one or more Edge Kits. The Hub Kit contains everything you need to establish a mobile headquarters, including a 7- or 10-inch tablet (such as the Samsung Galaxy) and a Broadband Global Access Network (BGAN) 700 terminal that provides Inmarsat connectivity to the Internet. The BGAN also serves as a WiFi hot spot at the hub. Imagery of the area is stored on 16-gigabyte SD cards and transmitted wirelessly to the tablet using an AirStash™–a mini storage device. Independent power consists of a 50-watt lithium polymer battery which can be recharged from a variety of sources including a 60-watt solar panel. Spare batteries, car chargers, and kinetic (hand-cranked) power solutions are also included in the Hub Kit. The iSpace team partnered with DigitalGlobe during the recent Panamax exercise to take advantage of live collects over the area of interest that could be processed and sent to the Hub tablets using Inmarsat as the transport.

Edge Kits are smaller and lighter than Hub Kits and are used by field operators at the team, squad, or platoon level to communicate with the Hub. Currently, Edge Kits are configured with Dell Streak handheld devices, Iridium modems, and a commercial tracking device. The current tracking device is the SPOT GPS which enables Friendly and Gray Force Tracking from Edge Kits by providing tracks to a central web service. The web service then can be accessed from anywhere, including at the Hub. Edge Kit power solutions are similar to those of the Hub Kits; a variety of batteries, car chargers, and kinetic devices make up the power solution. Using apps readily available on the Android market, data packets can be sent to and from the Hub and Edge Kits over Iridium and Inmarsat and displayed as tracks on the handheld devices. In this way, mission planners can route or re-route, track, or command operations from the Hub to the Edge.

PMX 11 Field Trials

PMX 11 is an annual U.S. Southern Command-sponsored exercise that focuses on ensuring the defense of the Panama Canal. It includes naval special operations forces from Panama, Guatemala, Peru, Colombia, Ecuador, Chile, and the Dominican Republic. During PMX11 SMDBL personnel MAJ Tim Haynie, Miller Belmont, Bill Coffey, and Jamie Dunlap equipped select

iSpace Page 16 >>

Debra G. Wymer

Director

Technical Center

A New Phas

Working Each & Every Day for Technical Superiority

As director of the Technical Center at U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, I lead an organization of scientists and engineers responsible for the development of advanced Space, Missile Defense, high altitude, and directed-energy technologies. We strive to provide unsurpassed Space and Missile Defense capabilities to the nation by, first and foremost, directly supporting the Warfighters on the battlefield.

This is an exciting time for our team, as we embark upon a new phase of the Technical Center at USASMDC/ARSTRAT. After careful deliberation, senior leaders found it to be in the best interest of achieving maximum productivity to merge the two organizations formerly known as the Technology Center and the Test and Warfighter Solutions Center into what is now known as the Technical Center. Adapting and evolving to meet the technological needs of the Warfighter is a constant challenge for USASMDC/ARSTRAT, and I am confident that this merger will increase effectiveness and efficiencies, compensate for reduced budgets, and allow us to continue to give our Soldiers the best possible support. The merger corresponds with the Commanding General's vision and guidance to align our operations with Department of Defense and Army priorities. Our fee-for-service business model dictates continual change, and by implementing this merger, we are remaining relevant to the needs of our most important customer, the Warfighter.

As the command's technical arm, the new Technical Center is focused on providing critical technologies that meet today's requirements and address future needs, planning and executing test and evaluation programs and performing related analyses, and most importantly supporting operational

The Technical Center has a rich legacy of technology development and transition, especially in the field of Missile Defense, and we remain proud of our heritage.

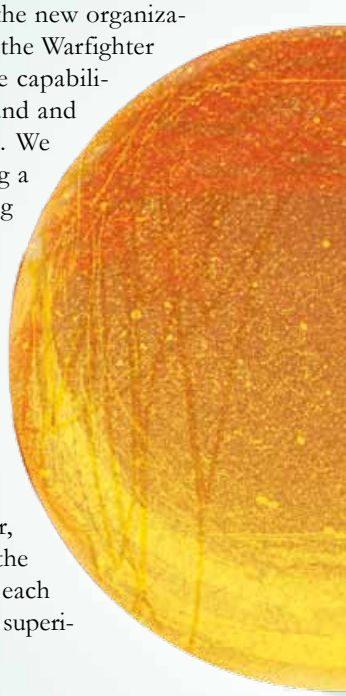
elements. The U.S. Army Kwajalein Atoll and Ronald Reagan Ballistic Missile Defense Test Site (USAKA/RTS), a subordinate element of the Technical Center, plays a key role in test and evaluation and in operational support. Not only is USAKA/RTS critical to the testing of Missile Defense, ballistic missile, and hypersonic systems, it also plays a vital role in accomplishing U.S. Strategic Command's Space Object Identification/Space Surveillance Network. Our Space and Cyberspace Technology and Emerging Technology directorates develop, integrate, and transition Space, Missile Defense, high altitude, cyberspace, and directed-energy technologies and conduct high-energy laser testing. Additionally, we have separate divisions that are dedicated to the transition of specific products to the Warfighter and our customers as rapidly as possible. Because our primary customer base is constantly changing, we are shifting to more in-house engineering work, which also allows each of the Technical Center subordinate elements to create and maintain closer relationships with their customers.

Another major advantage of shifting to more in-house engineering work is the opportunity to train new employees through hands-on experience. The Concepts Analysis Lab (CAL) division of the Technical Center is especially committed to hiring and training student interns and young engineers who work on summer breaks and part-time throughout the school year. The CAL offers young people the opportunity to gain technical hands-on work experience early in their career, such as performing ground station operations for Space and Missile Defense Command-Operational Nanosatellite Effect (SMDC-ONE). The SMDC-ONE is a low-cost, lightweight communications satellite, which was designed to provide a rapidly responsive, gap-filling capability to the Army's disadvantaged users. The first flight of SMDC-ONE was hugely successful and demonstrated the military relevance of a small satellite. We intend to fly several more SMDC-ONE satellites in various configurations and roles in the near future, and we also have new technology efforts ongoing to expand the capabilities of nanosatellites.

The successes of this small satellite program are expected to have a positive near-term impact on the Warfighter while giving us a fantastic opportunity to draw in many college students and young engineers who would like to gain experience in technical fields. This mutually beneficial relationship also allows the Technical Center to better prepare for the challenge posed by a retiring workforce. We work closely with the Student Temporary Employment Program and Science, Mathematics, and Research for Transformation Scholarship program to ensure that many of the engineering interns we hire will become full-time USASMDC/ARSTRAT employees in the future.

While our future workforce and the development of technologies to meet future needs are critical, we also are dedicated to getting systems into the hands of Warfighters without delay. An example of one of our rapid transition programs is the Long Endurance Multi-Intelligence Vehicle (LEMV). The LEMV is an unmanned hybrid airship approximately the width and length of a football field and stands seven stories high. This lighter-than-air platform will stay aloft for weeks at a time, carry more than a ton of payload, and operate at an altitude of more than 20,000 feet. It is equipped with radar to detect the movement and location of enemy vehicles or personnel, and that information is then downloaded to units on the ground. The program specifics include a very short 18-month development schedule that began in June 2010 and is being carried out by a group of engineers and analysts from USASMDC/ARSTRAT, other government agencies, and the Northrop Grumman team. The LEMV program will provide a tremendous capability to Warfighters.

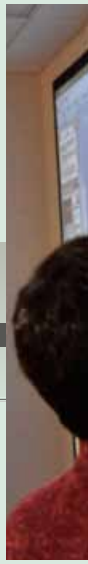
The Technical Center has a rich legacy of technology development and transition, especially in the field of Missile Defense, and we remain proud of our heritage. While my short-term priority is fully implementing the new organization, we will remain focused on providing the Warfighter with dominant Space and Missile Defense capabilities and supporting U.S. Strategic Command and the geographic combatant commanders. We are expanding our portfolio by developing a focused role in cyberspace and providing nontraditional and innovative capabilities to rapidly assess systems and operational concepts. We are making the directed-energy path to weaponization a priority and are shortening the timeline to bring Space and high altitude capabilities to the field. We will continue to seek new business opportunities that align with core missions and adapt to changing and emerging requirements. Within the Technical Center, we are dedicated to meeting the needs of the Warfighter, and we will continue to work each and every day to ensure continued technical superiority on the battlefield.



SECURE THE HIGH GROUND

The Sun Never Sets on USASMDC/ARSTRAT

From iSpace
>> Page 13



U.S. and Partner Nation (PN) "live forces" with AVIS kits in order to gain observations, insights, lessons, and recommendations into how best to employ and upgrade AVIS capabilities.

Throughout all phases of PMX11, AVIS provided BLOS situational awareness, GFT, and "SOS" personnel recovery capabilities to the U.S. Navy Special Warfare Development Group-4, Special Operations Command SOUTHCOM, and select PNs. Using AVIS kits, these forces conducted air, ground, and naval counter-terrorism, security, and surveillance operations throughout a variety of locations in southern Mississippi (which replicated an area of Colombia's Northwest coast), in and around the John C. Stennis Space Center, the Gulf of Mississippi, and Camp Shelby, Miss. Edge Kits were provided to Navy SEALS, Special Boat Teams, and select forces from the Chilean and Colombian navies. AVIS was used to collaborate between U.S. and PN forces to neutralize simulated threats from a terrorist organization. The devices allowed exercise participants to track and communicate with their forces throughout all phases of PMX 11.

The AVIS team partnered once more with DigitalGlobe during PMX 11 to collect, format, and disseminate unclassified commercial imagery. One of these efforts was a live collect over the PMX 11 area of interest that could be processed and sent to the Hub Kit tablets via Inmarsat.

AVIS Featured at SMD Conference

AVIS kits also were demonstrated at this year's Space and Missile Defense Conference in Huntsville, Ala., where the iSpace team shared a booth with fellow Future Warfare Center personnel. Of particular interest was the Iridium Short Burst Data device that was built in the Battle Lab to provide SATCOM capability to smart phones. The device features a battery, Bluetooth unit, and Iridium transmitter/receiver built into a small Pelican case. The device offers a choice of antennas, including a car-mounted antenna and an omni-directional antenna.

The Next Generation iSpace and AVIS

Based on the success of the iSpace and AVIS prototypes in fiscal year 2011, AFSPC is continuing fiscal year 2012 teaming and partnering with SMDBL. In addition to teaming with external organizations, SMDBL is cross-walking iSpace/AVIS development within the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command to include the Future Warfare Center's Future Innovations Group, Missile Defense Directorate, etc.

SMDBL will continue to work with CSDA app developers at Fort Gordon and leverage companies such as Google, Analytical Graphics, DigitalGlobe, GeoEye, Lattitude, and General Dynamics as well as national and other Department of Defense organizations. Future plans for iSpace and AVIS include support to Eagle Vision and experimentation/demonstration at venues such as the Coalition Warrior Interoperability Demonstration.

SMDBL continues to work closely with DigitalGlobe to provide an Android version of the Portable Dissemination of Geospatial Data, and with AGI to develop new SSA capabilities. High on the list for the upcoming year is the processing and dissemination of classified Space data and pursuing iSpace accreditation for classified use as well as developing more apps focused on the Space and Missile Warning missions.

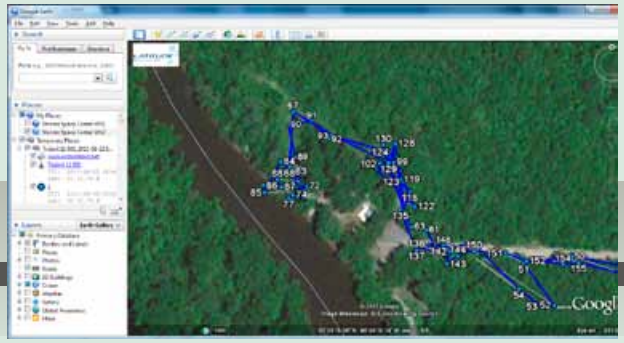
Emerging commercial technologies such as smart phones and tablets, new and improved power options, and the continuous miniaturization of once large devices offer enormous potential to today's military. If we can make handheld apps that support training, situational awareness, and operational readiness, then we can tap into a huge resource already available at very little cost. Further, if we can develop the means to support classified data at rest and transmission using small, self-sustaining compact kits, comprised of smart phones, tablets, and SATCOM devices, we can seriously reduce the huge mix of tools, laptops, network equipment, mobile ground stations, satellite dishes, batteries, and other technologies that Soldiers are obligated to carry around with them to perform their mission.

Footnotes

[1] Studies were conducted at Fort Bliss, Texas, by teams supporting the project known as Connecting Soldiers to Digital Apps.

[2] CSDA is sponsored by the Mission Command Center of Excellence and the Army CIO/G6, with support from U.S. Army Training and Doctrine Command, the TRADOC deputy commanding general for Initial Military Training, and other Army organizations, including the U.S. Army Space and Missile Defense Command/Army Strategic Forces Command.

SMDBL's Miller Belmont and Jamie Dunlap follow tracks from AVIS Edge Kits



Screen capture from the AVIS Hub Kit showing tracks of a SEAL Team and supporting PN forces

SMDBL continues to work closely with DigitalGlobe to provide an Android version of the Portable Dissemination of Geospatial Data, and with AGI to develop new SSA capabilities.

SMDC Soldier SFC Gabriel Cardenas demonstrates iSpace functions on a Samsung Galaxy tablet.

USN Lieutenant Sean Norton, NSWG-4, prepares an AVIS Edge Kit for operations in the recent PMX 11 exercise

AVIS Edge Kits fit in a camera-sized backpack

TaLKing SHOP

OPERATION NEW DAWN ENDS

Army Tactical and Operational Space Faces a Strategic Crossroads

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Partnerships prove essential during Operation New Dawn. *All photos are courtesy of USF-I Joint Combat Camera and DoD.*

EDITOR'S NOTE

This article resulted from a Space After Action Review June 24 at the Al Faw Palace in Baghdad, Iraq, by Space professionals serving in the Iraq Joint Operations Area. The review assessed the status of the roles, missions and functions of SSEs, Space integration and Space force structure in Army divisions and corps. Attendees included members of the Space Support Elements from U.S. Forces – Iraq from the 18th Airborne Corps, Fort Bragg, N.C., U.S. Division - North from the 4th Infantry Division, Fort Carson, Colo.; U.S. Division – Central from the 25th Infantry Division, Schofield Barracks, Hawaii; and U.S. Division - South from the 36th Infantry Division, Texas.

This article would not have been possible without the special effort of all the contributors.

Since the United States invaded Iraq in 2003, numerous Army Space professionals served with distinction in the Iraqi Joint Operations Area (IJOA). Army Space professionals have made significant and lasting contributions to both combat and stability operations during Operation Iraqi Freedom ending August 2010 and Operation New Dawn which ends this year. The purpose of New Dawn has been to support "Iraq's continued development into a sovereign, stable, and long-term, self-reliant strategic partner that contributes to peace and security in the region."

While the current experience and quality of the Army Space Cadre, both Space Professionals and Space Enablers, across the U.S. Army is unparalleled, contributions of the Army Space professionals during U.S. Forces-Iraq (USF-I) stability operations provides an excellent case study for professional assessment. Now is a good time to consider the maturing of the Space force that has occurred over the last eight years in Iraq. One way to consider Space operations officers today – those serving on the USF-I Space team supporting stability operations – are as utility infielders on their corps and division staffs. They each bring Space expertise to a variety of jobs critical to the effort.

Surveyed Space professionals anonymously responded that their primary missions during New Dawn included Integrated Joint Special Technical Operations (IJSTO) chief or planner, Alternative or Compensatory Control Measures (ACCM) program manager, general staff planner, monitoring the Space environment, and Information Operations planner. Additionally, every Space professional and enabler serving in a Space Support Element agrees that the IJOA is a mature theater. Five major Space force enhancement functions are well understood by the staffs: Communications; Position, Navigation and Timing (PNT); Intelligence, Surveillance, and Reconnaissance (ISR); Missile Warning; and Environmental Monitoring. An additional function that is less understood, but still equally important, is Space Control which includes Offensive Space Control, Defensive Space Control, and Space Situational Awareness.

3 QUESTIONS

BG Kurt S. Story in Iraq

What is the crossroad as you see it?

Story – For Army Space professionals, we must listen to the lessons learned from eight-plus years of war with deployments of Army Space units and personnel. These lessons can help us adapt our training, equipment and Army Space Force structure for the future. We must change to maintain our relevance into the future. The next war will not necessarily be like this war–especially if it is against an enemy with sophisticated Space capabilities. We must develop the training and capabilities to successfully operate in a denied, degraded, disrupted Space environment. In a full spectrum operation against a sophisticated adversary, Space professionals will be fully engaged in Space and in a lesser conflict or during stability operations in a mature theater–Space professionals will work across the warfighting staff as "utility infielders."

For the Iraqi people, the crossroad is when the Iraqi government and people have to make a choice after the retrograde of U.S. Forces is complete. The security agreement states that U.S. Forces must be out of Iraq by Dec. 31, 2011. The U.S. invested precious lives and national treasure to oust a dictator and allow the Iraqi people to enjoy freedom. It is now up to the Iraqis whether or not they will nurture the seed of democracy where people have a voice or whether they will backslide into days of the past.

Now that U.S. forces will be out of Iraq, what does that mean to us in terms of Space with the Iraqi forces?

Story – Space is not really in the consciousness of most Iraqis. Iraqis currently have no national Space program and they rely on others for both military and commercial space. Realize that the Iraqis do not yet have air or missile defense systems–military Space is not currently on their agenda. Iraqi forces will purchase Space support and Space-enabled equipment from other countries.

With this as a starting point, Space professionals need to help clearly define the role of Space in the Army's tactical and operational headquarters in the future. The options are: 1) maintain the current force structure and functions, 2) modify the force structure to accomplish current and likely future requirements, or 3) merge Space with related career fields to provide a strategic enabler or technical enabler staff generalists that shape integration of unique, technical, national capabilities in the operating force. To assist in the analysis of the options, this article begins with an overview of the evolution of tactical and operational Space in the U.S. Army and assesses the future in light of the U.S. Army organizational and proponency constructs.

Overview of tactical and operational Space evolution

Before 2005, the only Space operations officers or Functional Area (FA) 40s assigned within the operating force were majors assigned to Corps G3s – one Space professional per organization. Since 2005, the expertise that was organic to an organization has grown to a Space Support Element (SSE). This element now includes two FA40 officers in a division and three in a corps, along with a satellite communications NCO in each headquarters. The primary function of all deployed division and corps SSEs became that of managing Integrated Joint Special Technical Operations (IJSTO) and focal point programs classified with the Alternative or Compensatory Control Measures (ACCM) caveat. This was primarily out of operational need. It was a natural fit for FA40s since they had the required security clearances for IJSTO and co-locating the ACCM mission with the IJSTO vault made sense since it provided a secure location for ACCM operations.

This situation of the Space professional needing flexibility becomes the overarching theme that emerges from looking at the Army Space team in Iraq. The 2008 Spring edition of the Army Space Journal included a bellwether article *Successes from the Field: OIF V* that presented an informative overview of employing division SSEs and four recommendations. Based on the situation in 2010 and 2011, SSEs in New Dawn, and likely the rest of the Army, appear to have embraced these recommendations.

Space After Action Review June 24 at the Al Faw Palace in Baghdad, Iraq, by Space professionals serving in the Iraq Joint Operations Area.

- Get smart on Special Technical Operations and Alternative or Compensatory Control Measures
- Leverage corps Space Support Element and supporting Army Space Support Team
- Don't worry too much about the Space Support Element Toolset-Light
- Expect opportunities to do other things and do the best at them

In 2009, however, the Army established the FA29 electronic warfare career field and assigned it as the Army proponent for IJSTO. This means that division and corps electronic warfare officers will likely become responsible for IJSTO in the future. Since SSEs are currently responsible for IJSTO within virtually all U.S. Army divisions and corps, Army Space professionals find themselves at a crossroads requiring a strategic assessment and redesign of tactical and operational Space staff support.

To better understand this dynamic, it is necessary to understand the integration of Space capabilities into the Army since the 1990s. This will help in examining the purpose and factors that influenced the creation of the SSEs and Army Space Support Teams prior to military operations in Iraq.

In 1998, the Army began a critical phase of integrating Space capabilities into the Army by establishing the Functional Area 40 or Army Space Operations officer. At the time, there were many officers with the 3Y or Space Additional Skill Identifier signifying significant expertise in Army Signal, Military Intelligence, and Aviation branches. But that meant Space was a secondary skill and their assignments were not actually conducive to further development as a Space professional. Many felt this factor hindered Army efforts to work with the Air Force in developing Space systems and improving Space support to Army operations. So the establishment of Army Space moved the Army forward significantly in its desire to ensure the Army was a Space-enabled force. With the establishment of just over 120 FA40 billets and a Qualifications Course established in 2000 based in Colorado Springs, the Army entered a new phase of Space operations.

The going-in concept for this phase came from a concept U.S. Air Force General Howell Estes implemented – the Joint Space Force (JSF).

What do you see as the primary point of this article in relation to the Space community and Iraq?

Story – There are several take-away points:

- Army Space contributed greatly to and enabled our highly successful efforts in Iraq in both combat and stability operations. Space facilitates our ability to find, fix, and kill the enemy while enabling force protection of friendly forces.
- Army and Joint Forces rely heavily on Space-based capabilities to effectively operate.
- Army Space professionals and their families sacrificed a lot.
- Army Space matured greatly over the last eight-plus years of war.
- As a theater of operations matures, Space becomes normalized – or operationalized – so that Space professionals are not solely focused on Space, but contributing across all battlefield functions as utility infielders.
- Lesson learned in this conflict may or may not apply to a future conflict–especially against a sophisticated, Space-faring enemy. We must evolve to maintain our relevance.
- Army Space cannot rest on its laurels. We must posture ourselves for the future by adapting our Space formations and improving the training of our Space professionals.

I am extremely proud of the outstanding contributions and sacrifices made by Army Space Professionals in support of Operation New Dawn (OND). FA40s made significant and lasting contributions to United State Forces-Iraq (USF-I) combat and stability operations in support of "Iraq's continued development into a sovereign, stable and long-term, self-reliant strategic partner that contributes peace and security in the region."

To use an analogy, I consider Space Operations officers supporting OND to be "utility infielders," players on a baseball team who do not have a starting role on the field (not a primary staff officer), but one who is capable of playing more than one of four defensive infield positions: second base (J2) third base (J3), shortstop (J6) and less typical first base (J5).

Contributors wrote with the freedom to express the role of Space in OND as they saw it.

Estes, who served as the commander-in-chief of U.S. Space Command from 1996-1998, told his staff to "operationalize, normalize, and institutionalize" the JSF. One of the contributors to this article (COL (R) Glen Collins, then a U.S. Army lieutenant colonel) was responsible for implementing Estes' guidance. The solution was to identify precedents and paradigms used by the terrestrial Joint Forces from the Army, Navy, Marines, and Air Force and apply them to the Space Force concept. In a matter of a few years, the JSF implemented Space campaign plans, Space operational orders and, for the Air Force, Space tasking orders. All were based on proven joint doctrine. U.S. Space Command published a command-and-control concept of operations for Space Forces and developed the Space Battle Manager Core Systems (SBMCS) to maintain Space Order of Battle information on the Global SATCOM Support Centers.

This experience came to U.S. Army Space and Missile Defense Command in 2000 when Collins became the director of the Force Development and Integration Center. The same "operationalize, normalize, and institutionalize" Space philosophy from U.S. Space Command became instrumental in integrating Space into Army operations. All of these programs had the objective to make Army Space Forces like the rest of the Army. If it was good for the field artillery, infantry, signal, and other professional fields in the Army, it was good for the Army Space forces. The effort resulted in the following programs being initiated over the next years:

- Space Officer Qualification Course
- Space Force Management Analysis (FORMAL) and the establishment of the Army Space Cadre
- Establishment of 1st Space BDE, the 100th GMD BDE, the 1st Space BN, the 117th Space BN (CO NG), the 49th Missile Defense BN, and the 53rd SIG BN as MTOE units. All were TDA or didn't exist before.
- The creation and publishing of the Army Space Journal.
- The establishment and location of additional Space training courses in Colorado Springs with the goal of forming a virtual "Fort Space."

As these programs developed, they were very important in addressing an experience issue. Initially, FA40 assignments were concentrated in Colorado Springs within U.S. Space Command and U.S. Army Space Command. There was a single FA40 major assigned to the corps headquarters with additional reach back Space support provided by Army Space Support Teams assigned to Army Space Command. At the first FA40 Conference in 2001, there were many complaints from the corps FA40s that their G3 and other staffs didn't know how to best utilize their skills and that they often were assigned additional duties that basically relegated Space to a secondary priority. A major contributing factor was that most of the officers assigned to the outside units had minimal Space experience. Compounding that, leaders in the units where the FA40s were assigned had little idea how to maximize Space capabilities.

As the Army Space force grew, another problem was to address how to support the operational Army. The augmentation support for the corps came from an ARSST that did not routinely provide support during routine training and exercises. As a result, the ARSSTs were not well integrated with the supported corps when they arrived for deployments or the occasional large exercise. This problem was no different than other branches of the Army in integrating with the maneuver force, so Force Development Integration Center developed the concept of having a Space Operations Cell of FA40s that would be permanently assigned to the Army, corps, and division headquarters. To avoid confusion with the Special Operations Forces, the name was changed to Space Support Element. It was modeled on the Fire Support Element concept. Like the FSE, the SSE was intended to be the integrator of Space support, and a "plug" that augmenting Space forces such as an ARSST would connect through to the supported unit. The SSE both institutionalized and more importantly normalized Space support to the Army unit.

The work began to make the SSE part of the Objective Force, under development starting in 2000. In 2001, though, a critical demonstration moved the idea forward. Training and Doctrine Command (TRADOC) was building the Interim Division (I-DIV) as a transition step to the Objective Force. During a wargame, a question came up about using commercial satellite communication to support the division – would the necessary bandwidth be available. The senior military leader asked: "Exactly what satellites are available to support the I-DIV?" No one was able to answer him except Collins, representing Army Space. After briefing Space support for the I-DIV – including military and civilian satellite communication, the SSE concept was approved.

Army Space Support Elements were an integral part of the team training for Iraqi forces as part of Operation New Dawn.

As the command built the manpower & equipment requirements for the SSE, a few simple rules guided the effort:

- Have enough rank to survive and be heard in the HQs staff.
- Ensure enough personnel were assigned so that a Space Officer was on duty 24x7 during field operations and could support both a Tactical Air Coordinator and the Tactical Operations Center.
- For the SSE Toolkit (SSET) developed by the Battle Lab by LTC Baehr, ensure the SSET had independent communications capability so that the Space Officer was always connected to the JSF and the SBMCS. This supported our Concept of Operations for Space Officers to have a small footprint forward and to reachback to the JSF for information, taskings, and support.

In some minds, the SSE replaced the need for the ARSST, so the role of the ARSST came into question. TRADOC viewed the ARSST billets as bill payers for the SSE. This presented a challenge, so USASMDC/ARSTRAT proposed that Army Space forces were to create a battle roster to augment the SSE, as needed, for extend operations. Over time, the ARSST adapted to support other Services (such as the U.S. Marine Corps) and units not assigned an SSE (such as the Coalition Provisional Authority during Operation Iraqi Freedom), and saved themselves from being eliminated.

Assessing the future in light of the present

The next step in understanding where the Space effort is today in terms of integration into Army operations is in grasping the status of the elements of Space force enhancement. A quote from *Success from the Field OIF V*, an article printed in the Army Space Journal in the 2008 Spring Edition, provides an entry perspective. "Traditional Space force enhancement has matured greatly on the corps and division staffs, freeing up SSEs to focus on other tasks." This trend has held steady since 2006 so that today Army leaders both inside the Space community and outside have a greater realization of the five Space force enhancement functions: communications, PNT, ISR, missile warning, and environmental monitoring. Most of these Space-related functions are performed in the G2 and G6 staffs. While the establishment of SSEs envisioned a great deal of Space requirements for tactical and operational headquarters, this has not been shown in Operation Iraqi Freedom or Operation New Dawn – hence the present SSE emphasis on IJSTO and ACCM.

A few thoughts on the traditional SSEs during Operation New Dawn

Communications There has been little need for SSEs to supplement the division G6. The SSE's role in communications has been a supporting role in GPS electromagnetic interference (EMI) resolution. EMI recognition, battle drills and resolution all require improvements.

PNT PNT at the corps and division level consists of applications involving devices that use GPS. Primary among these are Friendly Force Tracking (FFT) equipment, precision-guided munitions and Unmanned Aerial Vehicles. FFT equipment is handled by the G6 who well understands and has the personnel to troubleshoot issues such as signal latency. SSEs can assist with reports which provide GPS accuracy predictions [Position Dilution of Precision (PDOP) reports], but the Air Liaison Officer (ALO) and the Staff Weather Officer (SWO) are also conversant in this information. The UAVs that the Division G2 Collection Manager controls use the GPS signal for navigation and payload operation.

ISR The corps and division G2 Collection Managers are experts on ISR. They control all of the ISR assets. There are some niche ISR-related tasks that the SSE can perform. The SSE can provide confirmation of an infrared event. This information may be used to assist in locating a downed aircraft if there was an explosion. If the adversary had satellites and ground stations that were potential targets, the SSE could assist in monitoring the status of these targets.

Missile Warning The corps and division staffs have a section devoted to Air and Missile Defense which maintains a presence in the operations center. The SSE can monitor the publicly available SIPR Website that tracks events for situational awareness and as a backup.

Environmental Monitoring SSEs monitor the Space environment by reviewing the daily Space slides sent out by the Combined Air Operations Center to see if there are any effects to operations. Very rarely, scintillation may cause some negative effects with communications. Other than that, Space weather did not generally impact operations.

Success is as much personality driven as any capability you can provide. Space professionals must find and coordinate with the right people within the organizational structure to succeed. Communicate with the unit you are replacing as early and as often as possible.

The above breakdown of Space Force Enhancement shows that the corps and division G2 and G6 staffs understand and accept the Space-related portion of their function as just another necessary function. The fact that the capabilities depend on something in orbit are justifiably transparent for most cases.

Requirements for the SSE were also driven by the fact that Space support to Operation New Dawn was conducted in a mature theater. It is important to note that staff officers – to include FA40s – may be operational generalists or functional experts from a training and personnel management perspective. However, when the expertise does not match the requirement for an organization, a staff officer should develop expertise and assume roles that are critical for his or her unit. These facts are universal. This is specifically why so many FA40s have developed high levels of expertise in IJSTO and ACCM or been assigned to generalist position, such as a division liaison to its higher headquarters. This fact is a testament to the quality of the FA40, as well as the strength of the Army officer corps.

From this perspective, the Space professional community should avoid trying to organize as an operations career field force. The Space professional doesn't need a widget or daily Space action to be relevant – they are part of staffs which help commanders solve problems. Space professionals solve problems by providing Space expertise.

The importance of staff interaction cannot be overemphasized. However, it is important to note that interaction with fellow division SSEs is just as invaluable. Aside from participating in regular Space and special programs Video Teleconferences, the division and corps SSE chiefs routinely corresponded with each other on all aspects of the job. Each individual brought unique experiences, pulled together, and shared ideas, products, and information to assist each other in any way possible in executing their respective unit missions. Reaching out to fellow SSEs did not stop at the IJOA boundary. The SSE from 1st Cavalry Division (CD) at Fort Hood, Texas, provided invaluable assistance to 4th Infantry Division (ID) SSE by assisting with the train-up and indoctrination requirements for key personnel from 2nd Brigade Combat Team 1st Cavalry Division prior to their deployment to U.S. Division-North. Their assistance saved valuable time, and facilitated a seamless Relief In Place/Transfer of Authority between 2nd/25th ID and 2nd/1st CD as they assumed their mission as one of USD-North's Advise and Assist Brigades.

Lessons Learned

- Success is as much personality driven as any capability you can provide. Space professionals must find and coordinate with the right people within the organizational structure to succeed. Communicate with the unit you are replacing as early and as often as possible.
- Create an Standard Operating Procedure and continuity book for your successors. It is important to capture the lessons you have learned and pass them on. The SOP can be modified as needed, and becomes a living document to assist the Space community.
- While in garrison, take advantage of as many training and schooling opportunities as possible. The Space and Missile Defense Battle Lab Futures and Wargames section participates in a series of wargames and seminars each year. Attendance at some of these events enhances the Space professional's basic knowledge of available systems and encourages non-standard solutions to complex scenarios. This serves the FA40 well during a deployment. It also provides the Battle Lab with current and relevant experience to direct their programs.
- Network amongst peers.

Current vs. Future Fight

As mentioned earlier, Operation New Dawn was conducted in a mature theater and in a threat environment with low probability of insurgent access to counter-Space systems. This will not always be the case. As adversaries gain more and more access to the electromagnetic spectrum and Space is normalized, the vulnerability of U.S. Army reliance on Space assets becomes more apparent. Knowledge and employment of Space protection systems are only partial solutions. Operations in a contested Space domain will not result in the assured capabilities most U.S. forces currently enjoy. In lieu of the traditional blue-on-blue interference, we will also face issues from grey and red systems. This may degrade communications, ISR, and precision engagement. A thorough link and node analysis may take some time to conduct, but the results will provide U.S. forces a basic architecture from which to troubleshoot.

Another area requiring examination is the SSE force structure. The lieutenant colonel billet must continue to be filled with experienced, senior FA40s, primarily to ensure that the headquarters is effective. But, the seasoned FA40 also benefits junior FA40s with mentoring. The changes to some of the SSE positions from major to captain, combined with the

U.S. and Iraqi military partnerships provide a broader perspective for the future.

four-year career field designation, will require assessing a true career model that describes how to achieve success and where SSE service fits into success.

Closing

The beginning of this article described three options for the future of Army Space: hold what we have, modify force structure within the Space construct, or look at where Space broadly fits into our Army formations with other enabling career fields. While this article did not address these options directly, it did provide a necessary discussion about integrating Space in Army operations – a background that is necessary for taking things forward. A final consideration is this: To date, 4,481 Americans have given their lives in military operations in Iraq. Concepts for the Army Space Cadre, Army Space Support Teams and Space Support Elements were forged and tested during eight years of combat and stability operations in Iraq. They were weighed, measured and tested – the contributions are unquestionably invaluable to our Army's exceptional success.

As Operation New Dawn ends, it is appropriate for our Army and USASMDC/ARSTRAT to conduct a holistic, "pitot tube to tail rotor," "soup to nuts" assessment of Army Space activities to ensure we are trained, organized, and equipped to support the next challenge. As our Army adapts for the future in support of combined arms maneuver and wide area security missions, so must Army Space. The Army must understand its requirements for Space based assets and Space forces in support of full spectrum operations. Yogi Berra said it best– "If you don't know where you are going, you might wind up someplace else." We have come too far to drown in irrelevance – now is the perfect time to comprehensively review the Army Space enterprise and prepare for the future.

TaLKing SHOP

UNITED STATES & AUSTRALIA

LTG Richard P. Formica, and MAJGEN Mike Milford speak with Corporal David Boucaut (RAAF) at the opening of the Wideband Satellite Communications Operation Center in Wahiawa, HI.

An Old Alliance, Fortified through SATCOM

STORY BY WGCDR (05), RAAF, PATRICK J. DEL GUIDICE, AUS CPP SATCOM DIVISION

The United States (US) and Australia (AUS) have been allies for a very long time.

"Australia is in fact the only country that has participated side by side with the United States in every conflict of any degree in which the United States has been involved since we first fought together at the Battle of Hamel on the Fourth of July in 1918."[1]

The alliance between the two countries is fortified on, amongst other things, the basis of closely-shared cultural ideals, a profound belief in a democratic system of government and a genuine desire to share the burden of ensuring that our way of life is safeguarded from those who would otherwise see us fall. The foundation of this close relationship is codified in formal agreements such as the AUS, New Zealand (NZ), US (ANZUS) Security Treaty.

The ANZUS Treaty:

"was signed in San Francisco, Calif., on Sept. 1, 1951, for the purpose of providing mutual aid in the event of aggression and for settling disputes by peaceful means. It came into force in 1952. The three countries' initials provided the acronyms for the treaty and the organization that grew out of it. The United States offered the pact to Australia as compensation for the prospect of Japanese rearmament. Under the terms of the treaty, the three nations maintain a consultative relationship with each other and strive to ensure their collective security in the Pacific region."[2]

Corporal David Boucaut (RAAF) is a CPP with D Company, 53rd Signal Battalion at WSOC Wahiawa.

However, to date the treaty has been invoked beyond the Pacific region – for example, it was invoked shortly after 11 Sep 2001 by Prime Minister Howard (Prime Minister of Australia 1996-2007) as an international statement that Australia was standing ready to cooperate within the limits of its capability concerning any response that the United States may regard as necessary[3]. Hence, ANZUS was the political force behind AUS's involvement in both Gulf Wars and in Afghanistan:

"Australia made a point of using ANZUS to justify sending troops to Afghanistan, … Shortly afterwards, Howard sent Australian troops and bombers into Iraq…"[4]

Interestingly, to date AUS has been the largest participating, non-NATO ally in Afghanistan[5].

Consequently, AUS' and military forces conduct a variety of Joint activities including Military Exercises (e.g. Talisman Sabre 2011) and operate several joint defense facilities in AUS associated with things such as Intelligence[6] and Satellite Communications (SATCOM). As a benefit of the strong relationship and the need to ensure that the two countries employ compatible and interoperable capabilities in operations, the US and AUS also share military technology through numerous cooperative arrangements such as US Foreign Military Sales programs (e.g. Joint Strike Fighter, C-17, CREW Vehicle Receiver Jammer, etc.) and joint partnerships such as the Wideband Global SATCOM (WGS) program. The US-AUS WGS partnership is the focus of the remainder of this article.

In November 2007, the US and AUS entered into a Memorandum of Understanding (MoU) to:

"cooperatively enhance the WGS System through addition of an AS-funded, sixth satellite (including all required activities) to provide to each Participant, Assured Access to worldwide SATCOM resources for their national use over the operational life of the constellation, commensurate with each Participant's contribution."[7]

For the US, it meant there was an opportunity to procure a sixth WGS satellite prior to the expiration of its contract option with Boeing and increase the WGS constellation resulting in much-needed additional SATCOM capacity. This was very significant for the US Warfighter because only five had been approved for procurement by the US Government at that time. For AUS, it provided a global SATCOM capability in military X-band and Ka-band , that met AUS' increasing SATCOM requirements. Based on AUS' reliance on the OPTUS-C1 satellite for its X-band and Ka-band coverage within the Australasian region as well as its dependence on various commercial SATCOM and legacy US MILSATCOM systems (where agreements were in place), the WGS MoU represented a significant increase in the Australian Defence Force's (ADF) SATCOM capability with major global, operational implications,

"permitting the ADF to conduct multiple and simultaneous military operations independently or as part of a coalition force via secure and reliable SATCOM, available to deployed forces, operational command and Australian headquarters."[8]

The undertaking from the AUS perspective is approximately a $1 Billion investment and is anticipated to further strengthen the AUS-US alliance by enhancing, "the close ties and high level of cooperation that already exists between AUS and US defense force personnel."[9] Under this MOU, AS is responsible for funding the procurement and life cycle costs of adding a sixth WGS satellite, the associated launch services, and costs associated with connectivity. However, this should be framed as a financial contribution to the cost of the constellation; that is, it would be a mistake to associate the AUS investment with AUS ownership of WGS-6. AUS' investment entitles it to shared use of the entire WGS constellation commensurate with its investment – the US still owns and operates the WGS system in total.

Also, AUS was given the prospect to place and fund personnel – as Cooperative Project Personnel (CPP) – in the Acquisition Project Office (APO), Operational Project Office (OPO), and Operations Centers, including the Global SATCOM Support Center, the Regional SATCOM Support Centers, and the Wideband SATCOM Operations Centers (WSOCs). Hence, to date AUS has placed ten CPPs in the US as a result of the MoU. One, an O4, is in the J66 in STRATCOM at Offutt, Nebraska. There are two CPPs in Colorado Springs; an O5 in the SATCOM Division Staff and a GS-14 (00391) equivalent (AUS Public Servant - APS) in the Wideband Branch of SATCOM Division. In Hawaii, there are two CPPs in the RSSC-PAC at Wheeler AFB, an O3 and an E6. Finally, there are five more CPPs in the WSOC at Wahiawa working within D Co., 53rd SIG BN, an E8, an E6 and three E5s. By 2013, the number of AUS CPPs will total sixteen;

fifteen of whom will work for USASMDC/ARSTRAT (note: the yet-to-arrive, six CPPs will all PCS to the WSOC at Wahiawa).

CPPs are defined in AR 380-10 as, "foreign government personnel assigned to a multinational program office hosted by the Department of the Army…for the purpose of carrying out a multinational project or program."[10] CPPs are not foreign government liaison officers or observers; they report to and take direction from their host nation (US) supervisor — although they may act from time to time on behalf of their respective country if authorized in writing. The benefit of this arrangement is twofold; the US is provided with cost-free resources to contribute to joint US-AUS WGS objectives and AUS is afforded the opportunity for its personnel to gain much-needed space/SATCOM experience; something that can be leveraged by the Australian Defence Organisation (ADO) when CPPs eventually PCS back to AUS.

The inclusion of AUS CPPs in USASMDC/ARSTRAT's daily-business is a relatively new endeavor for the Command. In order meet the objectives of the US-AUS WGS MoU, the Commanding General's intent, through the G3, promulgated OPORD 07-11 (Integration of AUS CPP Personnel),

> *"to integrate all assigned AUS CPPs as embedded USASMDC/ARSTRAT staff as soon as possible from their time of arrival, to make maximum use of the knowledge and skills they bring to the command… and that all possible Wideband SATCOM planning and operations be conducted as REL to USA, AUS and that US-only Wideband planning and operations be conducted by exception."*[11]

The OPORD acknowledges that the MoU represents a partnership of approximately 22 more years over which time AUS CPPs will be a part of USASMDC/ARSTRAT. Consequently, G-3 is coordinating development of a Concept of Operations and Tactics, Techniques, and Procedures (TTP) to successfully integrate AUS DoD members into the Command.

Since the arrival of the first AUS CPPs in 2009, USASMDC/ARSTRAT has made increasing strides to integrate CPPs. In fact, it has been openly reported that the CPPs in D Co., 53rd SIG BN (WSOC at Wahiawa, HI) are very well integrated and are highly respected and productive members of D Co. Additionally, recent break-throughs regarding other objectives of OPORD 07-11 will see CPPs participate in even more WGS activities throughout the Command and with other external-to-the-Command stakeholders. The partnership is blossoming and the intent of the MoU is being realized more and more every day.

The launch of WGS-4 is scheduled in the first quarter of 2012, followed closely by WGS-5 (Oct 2012) and WGS-6 (Mar 2013). Furthermore, the US is funding additional increases to the WGS constellation through procurement and life-cycle costs for WGS-7 and WGS-8. The US is also finalizing new partnerships with other close allies to jointly procure WGS-9. These increases to the WGS constellation will make WGS an even more powerful communications-enabler, globally for Military Operations. Additionally, lessons learned from the AUS-US partnership, such as how SATCOM entitlements for the partners are to be determined and how SATCOM resources are to be managed in congested joint operations areas, will be readily applied in the new arrangement.

The relationship between the US and AUS is cherished by both nations and extends back in time, and is forged in blood. The WGS program is just one example of many, where the friendship and dedication to each other has resulted in a whole that is greater than the sum of its parts. AUS and US both benefit by cooperatively participating this technologically superior and imminently capable WGS SATCOM program. Through continued cooperation and support of this program, we will prolong each other's ability to better enable our national and coalition military operations, globally. By means of employment of advanced SATCOM capabilities, we will be better able to protect our way of life, effectively provide aid to those in need and further fortify our already strong and loyal relationship to one another.

footnotes

[1] The Honorable John Howard, Prime Minister of Australia 1996-2007, The Anglosphere and the Advance of Freedom, - Published on January 3, 2011, http://www.heritage.org/research/lecture/2011/01/the-anglosphere-and-the-advance-of-freedom.

[2] http://www.britannica.com/EBchecked/topic/29147/ANZUS-Pact, accessed 22 Jun 2011.

[3] Government Invokes ANZUS Treaty - Prime Minister's Press Conference, September 14, 2001, http://www.australianpolitics.com/foreign/anzus/01-09-14anzus-invoked.shtml, website accessed 30 Jun 2011.

[4] ANZUS Alliance, http://www.bbc.co.uk/dna/h2g2/A5648998, website accessed 30 Jun 2011.

[5] Note: on 9 June 2011, Georgia's Defence Minister Bacho Akhalaia confirmed his country's willingness to increase its military contingent in Afghanistan… from its current contingent of 925 personnel with another battalion of 725 soldiers as of 2012…which will make Georgian forces larger in number than the current largest non-NATO contingent, that of 1550 Australian soldiers. Article from: EASTWEEK, Analytical Newsletter for Eastern Europe, Russia, Caucasus and Central Asia, Issue 21 (256), 17 June 2011, published by Centre for Eastern Studies, p.7.

[6] For more information about the intelligence relationship between Australia and the U.S.A., refer: The U.S. – Australian Intelligence Relationship, PAX Americana Institute; Policy Department, by Drew Davis, Executive Director, PAX Americana Institute, Spring 2009.

[7] Memorandum of Understanding between the Department of Defense of the United States of America and the Department of Defence of Australia concerning joint production, operations, and support of Wideband Global Satellite Communications, dated 14 November 2007, p.7.

[8] Australia To Join With United States In Defence Global Satellite Communications Capability, dated 09 Oct 07 Canberra, Australia (SPX), http://www.spacewar.com/reports/Australia_To_Join_With_United_States_In_Defence_Global_Satellite_Communications_Capability_999.html accessed on 21 June 2011

[9] ibid.

[10] Definition of Cooperative Program Personnel, AR 380–10 • 22 June 2005, p. 78.

[11] USASMDC/ARSTRAT OPORD 11-07 (Integration of Australian CPP Personnel), dated 252300ZJAN2011, p.4.

Figure 1: The Singtel/Optus C1 Satellite

A NEW X AND KA BAND SATELLITE CAPABILITY FOR THE AUSTRALIAN DEFENCE FORCE

Figure 2: The PARAKEET terminal

COURTESY OF DEFENCE SCIENCE & TECHNOLOGY ORGANIZATION

The Australian Defence Force (ADF) has both X- (~7 to 8 GHz) and Ka-band (~20 GHz and ~30 GHz) capabilities on the Singtel/Optus C1 satellite (Figure 1). The ADF would like to exploit both capabilities, but the current land and marine satellite terminals (i.e. antennas) do not include Ka-band. Accordingly the ADF would like to upgrade their satellite terminals to be able to operate simultaneously at X- and Ka-band to minimise duplication with equipment and personnel. The ADF has contracted the Defence Science & Technology Organisation (DSTO) and the CSIRO to provide a new X/Ka-band capability for one of its existing mobile land terminals (the PARRAKEET – Figure 2).

During the initial design study several feed configurations were considered but the final design approach employs a coaxial structure (Figures 3 and 4) which was designed and optimised using both CSIRO proprietary and commercial electromagnetic analysis software. The new design provides for optimum performance in both X and Ka bands from one antenna, giving an equivalent performance of two single band antennas.

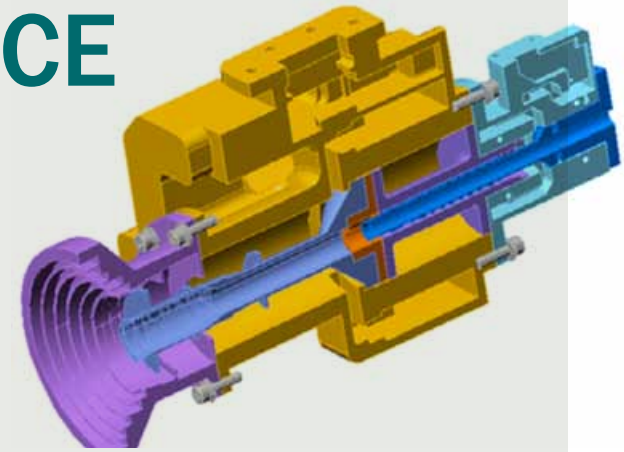


Figure 3: Cross sectional view of the coaxial feed

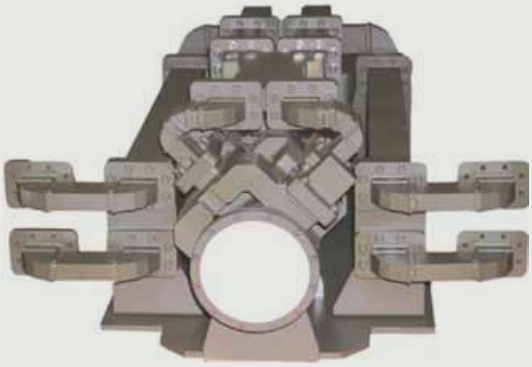
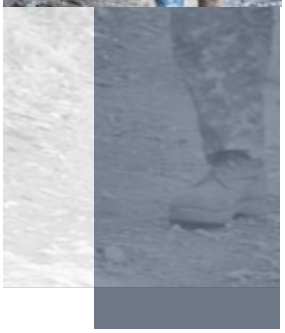


Figure 4: The X/Ka-band feed chain

SPACE SYSTEMS

Provide an Edge In Australia - U.S. Exercise

BY MSG CORINE LOMBARDO, NEW YORK ARMY NATIONAL GUARD



Space systems give an edge to the commanders of Soldiers such as Australian Pvt. Brendan Venables, a member of Northwest Mobile Force, Northern Australia, and SPC Jason Gutshall, a Maryland National Guard Soldier from Charlie Company, 1st Battalion, 158th Long Range Surveillance Cavalry in Hagerstown, Md.
Photos by MSG Corine Lombardo

For American and Australian Soldiers taking part in Exercise Talisman Sabre, satellites can make the difference between winning or losing.

"Space Operations help the commanders visualize movement on the battlefield using commercial topographical imagery, but it isn't just about terrain features and maps," said MAJ Courtney Henderson, U.S. Army, Pacific, Space Support Element, Fort Shafter, Hawaii.

"Space capabilities enhance the military's ability to communicate, navigate terrain, engage the enemy with better accuracy, and protect its forces," Henderson stressed.

Space Operations Soldiers retrieve and interpret data and develop products that help commanders navigate on the battlefield, whether they're tracking convoys, establishing landing zones and distribution networks, or mapping critical infrastructure to locate obstacles, bridges, and crossings, to name a few, Henderson said.

Talisman Sabre is a biennial training exercise designed to bring the different branches of the U.S. and Australian militaries together in a combined environment to train and enhance their combined and joint war-fighting skills.

As a combined joint task force, roughly 14,000 U.S. and 9,000 Australian military personnel conducted maritime, land, and air operations exercises July 11-29.

Satellite and Space technologies have a wide range of application, not only as an asset to commanders on the ground in a combat environment and pilots in the air, but also for emergency and humanitarian assistance.

Before a commander can decide which contingent of troops will descend to the east or if they will fan out on a western ridge or which tank formation is chosen to mount a

> **"The exchange of this technology with our Australian counterparts through Talisman Sabre has helped demonstrate the need for this asset in a combined ground force campaign ... ."**
>
> — MAJ Courtney Henderson

direct assault, he needs to ensure the terrain will support the movement.

Satellite imagery allows him to know in advance if a riverbed is flooding or an area is experiencing extreme drought conditions, both of which have a huge impact on a commander's decisions.

A significant asset is the ability to use current imagery to visualize and assess battle damage using computer images rather than sending personnel and aircraft to determine how effective weapons systems were.

"These systems enhance timing, effectiveness, and efficiency for commanders in the air as well as on the ground," said Squadron Leader Steven Henry from the Australian Defence Forces Air and Space Operations Center, Headquarters, Joint Operations Command.

"Whether it's the navigation system in a cockpit or a locator beacon during a search and rescue mission, they are critical to our success," Henry said.

Understanding these capabilities and interpreting the data that's collected is no easy task.

Army Space Support Teams, or ARSSTs, from the 1st Space Brigade continually monitor satellite conditions, locations, atmospheric weather conditions, and environmental factors, such as solar flares, that may impact their systems' ability to collect or send information.

Teams provide a tailored support package of personnel and equipment including six members, two officers and four enlisted Soldiers, each specializing in his or her own fields; from communications, intelligence, and computer technology to topographic analysis.

Soldiers undergo months of additional training that focuses on Space-related knowledge and skills.

"What makes us unique is that every one of our Soldiers can step in and perform any function on the team," said 1SG Chuck Meens, 1158th Space Company, Colorado National Guard, Colorado Springs, Colo.

These highly trained teams use their skills and various systems to advise a commander on precision engagements, geospatial intelligence, and environmental effects on satellite communications and imaging capabilities, said MAJ Joseph Paladino, commander of the Colorado Army National Guard's 217th Space Company, Colorado Springs, Colo.

This is the first time Space Operations have been fully integrated in a Talisman Sabre exercise, with components from the U.S. Army and Air Force and the Royal Australian Air Force.

"The ARSST has been a huge benefit in demonstrating Space operations capabilities," Henderson said. "The exchange of this technology with our Australian counterparts through Talisman Sabre has helped demonstrate the need for this asset in a combined ground force campaign. Theater security cooperation is a major initiative for U.S. Army, Pacific. The relationships we are building and the exchange of information we receive is essential to providing Space Operations professional training and development, which we foresee going beyond this exercise."

"Space Operations is relatively new to the Australian Defence Forces. We have a limited number of personnel at this point, so the training and experience we gain from U.S. Army, Pacific is critical to our development," Henry said.

TaLKing SHOP

A sapper from Australia's 1st Combat Engineers Regiment, 1st Field Squadron, 2nd Troop plants a block of explosives to cut through a metal structure during Talisman Sabre 2011. Talisman Sabre 11 is a biennial training event aimed at improving and validating the Australian Defense Force and the United States combat readiness and interoperability as a joint task force. *U.S. Navy photo by Mass Communication Specialist 1st Class Woody Paschall*

AUSSIES & YANKS

Pacific Space Support Element Reaches Three Goals in Exercise

BY MAJ THOMAS PUGSLEY, MAJ COURTNEY HENDERSON, CAPT. ROBERT MCCONNELL, AND SQUADRON LEADER STEVE HENRY

Members of the U.S. Army Pacific Space Support Element, U.S. Air Force Pacific and Army Space Support Team #23 join their Australian colleagues at the Australian Defence Forces Headquarters Joint Operations Command Air and Space Operations Centre during Exercise Talisman Sabre 2011. *Photo by MSG Corine Lombardo from the NY ARNG*

Last summer the U.S. Army Pacific (USARPAC) Space Support Element participated in the multinational training exercise Talisman Sabre 11 with support from an Army Space Support Team. The exercise was designed to practice Combined Joint Task Force operations in a high-end warfighting environment in order to improve combat readiness, enhance interoperability, and test emerging capabilities.

The Australian-hosted biennial exercise is one of the largest such exercises in the Pacific region and included more than 35,000 U.S. and Australian forces participating throughout the entire theater. Because Space was to play a more significant role in this year's exercise, Space forces from both the U.S. Army and Air Force were asked to reinforce the newly formed Australian Joint Space Operations Cell (JSOC), which officially stood up in June 2010.

Why would a theater Army Space Support Element (SSE) take part in such an exercise? Simply put, doing so met many of our primary objectives. First, the exercise allowed U.S. forces to support the development of an ally's Space capability and assist the newly formed Australian Space cadre in supporting the Combined Air and Space Operations Center. Second, the exercise gave us the opportunity to support the USARPAC Theater Security Cooperation Plan (TSCP) goals by further developing relationships with one of America's closest allies. Third, the exercise allowed the USARPAC SSE to exercise its Title 10 responsibilities. And finally, it gave us the opportunity to develop Tactics, Techniques, and Procedures (TTPs) and Standard Operating Procedures (SOPs) in support of an expanded role in current operations in the USARPAC Main Command Post.

While the use of an SSE and an Army Space Support Team (ARSST) in support of a foreign Space element, specifically an Air and Space Operations Center (AOC), is not doctrinal, the exercise provided great utility and value to both the U.S. Space forces and the Australians. The overall results had a much greater impact than we had expected and reinforced one key fact: For SSEs to remain relevant they need to be flexible and able to adapt and integrate into any headquarters element where there is a need for Space expertise. But before we get to the specifics of the exercise, let's look quickly at the road that brought a theater Army SSE and an ARSST to augment the JSOC, the highest echelon Space operations organization within the Australian Defense Forces.

Background

Space integration into Talisman Sabre 11 started simply enough. Following after-action review comments from exercise Schriever 2010, the need to help bolster the Space operations capability of the Australian Defense Forces was identified. This need, coupled with the requirement for the USARPAC SSE to seek out opportunities to integrate Space into theater-wide activities in the U.S. Pacific Command region in support of its TSCP, led to a mutually beneficial situation. Using the pre-existing bilateral Talisman Sabre exercises as a vehicle, the USARPAC SSE presented a plan to integrate a more robust Space support package in support of the Australians. This would facilitate fulfilling theater Army functions by executing the TSCP as well as helping foster a more robust Space and Space activities relationship with a top ally. The two were mutually beneficial, and the plan was approved by the Australians who were specifically interested in the prospect of U.S. support and augmentation to their newly formed Joint Space Operations Cell.

The SSE then approached the PACOM Director of Space Forces (DS4) and asked if the Pacific Air Forces, who were already involved in the planning process for the exercise, would be interested in supplementing the U.S. Army Space personnel augmenting the Australian JSOC, and they accepted, putting the full weight of the DS4 behind the exercise. From that point forward, plans were set in motion for the first-ever Combined Space Operations Cell providing Space-specific support to a Combined Air and Space Operations Center.

The Exercise

The 2011 iteration of Talisman Sabre provided many firsts with regard to U.S. and Australian relationships. First, it was an inaugural opportunity for collaboration between Pacific Air Forces, U.S. Army Pacific, and Australian Defense Forces (ADF) Space personnel into a single combined Space cell. In Talisman Sabre 2009, only U.S. Air Force Space personnel worked alongside

ARSST facilitated successful planning and integration of Space mission areas ... .

AUTHOR BIOs

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ADF personnel to provide Space support, and at a much reduced level. The diverse grouping of Space personnel for this year's exercise from across the services provided valuable lessons for all parties involved. Simply put, this was possibly the best integration of Space into Combined Force Air Component Command (CFACC) planning ever seen during a non-U.S. exercise.

Integration of an Army Space Support Team in support to the CFACC – critical to the overall success of the exercise – was another successful first for Talisman Sabre. The ARSST provided a broad base of capabilities focused on maintaining Space situational awareness, producing daily products that supported strike planning and timing, and providing communications and reach back to supporting organizations. The ARSST facilitated successful planning and integration of Space mission areas into planning by providing navigation accuracy plots and satellite modeling. This allowed the SSE and Air Force Space personnel to focus on current and future operations planning, staff integration, participation in various key working groups, and produce and execute general officer-level decision briefings. Without these products or support from the ARSST, the Space team's input into CFACC planning process would have been greatly reduced.

The ADF Space personnel's establishment of a permanent position on the AOC operations floor for a Space duty officer marked another first. This is a significant step, and a sign that the ADF is beginning to take Space impacts on operations seriously. Unfortunately, prior to the execution of Talisman Sabre 2011, no SOPs or TTPs existed for this position, and the Space team was forced to develop and refine SOPs and TTPs during the course of the exercise. This was deemed a "huge success" by the PACOM DS4, Col. Alan Rebholz, USAF, who was in attendance for the exercise as the night AOC director. Having helped develop the SOPs and TTPs, the USARPAC SSE member who recently was tasked with standing up a similar Space duty officer position on the USARPAC Main Command Post floor used these documents as the basis for refining his own SOPs and TTPs.

Another critical first came from an Australian Air Force officer, Squadron Leader Steve Henry, acting as the DS4 for the exercise. He organized spin-up training for all personnel prior to the exercise and directly advised the Joint Force Air Component Commander (JFACC) throughout the exercise. Additionally, he provided guidance to the Space team, directing day-to-day operations and was personally responsible for the superb integration observed during this execution. A key factor in his success was the availability of the PACOM DS4 and his many years of Space experience as a senior adviser and mentor. This provided the JSOC with a vector and reference point when we found ourselves stuck in the wrong orbit and needing a delta V.

Overall the 2011 exercise for the JSOC was an unparalleled success with a hard-working and well-prepared team accomplishing the many firsts. Combined with competent staff and an efficient battle rhythm, JSOC members were recognized for all their efforts and expertise during the exercise and setting the standard for a Space cell's role in AOC operations. Additionally, the exercise showed how Army Space forces can integrate successfully into any organization to provide Space expertise. All these achievements considered, there were still plenty of lessons learned that must be addressed.

Challenges and Lessons Learned

There were some major challenges pointed out during the execution of Talisman Sabre 2011. While each of these challenges had varying effects on operational capabilities, they all had major impacts that degraded the overall ability of the JSOC to execute its mission. We must take a serious look at the root causes of these issues to be able to address and mitigate them in the future.

The first and most apparent of these issues was the inability to share information. It is hard to fathom how policies make it into place that allow free and open sharing of information at the Top Secret/Special Compartmentalized Information classification level, but also make it nearly impossible to share information at the Secret level. We found that release questions were the single largest roadblock encountered during the exercise. Many of the required products that we produced through the ARSST or requested through the U.S. Joint Space Operations Center or Global Positioning System Operations Center were classified above our ability to share them with the Australians. You would think that this must be some mistake, a bureaucratic blunder, especially with Australian officers and noncommissioned officers working at many of the same

Continued and expanded cooperation at the operational planning level is now necessary in order to increase the opportunities and overall capabilities of both sides.

organizations that produced these products. But it is not, and even after two different presidents, Ronald Reagan (in 1983) and George W. Bush (in 2006), declared that information should flow without hindrance to our closest allies, we still find ourselves in an environment where we can't share the most basic of information freely.

The second challenge we faced was not having an onsite Foreign Disclosure Officer available for the exercise. Though this issue is tied to the first, it is still an item that must and can be addressed while the first is being discussed. The main setback of not having a disclosure officer onsite was that everything had to be sent to an offsite officer for approval before we could officially share the product. This caused delays in the production of time-sensitive information that could have helped in decision points being made during the pre-Master Air Attack Plan process that would affect the air tasking order. There were several instances where we lost the initiative due to non-timely product presentation.

The third challenge was with regards to authorities. While we worked through many of these issues by making some pretty broad assumptions, there are still some important questions left unanswered following this exercise. For example, would ADF personnel acting as the DS4 have the permission to execute Space Coordinating Authority actions? Also, would the coordinating authority be delegated to an Australian Combined/Joint Force Air Component Commander? At the heart of these questions is the relationship an Australian commander and DS4 would have with the U.S. Strategic Command and Joint Functional Component Command for Space (JFCC-Space), and the Australians' ability to get support from the Joint Space Operations Center. Without memorandums of agreement and understanding between Strategic Command and JFCC-Space, there can be no sharing of information due to legislative limits placed upon military and government agencies. The solutions to these questions should be worked out and implemented during planning and execution for the next exercise in 2013, and lessons learned applied to our Space operations relationships with other allies.

Way Forward

The U.S. and Australian governments have a long history of Space cooperation, yet the Space operations relationship needs to move forward. Both nations worked together across multiple programs for many years. Continued and expanded cooperation at the operational planning level is now necessary in order to increase the opportunities and overall capabilities of both sides. The Australians have been active partners in Space activities with the United States for more than 40 years, and their current integration includes participation in programs such as Overhead Persistent Infrared, missile warning, satellite communication systems (Wideband Global Communications System and UHF), and Space situational awareness opportunities including electro-optical and radar sites in Australia. Yet many more opportunities exist to further refine the relationship between the United States and Australia, but the last few remaining roadblocks must be removed for this to happen. U.S. and Australian national strategies point to the importance of bilateral cooperation in the Space domain to face the challenges of the 21st century. Memorandums of agreement and understanding must be put in place to allow the interaction of U.S. Strategic Command and JFCC-Space with the Australian Defense Forces. These actions need to be taken today and should not be postponed for tomorrow's military leaders to address.

Conclusion

The overall results of the exercise were very promising and further reinforced the knowledge that Space Support Elements, regardless of organizational level, need to remain flexible and able to adapt and integrate into any headquarters element where a need for Space expertise is needed. The intent of Space integration for the Talisman Sabre 2011 exercise was threefold, and all goals were met. This exercise gave U.S. Space forces a chance to assist our Australian partners in developing their fledgling Space cadre; gave the U.S. Army Pacific SSE the opportunity to meet its Theater Security Cooperation Plan goals by developing relationships with global partners; and allowed the SSE to exercise its Title 10 responsibilities. While the use of an SSE or an Army Space Support Team in support of a CFACC Air Operations Center and foreign Space element is not doctrinal, the overall impact on capabilities was without a doubt an exercise of great value to the Australians as well as the U.S. Space forces.

Capt. Robert McConnell, USAF, is the Space and Special Technical Operations strategist for the 613th Air and Space Operations Center. His duties include planning and integrating Space and Special Technical Operations into the Joint Force Air Component Commander's campaign strategy; providing subject-matter expertise for development of the component commander's air and Space strategy, objectives, and courses of action; and synchronizing theater requirements with the Joint Space Operations Center and national agencies.

Squadron Leader Steve Henry, Royal Australian Air Force, is Staff Officer 2–Space in the Headquarters Joint Operations Command Joint Space Operations Cell, in Bungendore, New South Wales. He plans and monitors Space support to Australian operations, exercises, and activities, with a primary focus of developing the Australian Defense Forces' Space capabilities and increasing the level of understanding of Space operations.

TaLKing SHOP

The deputy director of operations for NORTHCOM, Air Force Brig. Gen. Kenneth E. Todorov

KNOWING NORTHCOM

Deputy Operations Director Reveals Missile Defense Importance

BY CPT MICHAEL ODGERS, 100TH MISSILE DEFENSE BRIGADE PUBLIC AFFAIRS

The simplest way of understanding any organization, job, or unit is to first understand who they work for. That will usually go a long way to clarify things. However, when it comes to the complex command relationship of the 100th Missile Defense Brigade and defending the homeland from ballistic missiles, the answer to "who do you work for?" doesn't give the clarity you would expect.

The brigade's missile defenders consist of approximately 300 active-duty National Guardsmen located in Colorado, Alaska, and California as well as a small number of regular Army Soldiers. They serve the governors of their respective states, work for U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, and operationally support U.S. Northern Command (NORTHCOM).

The deputy director of operations for NORTHCOM, Air Force Brig. Gen. Kenneth E. Todorov, is very familiar with defending the homeland and how the 100th Missile Defense Brigade and 49th Missile Defense Battalion fulfill a portion of that mission.

"As the supported command, NORTHCOM provides several roles. We are very much focused on the current state of play with the architecture," said Todorov. "Defending the homeland today, knowing that the Soldiers of the 100th are ready to pull the trigger if the President, the Secretary of Defense, or the NORTHCOM commander asks them to. What is the health and status of the sensors and the interceptors? What is the health and status of the system? What are the indications and warnings of our adversaries? How likely are they to put a threat into the air?

"We also take interest in the future state of play of the architecture. We work very closely with the Missile Defense Agency and Army Space and Missile Defense Command to look at sensors, shooters, and interceptors and the architecture for future decisions and investments we have to make in order to stay ahead of the threat. There's a financial role; where do we make the investments? There's a policy role; where do

we put sensors and shooters? And there's a current operations role; what is the health and status of the system to defend North America?"

The Missile Defense Agency is responsible for research, test, and development of the ballistic missile defense system, as well as delivering an operational system to the Warfighter. USASMDC/ARSTRAT is responsible for providing trained operators. As the supported combatant command, NORTHCOM is concerned about all aspects of the system and its future.

"We have full operational confidence in the systems today, but as threats develop the future of global-based missile defense is going to have to develop as well," Todorov said. "There are a lot of efforts under way at a level above ours here at the combatant command. Efforts are under way with the Office of the Under Secretary of Defense for Policy and the Missile Defense Agency to determine where our investments will be best suited."

USNORTHCOM is the supported combatant command for defense of the contiguous United States, Alaska, and Hawaii. As such, it is the command's job to identify the operational requirements for defense of the United States against intercontinental ballistic missiles. U.S. Northern Command has the responsibility to identify those requirements; the Missile Defense Agency (MDA) develops and fields requisite capabilities.

"With the MDA it's very much a collaborative relationship. Our focuses are different. MDA is the technical experts, the thousand-pound brains out there doing the grunt work and really more focused on the futures decision. And here at NORTHCOM we're primarily focused on current operations," Todorov added. "The two are obviously interwoven. We've got a great working relationship with the MDA. I talk weekly with the deputy director, Rear Adm. Randy Hendrickson. He's very willing to listen to our positions, very willing to make changes to some of their plans and programs based on a combatant commander's needs. And he's always willing to reach out and get our views on things, even with decisions they don't need our opinion on. It's a very collaborative, very cordial, and collegial relationship."

The ground-based mid-course defense system will remain a vital component of the ballistic missile defense system. USNORTHCOM is working closely with the Under Secretary of Defense for Policy and the Missile Defense Agency in developing hedge options ensuring the United States remains ahead of tomorrow's threat.

MDA is scheduled to complete construction of a new interceptor field in Alaska this year to replace the original prototype field. Additionally, the agency is currently funded to construct an interceptor communications site on the East Coast which will improve U.S. defensive capability against any emergent Middle East threats. MDA will continue to upgrade existing ground-based interceptors and emplace new ones to ensure the United States has the best defensive capabilities possible to defeat intercontinental ballistic missile threats. All of these efforts, coupled with upgrades to the sensor network, will ensure ground-based missile defense remains a viable means of defending the homeland well into the future.

The European Phased Adaptive Approach (EPAA) is an important cooperative effort with European allies, according to Todorov. It will provide protection to them as well as to U.S. forces deployed in the region. EPAA initially focuses on regional protection but expands over time, with the emplacement of additional assets, to provide the foundation that could enable homeland defense against threats from Southwest Asia.

"There have been some misperceptions out there that this shield is to defend Europe. Clearly the initial focus, the initial emphasis on the EPAA has been focused on regional defense of that theater," remarked Todorov. "But as we see our adversaries in Southwest Asia or some rogue nations develop their capabilities, we're more and more concerned that those capabilities might have an impact on the homeland. The EPAA ensures that this is an away game.

"While at the same time we are providing for defense of that theater, if an adversary decides to be bold and fire a missile that can reach the homeland, we can use theater-based architecture to take out that threat. The sooner we can take the threat out the better. Working with our European partners will go a long way in ensuring that."

This phased approach is designed to ensure components of the ballistic missile defense system (i.e., sensors, shooters/interceptors, battle managers, and communications) are delivered ahead of projected threats. This approach allows the United States to incrementally enhance its regional and global ballistic missile defense capabilities. Northern Command will continue to work closely with its counterparts in U.S. European Command to ensure the United States can effectively integrate limited forward-based capabilities in support of the homeland defense mission, said Todorov.

"We have a great relationship in the homeland with the National Guard in general, but to have the Guard here in Colorado, California, and Fort Greely be part of our organization is special," he said. "Overall I am very impressed with the job they do and the relationship we have with the National Guard. They do a phenomenal job executing this mission.

"I'm very proud as a citizen of this nation and as an officer of the military to be part of this mission. I'm continually impressed by the great Soldiers, Sailors, Airmen, Marines, and Civilians involved on the mission end as well as the technical side," said Todorov. "I'm really proud to be a part of it. It will be challenging going forward as threats develop. We've got to stay ahead of them, and I know we will."

TaLKing SHOP

MISSILE DEFENSE EXERCISE S

Warfighters Learn Better Communication

BY SGT BENJAMIN CRANE, 100TH MISSILE DEFENSE BRIGADE PUBLIC AFFAIRS

When it comes to defending the nation from foreign missiles, the units associated with the Ground-based Midcourse Defense System do a great job of being at the ready and making sure that no missile ever gets in range to harm the citizens of the United States.

One of the ways the 100th Missile Defense Brigade ensures its readiness is to take part in a monthly Ballistic Missile Defense Exercise, or BMDX, which involves several entities that stretch from Colorado to Alaska and even the Asian-Pacific region.

"The BMDX is a Navy-specific exercise that we support them in doing," said WO2 2 Kale Murray, a command and control systems integrator for the 100th brigade. "It is a chance to exercise our real-world communications with the Long Range Surveillance and Tracking ships."

Within the realm of ballistic missile defense there are typically two types of Navy vessels used: the shooter ships and the tracking ships. Communication between the fire-control operators in Colorado, Fort Greely in Alaska, and these ships is a key element to keeping the skies safe.

To make sure that both the Navy and Army forces work together seamlessly and effectively, there has to be a clear and open line of communication between the two. Since naval personnel in the U.S. Pacific Command and Army personnel in Alaska are so far apart, finding ways to talk to each other is sometimes a challenge. So not only does the language that is used between the two military components need to be the same, a dependable means in which to get that communication across is necessary as well.

"It's not just a luxury, it's a requirement for the mission," said Murray.

An exercise such as this one allows for practice in communicating and gets the two groups closer to their end-state.

"The goal is to have a common operating picture and to have successful engagements," said Murray. "That's the bottom line."

Since this type of training began two years ago, the Soldiers with the 100th brigade have adapted to the ever-changing world of technology and communication. Taking ideas from the Navy, as well as sharing their own, the 100th's techniques, tactics, and procedures have been refined and the understanding of the two components has grown.

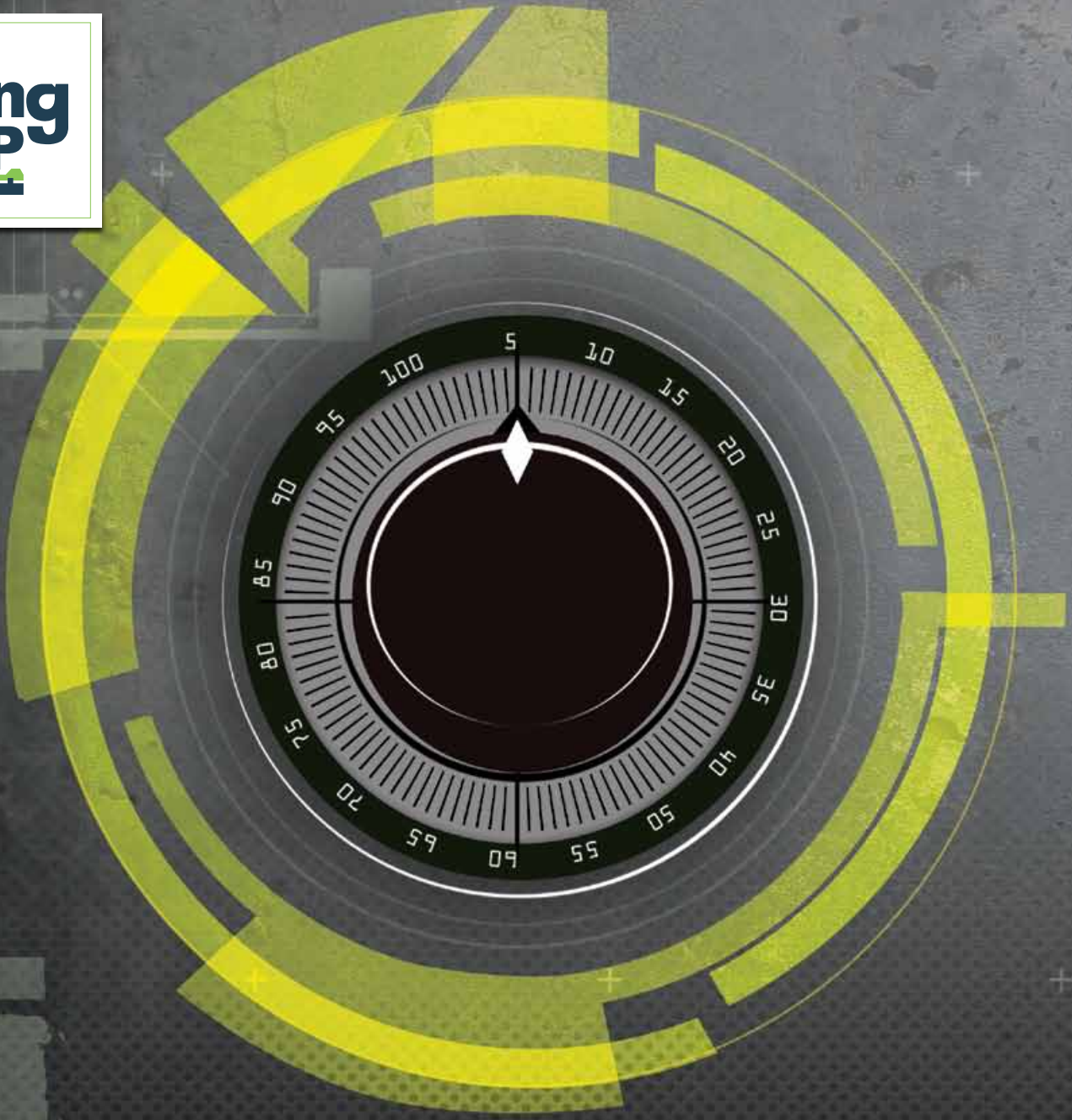
"The evolution of our architecture is an ongoing challenge," said Murray. "Just like any time you get updates for your phone or even Outlook, there are new bells and whistles that you have to figure out. So, it's all that figuring out that's the real challenge."

The participation of the 100th was recognized by the lead naval officer for the exercise. While debriefing the exercise, 6th Fleet's lead ballistic missile defense officer, Lt. Cmdr. Jesse Mink, gave a salute to the team for a job well done.

"This was the best training I've seen for ballistic missile defense ships. These ships are three to four weeks ahead of where I've seen past deployers arriving in the 6th Fleet (area of operation)," said Mink.

SPANS GLOBE

Talking SHOP



PROTECTING RESEARCH & TECHNOLOGY

PROTECTING SOLDIERS

BY JEFFREY W. BENNETT,
USASMDC/ARSTRAT TECHNOLOGY
PROTECTION OFFICER

On February 12, 2006, the Los Angeles Times reported on the difficulty of fielding a new system to counter improvised explosive devices (IED). The article discussed difficulties in the acquisitions and fielding process, but what transpired next made the thesis moot. Within the article, Mark Mazzetti, the Times staff writer, reported the unique functions of the Joint IED Neutralizer (JIN). According to the description, "A metal boom that extends from the vehicle's chassis emits high-powered electric pulses – military officials call it 'man-made lightning' – that set off the detonators on the bombs. The JIN is a spinoff technology of a larger U.S. government effort to develop energy-based weapons that include lasers, electric shocks, and microwaves."[1] Less than a week later, insurgents already had a way to counter the JIN.[2]

Only a small portion of the article discussed JIN's capabilities; the focus was on problems with fielding. This small mention of capability compromised the technology. In this case, the technology involved was not revolutionary but still needed protection. The contractor's application of technology proved sensitive. After the article was published, the enemy effectively countered the JIN.

Required Assessments

This disclosure of key performance information may have been in ignorance of Department of Defense (DOD) guidance. The DOD has established guidance that, if correctly applied, will prevent the adversary's ability to counter or duplicate a system's unique capability. In Department of Defense Instruction 5200.39, "Critical Program Information (CPI) Protection Within the Department of Defense," the mission is clear: "To provide uncompromised and secure military systems to the Warfighter by performing comprehensive protection of Critical Program Information (CPI) through the integrated and synchronized application of Counterintelligence, Intelligence, Security, systems engineering, and other defensive countermeasures to mitigate risk. Failure to apply consistent protection of CPI may result in the loss of confidentiality, integrity, or availability of CPI, resulting in the impairment of the Warfighter's capability and the DOD's technological superiority."[3]

Implementing and directing a research and technology protection program designed to safeguard technology and its application will enable more successful acquisitions. In the case of research and development, technologies should be assessed properly, and as soon as practical. The government can only expect its defense contractors to protect technologies and programs after they identify what needs protecting and how to protect it.

Assessing Classification Level

This process begins with the original classification authority's (OCA) determination of whether or not the technology is classified. This process is a deliberate and proactive five-step assessment undertaken by the program manager (PM). If the technology is classified, then the PM builds a security classification guide for the OCA to sign. If the technology is not classified, the assessment is still valid as identified unclassified technical data can be properly protected.

Assessing Unclassified Information and Export-Controlled Information

Controlled unclassified information should be identified for protection to prevent it falling into the wrong hands. Items that are For Official Use Only (FOUO) should be identified as such. Additionally, if FOUO should not be shared outside of contractor or government circles, it should be further identified with Freedom of Information Act (FOIA) exemptions. Without such guidance, technical data could be released upon a simple request. Once released, it becomes public domain and cannot be properly protected.

Under this system, when a FOIA request is made, the OCA reviews the material and determines whether or not unclassified information can be released. If there is no identified FOIA exemption, all FOUO and unclassified information is eligible for release. When documents are marked correctly, FOIA-exempted material also is protected from the requested action. When technologies are not assessed or marked, technical data that should be protected could be released.

Defense contractors, universities, licensees, and grantees should understand specifically which technical data should be protected under Department of State export-control laws. In

a 2004 DOD Inspector General report, surveyed contractors stated that they relied on their contracts to specifically state whether or not government technology should be export controlled.[4] Uninformed defense contractors could easily, although inadvertently, disclose technical data to foreign entities without authorization.

Another issue with research and development is the discrepancy with how technology is handled between government to contractor versus government to university efforts. In a March 2004 report, the Inspector General for the Department of Commerce noted that, "a course on design and manufacture of high-performance machine tools would not be subject to the EAR (Export Administration Regulations) if taught to foreign nationals as part of a university graduate course. However, this same information, if taught as a proprietary course by a U.S. company to foreign nationals, would require a license because the company does not qualify as an 'academic institution.'"[5] When working with universities, the U.S. government should direct exactly how the university will use technical data under the contract and what type of research will be conducted. Depending on the research level, the university should include foreign entities only with the required permissions from the program and the Department of State or Commerce.

Assessing Critical Program Information

The PM should form an integrated protection team with the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command technology protection officer (TPO) to conduct a critical program information assessment (CPIA) to determine whether technologies contain CPI. For acquisitions, the Milestone Decision Authority (MDA) requires the assessment prior to reaching Milestone B.[6] Where CPI is identified, a program protection plan (PPP) is required and countermeasures are implemented prior to meeting deadlines. The schedule should include time enough to assess for CPI and put in place the requirements of a PPP before Milestone B.

For research and development and pre-systems acquisitions the requirements are less defined; the CPI assessment is to be conducted as early as possible. According to the Department of the Army guidance, if CPI is identified, a PPP must be submitted within nine months of the CPI discovery.[7] The challenge here is for the technology manager to determine at what point in the research and development process the technology is mature enough to assess.

Great technological advances are not always discovered at well-established cleared defense contractors with a wealth of policies on how to protect it. Many advancements are made in small uncleared companies where lack of a timely CPIA could place technology in jeopardy. Advanced technology occurs in the most unlikely places. Almost certainly, state-of-the-art technology is created in large defense contractor organizations. Equally, a small contractor's garage, university lab, or tin building in the middle of an industrial complex provides fertile ground for research. Contract vehicles such as broad area announcements and Small Business Innovative Research (SBIR) provide opportunities for the government to benefit from the levels of genius found within entrepreneurs. With that benefit comes the responsibility of the government to help the less-experienced contractor get to the level of security maturity to protect its technology and process.

The SBIR or other small contractor may understand how to protect proprietary information and how to use firewalls and secure e-mail. Many of these organizations are extremely small, however, and without a mature security structure. Small contractors may be a sole proprietor or a small group of scientists dedicated to developing the technology. Without the PM's involvement, they may not understand the specific threat to the technology or how to develop a company culture to recognize threats and who to report to. Without the PM's explicit direction, their efforts may fail to properly protect export-controlled, critical, or sensitive technology. In fact, without direction found in contracts or through involvement of knowledgeable government technical representatives, they may not know how to protect it.

Technology is extremely vulnerable during the research and development phase. Proper and required CPIA mitigate vulnerabilities. To wait until the technology transfers into the acquisitions phase could be too late. An adversary's discovery of sensitive, export-controlled, or critical program information before it is even assessed could doom a technology's development. The impact may not even be discovered until later in the production or fielding phases.

When to Assess

In contrast, a technology manager's early CPIA is non-intrusive and should be conducted as early as possible. The benefit of assessing early is understanding how to protect the technology when it proves successful. The CPIA findings could contain statements indicating that the technology could become classified, contain export-controlled information, or could contain CPI should the research prove successful. In other words, the

research and development efforts related to the technology can still be protected in the event that a breakthrough occurs.

The result of an early assessment is a clear understanding between the government and the contractor that the technology development should continue with focus on protecting the CPI. The PM and TPO can help the contractor with countermeasures as well as recommend Department of Defense, Federal Bureau of Investigation, and other available counterintelligence assistance. These assessments will help get the contractor to the level of maturity displayed at larger and more experienced defense contractors.

Providing Proper Oversight

Identifying technical data and how to protect it gives technologies a fighting chance to be developed without being compromised. Protection mitigates risk of unauthorized disclosure that occurs through security or export-control violations. Government Contracting Officer Technical Representatives/Contracting Officer Representatives/Contracting Officers (COTR/COR/KO) often take the lead on developing research and technology. Depending on their experience level, progress should be monitored by more-experienced contract officers to ensure that the technology is assessed. Without the oversight, it might not get done. When assigned as the technology lead, part of the COTR/COR/KO training should be the five-step OCA process.

Why should research and development efforts put so much effort into oversight? Here is why: Unlike research and development and pre-systems acquisitions, full acquisition programs are regulated by a Milestone Decision Authority that ensures this assessment takes place. During any phase of acquisitions, milestone requirements must be met prior to the technology advancing to the next phase. The assessments are required and progress is monitored. Pre-systems acquisitions and research and development items do not always fall under an MDA's purview, however. Commands working with pre-systems acquisitions should develop their own internal MDA to ensure CPI assessments are conducted.

The incident with the Joint IED Neutralizer could have been prevented. The JIN article may very well have gone through an official public release process. Without the proper identification of sensitive, export-controlled, or technical data, however, the reviewers could not understand what would need protection. The technical managers and subject-matter experts should determine and identify technical data needing protection. Until that is done, programs are at risk before the acquisitions process even begins.

Identifying technical data and how to protect it gives technologies a fighting chance to be developed without being compromised.

Biography

Jeff Bennett is the G-2 research and technology protection officer for U.S. Army Space and Missile Defense Command/Army Forces Strategic Command in Huntsville, Ala. He retired from the Army in 2005 after serving in numerous command and staff positions in the United States and Germany. He previously worked as a facility security officer for a defense contractor and is a published author of security certification books.

Footnotes

[1] Mark Mazzetti, "Bomb Buster for Iraq Hits Pentagon Snag," Los Angeles Times, February 12, 2006.

[2] Rick Atkinson, "When 'Physics Gets in the Way,'" Washington Post, October 2, 2007, p. A13.

[3] Department of Defense Instruction 5200.39, "Critical Program Information (CPI) Protection Within the Department of Defense," July 16, 2008, p. 2.

[4] Export-Controlled Technology at Contractor, University, and Federally Funded Research and Development Center Facilities (Arlington, Va.: Department of Defense, Office of the Inspector General, 2004).

[5] Deemed Export Controls May Not Stop the Transfer of Sensitive Technology to Foreign Nationals in the U.S. (Washington, D.C.: Department of Commerce, Office of Inspections and Program Evaluations, 2004).

[6] Department of Defense Instruction 5200.39.

[7] Department of the Army Pamphlet 70-3, "Army Acquisition Procedures," Jan. 28, 2008.

TaLKing SHOP

SPACE SUPP
EUROPEAN S

Support Element Chief Highlights Challenges, Joint Operations

INTERVIEW AND PHOTOS BY RACHEL L. GRIFFITH, USASMDC/ARSTRAT PUBLIC AFFAIRS

During Austere Challenge/Global Lightning 2011, the 1st Space Brigade sent Soldiers to Germany to support the exercise. The Army Space Journal spoke with COL Robert "Buff" Bruce, chief of the Space Support Element for U.S. Army Europe, about what support the Army Space community is providing to the European region. Below are his remarks.

What are some of the challenges you face while providing Space support to the Warfighter?

BRUCE We've got a limited amount of forces over here. We have four brigade combat teams, a number of brigade-sized enabler formations. In that I don't have any Functional Area 40 Space Operations officers assigned to them. We have a Space Support Element at the U.S. Army Europe level, one colonel, one lieutenant colonel, and two majors. We were sent over here in 2009 to establish the first Space Support Element in the U.S. Army Europe area of responsibility. We've had some previous attempts to do that, but nothing as sustained as what we have right now. We have established ourselves to be able to work across a number of the staff organizations.

The focus on what we do day to day is where do we link into Space; how do we do plans and policies; where is the Army perspective on all of those. So we respond back to our combatant commander, U.S. Army Europe, so they understand what we need from the Army here in terms of Army Space support and support from the rest of the U.S. security Space architecture. We integrate into training and exercises not just for the U.S. formation, but we're also involved in forces that go forward to support the International Security

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COL Robert "Buff" Bruce SECOND FROM LEFT, Chief, Space Support Element, US Army Europe, sits with Mike Connolly, director of the Army Space Personnel Development Office; Brig. Gen Teresa A.H Djuric, Deputy Director, Space and Intelligence Office, Office of the Under Secretary of Defense for Acquisition, Technology and Logistics; and COL Timothy R. Coffin, Deputy Commander for Operations, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, during the 2011 Space Cadre Symposium.

JTAGS KOREA

STORY BY RACHEL L. GRIFFITH, USASMDC/ARSTRAT PUBLIC AFFAIRS

The Soldiers assigned to Joint Tactical Ground Station Detachment C, 1st Space Company, 1st Space Battalion stationed at Osan Air Base, Korea maintain 24-hours-a-day, seven-days-a-week operation to provide in-theatre early missile warning support to Soldiers in the United States Army Forces, Korea region and world-wide. Led by Detachment Commander CPT Corey H. Ruckdeschel and Noncommissioned Officer in Charge, SFC Christopher L. Barber, these soldiers have the unique classification of being part of the only in-theater missile warning unit in South Korea.

When the soldiers are not on shift, they perform maintenance on their equipment; conduct individual and collective training and stay up-to-date on all Warrior tasks and drills, all while maintaining their proficiency on their JTAGS mission. The detachment leadership also finds time to fit personal and professional development into the unit's schedule.

Special thanks to the Soldiers pictured in the photos SPC Trenton C. Huntsinger, SPC Jonas L. Knehans, CPL Daniel Romero, SGT Robert D. Marks, SGT Kenneth M. Graw, SPC Brandon Schoen, SFC Christopher L. Barber.

PHOTOS BY RACHEL L. GRIFFITH, CPT COREY H. RUCKDESCHEL & SSG JASON PITRE.

Collectively you're talking about less than ten people working Space day to day in this AOR, but we work together as a team to develop the procedures and the techniques for leveraging the rest of the nation's investment in Space to this AOR, ...

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Assistance Force in Afghanistan to make sure they understand what Space capabilities are available to them, how do they access them, and who do they need to talk to when they get into theater. We maintain close communication with the guys in U.S. Central Command both on the Army side and down range so that when these units go into a location they'll already know who is the Space representative that they'll be able to tap into. None of these guys have Space officers, so now they know who to ask if there's a question. Sometimes the units will call back here, so at least they're remembering who we are, and then we can hook them up with the guys in the Central Command theater.

You work in a primarily joint environment, what do you see as your role?

BRUCE We also get involved in the Joint Capabilities Integration and Development System, and these are the formal products that we use to determine what are the capabilities that need to be developed in the nation. They set out the requirement so we work on the futures piece. As we get into operations those joint urgent operational needs have to be responded to. We help validate the Space portion of that and run that through the system. Then we get into the crisis actions. What's the issue at the moment, how do we respond to it, what's the concern of the joint force commander, what can we do to either answer the concern, or what can we do to get someone else to work it.

Inside the U.S. European Command (EUCOM) area of responsibility (AOR), I tap into the EUCOM element, LTC Sam Russ, he's in charge of Space and Special Technical Operations up there. We haven't had a demand signal for Space in this AOR, in the AOR that has the second largest collection of Space-faring nations outside of North America. We're pretty much letting U.S. Strategic Command and the Department of Defense interact for Space without any input from the geographical combatant commander in charge of this AOR. Whatever Strategic Command and the Office of the Secretary of Defense come up with, we're okay with that. That may have been okay in the past, but it's no longer so in the future. The interactions between the European Space Agency and European Space-faring nations, we're having a tighter relationship with those guys. The combatant commander of EUCOM is working on building partnership capacities. There is room for us to add to that and step in there and bring Space, particularly Army Space, as a part of that when we do our military-to-military engagements with these partner nations. That's providing us lots of opportunities, and we roll that into training and exercises. For Austere Challenge 2011 we're actually exercising one portion of Space with one of our partner nations. So that's Army Space in action.

So your customer base goes far beyond the Army spectrum?

BRUCE We work closely with the designated Space Coordinating Authority in U.S. Air Forces in Europe based out of Ramstein air base. Collectively you're talking about less than ten people working Space day to day in this AOR, but we work together as a team to develop the procedures and the techniques for leveraging the rest of the nation's investment in Space to this AOR, whether it's submitting a Space support request to the Joint Space Operations Center (JSPOC) out at U.S. Strategic Command to bring about Space support effects in a ship movement in one operation or another. And that's pretty interesting when you have to help the Navy.

It's really neat when you get a request from the Navy in Europe that says, "I have a problem with electromagnetic interference. I had it at this port, I'm going to another port, what can you do to help me?" We're working with the U.S. Air Forces in Europe guys to come up with tactics, techniques, and procedures that we've used down range before. Set that in motion with the JSPOC—we coordinate with the EUCOM J6 (Joint communications section) and other respective J6s so we know what we need to do. So when they start to report the interference from the ship, we're all ready to go and have those resources in place focused to help them solve that problem.

Do you support anyone outside of the EUCOM theater?

BRUCE We also provide support to U.S. Army Africa. They do not have a Space Support Element or even a Space officer. They'll get one this summer. For the Combined Joint Task Force-Horn of Africa noncombatant evacuation and repatriation operations (NEO), we began that planning in December. U.S. Army Europe was asked to provide Space assistance. We helped develop the appropriate planning materials, working with each of the staffs to ensure they could take advantage of the latest capabilities we have and

The Space officer is the one who has the broader picture, can see across the staff boundaries, and say here is how I can pull the team together, across the staff to solve a common problem.

in some of the tactics, techniques, and procedures that have been developed over time, so when they go to execute the mission they have the latest and greatest to work with. We set up those capabilities with the JSPOC so if and when the NEO was activated, then we could turn those capabilities on and have a flood of information.

It's the same way with Operation Odyssey Dawn in Libya. We were able to take the basic information, understand what the initial commander's guidance was, but then U.S. Air Forces in Europe pretty much had the lead. You're a sounding board—"does this make sense;" "have you come across this before"—so we come up with a good Concept of Operations that they can integrate into their air tasking order. As the planes are flying, we were able to integrate the Space effects associated with it to facilitate their operations, or to enhance the operations. That's now transitioned into Operation Unified Protector under the NATO hat. It gives us a few more challenges going through NATO because it's a little command system with different authorities, but we have to set the condition for the successful use of Space as well.

Inside this theater, now that we have the Space structure set up, this has given me the freedom to start focusing on those specific Army Space issues in this theater. Whether it's dealing with electromagnetic interference, how do I know that it's going on, how do I locate the source of the disturbance, how do I rectify. That approach has caused a crossed community of support from EUCOM, from Army Space forces out in Landstuhl, back in JSPOC through the Global Satellite Communications Support Center. It's been a collective effort to do that. Previously it's been hit and miss; if you've been working frequency management here, you'd solve that but you wouldn't get who did or what the ramifications were. But if you take that into purposeful interference and an adversary coming after you, then you lose that whole piece if you're only trying to restore the service.

We've had success in laying the foundation to mitigate electromagnetic interference. We're going to take that across the rest of the Space force enhancement so if any interference occurs anywhere along the way we'll have tactics, techniques, and procedures that we can react to that. React is not good enough for me, though. We need to take the fight to the enemy at times, which means we have to understand how everyone uses Space. Physics is physics. It's important. You're limited in certain ways you can do that. Space guys understand that. They understand the architecture. So even though you can brief that you've got your adversary using a piece of equipment, he can't put it in context, because he doesn't know how it would be used. Space guys could come in and say this is how we would normally use this. Now, it doesn't get in the adversary's way of thinking, but at least a good way of coming at it. And they can help you identify vulnerabilities, that you could potentially exploit and take away your adversary's ability to use Space.

What's the biggest project you're working right now?

BRUCE The biggest project we have right now is implementing the Army Geospatial Enterprises policy inside this theater. How do you transfer geospatial information across all of the Army battle command systems and how do you use that to develop a common operational picture across the board and to serve as a basis for decision-making and situational awareness? How do you develop that for all to use? We are all over the map. What we've found is we've got some organizational challenges, we've got some equipment challenges, we have some procedure challenges.

This isn't just a Space issue, this is across the command. The Space officer is the one who has the broader picture, can see across the staff boundaries, and say here is how I can pull the team together, across the staff to solve a common problem. And then when you start them down the road and you have a little success these guys are smart enough. They understand their portion of how they use Space inside and how it's all pulled together. Then the Space guy can help them see the range of possibilities. Then it's really neat when the light bulb comes on and they start pulling things together and start pulling in from other sources – not necessarily, though, as Space sources, but when you pull them together through another product it starts to take on a whole stronger flavor.

We've actually had impacts on how operations go down because of our ability to pull information from a variety of authoritative data sources that when you look at in a stovepipe it's okay. But when you look at them together you get a different aspect that will cause you to go back and say is this really what I want to do, is this really the effect I want to have. So it makes a much tighter, cleaner scheme of maneuver so when you go through rehearsal you've got a closer solution to reality without really going through it. Then you can execute with minimum surprises.

EUROPEAN SATELLITE CENTER

PROVIDES VITAL ACCESS

BY RACHEL L. GRIFFITH,
USASMDC/ARSTRAT
PUBLIC AFFAIRS

Access to satellite communication resources is vital to Warfighters in theater. Without it, phone calls, Global Positioning System usage, and important data wouldn't be available. Without regulation of the satellite resources, however, military units could run into some major problems, namely, the inability to get what they need, because the bandwidth is being used elsewhere. This is where Regional Communications Satellite Support Centers (RSSC) come into play.

Located at Patch Barracks, Germany, RSSC Europe plays a special role in the satellite communication field. Its mission is unique, serving a theater made up of 93 nations. The support center is set up to be a single point of contact for the units it supports, planning usage for satellite communications (SATCOM) resources.

"I think the uniqueness is who we support and where we support," said John Pipkin, RSSC Europe manager. "Each one of the RSSCs can do the exact same things for a customer. It boils down to the theater. We support the U.S. European Command which has 93 countries. We also support U.S. Africa Command and Central Command areas of responsibility; we reach far out there to support our customers. It's the theater-unique things you have to do and the little idiosyncrasies that come with the countries. In Europe, I have to deal with 93 different personalities. It's the same thing with Africa."

While each center supports the same mission for their customer, the location in Stuttgart is vital to the success and customer support.

Each RSSC can take over the mission of another RSSC–it's called a virtual continuity of operations plan. However, the difference is being closer to your customer base and the ability to provide real-time support.

"If I was stateside, and I had a EUCOM issue to support, it's an eight-hour time difference," said Pipkin. "Over here, I can meet that customer face to face. I can literally sit down with them and figure out exactly what it is they want. If we have a point of discussion, both of my combatant commands are within 15 minutes of here."

RSSCs are in place essentially to plan usage of all satellite resources, including those utilized by commercial industry. At RSSC Europe, Air Force Civilians, Army Civilians, Soldiers, and Navy contractors work in the same location, all supporting the same type of mission for their particular areas of control.

In this location, the Air Force has five Civilians in place to manage the resources of the Extreme High Frequency protective band satellites.

"We support EUCOM and AFRICOM with satellite resources they use when they deploy and strategic usage for nuclear command and control. They both have units that deploy, and they both have requests for satellite resources, and we give it to them based on guidance," said Wes Costello, Extreme High Frequency chief.

While each section has its own chief, and their missions don't overlap, they all support the same essential function: resource management.

"If this was Dish Network, or a commercial industry, and there were a million people who wanted to use the satellite but they could only allow access to 500,000, in commercial industry, they take the first 500,000," Costello said. "But we can't do that. We have to determine, based on needs and priorities, who gets the access. That's where management comes into play."

Access to satellite resources is finite, as only a portion of the resources are available for military use. So, it is essential to have the RSSCs in place to plan how to distribute the satellites' use. To avoid conflicts, the requests are ranked by mission priority, ensuring the resources are given to the most vital mission first.

"With greater bandwidth requirements . . . proper planning and regulation are essential in order to support all combat and contingency operations," said MSG Doug Bram, noncommissioned officer in charge of RSSC-Europe.

In total, there are three RSSCs worldwide, located at MacDill Air Force Base, Fla.; Patch Barracks, Germany; and Wheeler Army Airfield, Hawaii. Additionally, there is a Global Satellite Support Center located on Peterson Air Force Base, Colo. These centers are staffed by U.S. Army Space and Missile Defense Command/Army Forces Strategic Command Soldiers and joint-service Civilians.

The support centers were first established in 1988 to provide SATCOM services to ground-mobile forces. Their mission has evolved over the last couple of decades to include narrowband, protected, and commercial spectrums.

The RSSC is only one step in the SATCOM resource system. Once their plan is set, it is passed on to an operations center for execution. In the case of RSSC Europe, their plans are passed on to the Wideband Satellite Communication Operations center in Landstuhl, Germany, operated by Charlie Company, 53rd Signal Battalion.

BELOW PFC Jason Myers looks over training information.

IN TOUCH WITH MOST OF THE WORLD

Charlie Company Reaches Two-Thirds of Globe through Satellites

STORY AND PHOTOS BY RACHEL L. GRIFFITH, USASMDC/ARSTRAT PUBLIC AFFAIRS

Located in a nondescript cement building, the only indication the 53rd Signal Battalion is in operation is the telltale orange color of the sign, signaling the outfit is a signal battalion. Charlie Company, 53rd Signal Battalion, 1st Space Brigade is responsible for the Wideband Satellite Communications Operations Center (WSOC) in Landstuhl, Germany.

"Our mission is to provide payload assuring for the Department of Defense wideband satellite constellations. We basically monitor the health and welfare of the data streams coming off of satellites providing communications for major commands around the globe," said CPT Theodore E. Perry III, former company commander.

The WSOC is responsible for executing and monitoring the usage plans put forth by the Regional Satellite Communications Support Center Europe. About 60 Soldiers are assigned to the company and are mostly satellite operator/maintainers, who take the importance of their mission seriously. The operations floor is home to a sea of monitors, displaying information the Soldiers have been specifically trained to decipher.

"Our mission is to ensure the health and welfare of the satellite is maintained properly, so the soldiers on the ground can have proper support," SGT Lowell Sitez explained.

The mission in Landstuhl is unique, offering Soldiers there a view few others can access.

"With the satellites that we see into, we can take a look at upwards of two-thirds of the globe at any given time. This is a capability that most sites, if any others, do not have," Perry said.

The WSOC operates in a partnership of sorts with the Regional SATCOM Support Center Europe, executing and monitoring the payload access plan set forth by the RSSC. The mission executed at their location is in support of more than 30 countries, making it one of the most diverse locations in terms of the customers it serves.

Charlie Company is one of six companies worldwide that make up the 53rd Signal Battalion which is headquartered in Colorado Springs, Colo. Each has the same mission responsibilities, though the location in Hawaii is the first with access to the Wideband Global Satellite resources.

LEFT Soldiers of Charlie Company, 53rd Signal Battalion, 1st Space Brigade, led by commander CPT Ted Perry and 1SG Christopher Harbach, pose outside of their building in Landstuhl, Germany.

ABOVE SPC Russel Malinsky stands ready to explain his mission requirements during a recent command visit by 1st Space Brigade leadership.

LEFT 1SG Christopher Harbach briefs 1st Space Brigade leadership.

BOTTOM LEFT SSG David Blotter smiles while discussing his role with COL Eric P. Henderson during a command visit to the company.

TaLKing SHOP

ACTING AS ONE TEAM

Commercial Imagery Allows Sharing with Partners, Aid Organizations

CPT MIKE HANCE
COMMERCIAL IMAGERY TEAM OIC

When GEN David H. Petraeus, commander of the International Security Assistance Force in 2010-11, published his guidance for conducting counterinsurgency operations in Afghanistan, one of his main points was the need to act as one team. He encouraged U.S. forces to work closely with their international and Afghan partners, stating the absolute need for acting in cooperation. Working together in a joint operating environment with coalition and Afghan partners requires the ability to share products, such as satellite imagery.

Access to satellite imagery is a key component to planning and conducting operations, but many times U.S. forces obtain classified imagery from National Technical Means, severely limiting the ability to share it with partners. A solution to this problem is the use of commercial imagery. The U.S. Army Commercial Imagery Team (CIT) is a specialized team providing high-resolution, unclassified commercial satellite imagery to U.S. forces, coalition forces, and nongovernmental organizations that can be openly shared with coalition partners and Afghan and Iraqi counterparts.

The CIT is an operational element of the 1st Space Brigade, a subordinate command of the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command. The team is under operational control to U.S. Central Command (CENTCOM) and works in conjunction with the National Geospatial-Intelligence Agency (NGA), topographic community, intelligence community, and CENTCOM's commercial imagery collection managers.

A member of the Commercial Imagery team, in support of Operation Iraqi Freedom, shares imagery with coalition forces. The images accessed by the Iraqi forces were used, in part, to assess damage from an oil explosion over a month-long period .

The CIT has a unique, direct relationship with the NGA and the commercial imagery providers, DigitalGlobe and GeoEye. The CIT has an agreement with the NGA that allows the receipt of raw imagery directly from DigitalGlobe and GeoEye over a 45 megabytes per second connection into a Virtual Ground Terminal that automatically processes the raw imagery into an ortho-rectified National Imagery Transmission Format Standard accompanied by subimages, symbols, labels, text and other information. This minimally processed imagery can be provided to units with organic geospatial support (S2/J2, Topographical Teams, Geospatial Support Teams, etc.) so they can manipulate the images themselves. Or the CIT can package imagery into a finished format, such as GeoPDF, GeoTiff, JPEG, Multi-resolution Seamless Image Database, and hard-copy maps, for units lacking organic geospatial assets.

The CIT has 72 terrabytes of archived commercial imagery covering a large portion of the CENTCOM area of responsibility. This allows the CIT to rapidly process and deliver imagery requests, many times within hours of the request. This archive grows each month with updated collections of pan-chromatic (black and white) and multi-spectral (color) images. All of the archived imagery is less than one year old, ensuring the relevancy of the products provided. The CIT also has a direct access relationship with NGA Source for the submission of commercial imagery new collects.

A second key task of the CIT is to provide mobile training teams to Iraq and Afghanistan to teach TalonView mission planning and mapping software to requesting units. This training focuses on teaching users how to request commercial imagery and how to use TalonView to manipulate the imagery to create their own products.

The CIT has been deployed to CENTCOM since 2004, answering thousands of requests for imagery, providing education to hundreds of coalition partners, and supporting hundreds of military units, coalition partners, and non-governmental organizations. Even though deployed to U.S. Central Command, the CIT has provided products to U.S. Africa Command in an effort to thwart would-be pirates, and products in support of humanitarian relief efforts for the Haiti and Japan earthquakes for U.S. Southern Command and U.S. Pacific Command.

The Commercial Imagery Team can be contacted with questions or to request imagery by NIPR e-mail at cit.rfi.centcom@me.navy.mil or SIPR e-mail at cit.rfi.centcom@me.navy.smil.mil. The CIT can be reached by DSN at (318) 439-6215. Or visit the Commercial Imagery Team SIPR Web site at http://gil.nga.smil.mil/cit.

Army Space Cadre News

Mike Connolly /// Section Coordinator

Mike Connolly is Director of the Army Space Personnel Development Office. He was an Army aviator and Space operations officer, with assignments to the Cheyenne Mountain Operations Center, U.S. Strategic Command, and U.S. Space Command.

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ASPDO Efficiencies

Since the inception of functional areas, the U.S. Army Human Resources Command (HRC) assignments officer for Functional Area 40 has been assigned excess to U.S. Army Space and Missile Defense Command/Army Forces Strategic Command with duty at HRC. During recent discussions to gain efficiencies and reduce over-strength within the command, the decision was made to billet the assignments officer against a major position within the ASPDO. This has resulted in the assignments officer becoming an integral part of the ASPDO organizational structure and more importantly, no longer excess.

Army Space Cadre Symposium

The ASPDO conducted the annual Army Space Cadre Symposium Aug. 1 to 5 in Colorado Springs, Colo. A total of 236 personnel, including students in Space Operations Officer Qualifying Course 11-01, participated throughout the symposium with a good representation of Space Professionals and Enablers (145 officers, 77 Civilians, five enlisted, and nine contractors). Post-symposium comments ranged from "fabulous" to "we need to continue to build on this each year." Planning for next year's symposium already has begun.

We Have Moved

The Army Space Personnel Development Office has moved back into Building 3 on Peterson Air Force Base. We are now located on the south side of the first floor in the old 1st Space Battalion area. During the move, some of our phone numbers have changed.

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Providing Capabilities through a Trained & Ready Army Space Cadre

By Mike Connolly

THE REGULAR OFFICER AND HIS BROTHER OF THE NATIONAL GUARD AND OFFICERS' RESERVE CORPS MAY TAKE GREAT PRIDE IN THEIR PRIVILEGE OF BEING AN OFFICER. THE SERVICE THEY RENDER IS BEYOND PRICE. THE "MILITARY MIND" NEED NOT BE BACK FROM COMPARISON WITH ANY TYPE OF MIND; WHEN THE CHIPS ARE DOWN THESE MINDS HAVE DELIVERED WHAT WAS REQUIRED.

THE OFFICER'S GUIDE, MARCH 1951 EDITION

Reading through the 1951 Officer's Guide is not only interesting but in a way humorous in how certain topics, many that we now take for granted, are addressed. The similarities in its editions 60 years ago and today are what provide the greatest insight, however. Officers who served in both World War II and Korea were in an era of persistent conflict stretching over a ten-year period. They faced the challenge of completing the requirements of their life-cycle development to include training, education, and experience. They were held to the highest standard and deemed service to the Nation as a matter of selfless behavior. They were professional and patriotic. Today's Functional Area 40 (FA40) Space Operations officers could be described in much the same way.

Army Space Cadre members must continuously strive to improve themselves through professional development opportunities, increased education, and challenging assignments while they contribute unique operational capabilities to the Warfighter. The Army Space Personnel Development Office (ASPDO) is focused on assisting FA40s and other Space Cadre members in meeting these requirements. Although providing FA40s with recommendations and guidance to meet their career goals is relatively straightforward, providing the same service to other military and Civilian Space Cadre members is more challenging; not impossible, just challenging.

The ASPDO has requirements to help prepare Space Cadre members to meet their professional responsibilities of providing Space-based capabilities in military operations. Through professional development events such as the recently completed Army Space Cadre Symposium, the management of Space-related education such as Space 200 and Space 300, and information sharing through links such as the Army Space Knowledge Management Site, the ASPDO is committed to achieving our vision of providing a trained and ready Army Space Cadre.

Training Insights

By Joan Rousseau & Norm Reich

Larry Mize /// Section Coordinator

Larry Mize is Chief of Space and Ground-based Midcourse Defense Education Training and the Deputy Directorate of Training and Doctrine. As a U.S. Navy officer, he specialized in naval intelligence, aircraft carrier operations, naval special warfare (SEALs), and Space operations, including assignments at U.S. Space Command and U.S. Strategic Command.

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Alternative Methodologies for Learning

Simple as LEGOs & Pipe Cleaners

Okay, you're given the option in learning a new subject: Death by PowerPoint or play with LEGOs® and pipe cleaners? Who doesn't like LEGOs?

As instructors we face the challenge of making the materials we present relevant, interesting, and, most importantly, help our students grasp concepts. The first step is for us as instructors to understand how we learn. So how do we learn? The simple answer is someone teaches us something, and we retain the information and master the skills. The truth is trial and error. Think about it. When you were a baby and were learning to walk did you sit in a class and take notes from your parents before you took your first steps? Of course not. You teetered, you tottered, you fell down and went boom. But eventually, for the most part, you mastered it.

Now jump ahead a few years when you really had to go to class and learn about things that were not at all familiar to you. Reading, grammar, chemistry, calculus, physics, the rules to floor hockey…okay, maybe the last one wasn't so hard, but the rest took time and effort. And

Not everyone learns the same way. Some learn through listening; some through seeing; and some through doing.

not everyone learns the same way. Some learn through listening; some through seeing; and some through doing. Most people combine these learning styles in order to better retain the information. Our challenge as instructors is to find the right blend of these learning styles to make the training both memorable and fun.

So now let's talk about some boring, but relevant, stuff. You know, the information you are told you need to know but in reality have no desire whatsoever to sit through...sort of like British Literature in high school. Let's talk specifically about Space Systems Acquisition. To quote Charlie Brown, "Ugh!" What is this thing we call "Space Systems Acquisition" and the "Joint Capabilities Integration and Development System?" And what about this other nightmare, "Planning, Programming, Budgeting, and Execution System?" I know many Acquisition Corps officers and noncommissioned officers are saying to themselves, "Oh no! I feel myself getting ready to be physically ill." If they feel that way about these processes just imagine how our students, many of them junior enlisted personnel, feel when we present this in the Army Space Cadre Basic Course. As a primary instructor for this topic I must be honest and tell you I felt the same way. To make this topic more enjoyable and memorable it was time to think outside of the box, literally and figuratively.

The answer is LEGOs. By taking these simple toys and bringing them into the class I introduced our students to the critical thinking required for a successful new system design and acquisition.

Acquisition starts with identifying and defining your requirements. Imagine you want a new car. Are you going to let the dealer tell you what you want? Of course not, you're going to tell him what you want; otherwise you could end up with a Barney Purple minivan when what you really wanted was a red Audi TT.

The task to our students is simple. The students are divided into two groups, those with a requirement and those who are the developers. The requirements group is given a picture of something they want the developer to build, in this case a LEGO truck or helicopter. The students have to define their requirement, not just their wish list but the "no kidding what you need" requirement. Then they hand off their requirements to the developer who builds what they want.

Simple, right? This is not as easy as it seems. Students not only have to interpret the requirements, but they have to come up with alternative solutions should they not have all the parts to their system. And wait, I haven't even thrown in the cost restrictions. What if a green LEGO costs $5,000 and all the requirements group has to spend is $1,000? We all know the syndrome, a "Mercedes taste with a Ford budget." What to do, what to do?

The objects to be built are always relatively common things that we see in our day-to-day lives. The students define their requirements and pass them to the developers to build the product. But sometimes we have to wonder what they were thinking.

Speaking of lecture; isn't that the very instruction method we are to avoid using in our classrooms? Of course it is.

When I first started bringing out the LEGOs I got exactly the response I expected…eyes rolled as far back in people's heads as is humanly possible (both students and instructors alike). In the words of a co-worker, "Are you crazy? I'm 50 years old and you want me to play with LEGOs?" But ten minutes into the exercise, students are engaged, actually enjoying the process of requirements definition, systems engineering, and product development. Other instructors now teach this lesson and use the LEGOs. My co-worker is a LEGO convert.

Similarly, the AN/TPY-2 (Forward Based Mode [FBM]) Sensor Manager Qualification Course was faced with a dry topic to teach–communications architecture. We all have had to receive such lessons, the ones that show line and block charts representing equipment, network lines, message types, and those amazing "clouds." Many of these charts are merely copy-pasted from someone else's presentation and contain an abundance of graphics irrelevant to the learning objective. Given to the instructor to use, it is intended that they guide students' attention toward just the right boxes and lines meaningful to the lesson, but oftentimes the instructors' broad hand gestures never make it clear. Quickly, students tune out the lecture and finish the lesson having learned little.

Speaking of lecture; isn't that the very instruction method we are to avoid using in our classrooms? Of course it is. But how else can an instructor teach how radar data flows all the way from Japan to Hawaii to North America? You can't exactly have the student physically walk the path of the lines. That would be a long trip, especially when it came time to go under the ocean or into Space.

Consider that any graphic on a PowerPoint slide can be made into something physical. Why not print the block graphics of the communication equipment and those "clouds" and cut them out like pieces of a game that can be picked up and moved around? The letters of message format types such as "XML" or "VMF" can be written onto small blocks of wood. Communication lines on a slide also can be made into something tangible through the use of string or wire. Locations where these pieces are really found can be printed maps. Voila! You now have a great way to teach communication architecture that is hands-on, a preferred method of instruction.

Here is what we did in the AN/TPY-2 (FBM) Sensor Manager Qualification Course. We printed photographs of each piece of equipment and operations center included in the architecture. Each photo was mirrored so that when cut out, it could be folded over, making it double sided. Then using those black binder clips (a.k.a. butterfly clips) that we all have in our supply cabinets, we clipped the paper, removed the "wings" of the clips, and had a nice base to make the paper piece stand up. We even put labels on the bottom of the clip with the equipment or operations center name so it could be clearly identified by students who couldn't remember the exact title. Then, using wire from coat hangers, we created the surface cables that run between the components–"z" shaped ones for satellite signals. Using half-inch cubes of wood purchased from a hobby store, we wrote the letters of message format types on the sides. Finally, we printed maps of the countries where these components are located and taped them down to a table.

Our lesson starts with a quick line-and-block chart to give the students their first look at the architecture, then we all move to the table where the instructor repeats the instruction by picking up and placing down each piece in the order that the data flows from the starting point to the end. After this demonstration, the table is wiped clean of the pieces and a student is asked to do the same. It is surprising how many students start confidently but then quickly realize that they don't understand things as well as they thought. With the pieces in front of them, it doesn't take long for them to work through their own shortcomings by themselves, reasoning through the architecture by using problem-solving methods that work for them; eliminating pieces they know are not part of the architecture, establishing connections mid-way, working backward, or by putting together small links that lead toward a complete path in the end.

Watching the students use the "game board," it is easy to see additional benefits beyond the learning objective; benefits that naturally come from practical exercises such as better rapport with their classmates and leadership through peer-to-peer instruction. Also, instructors become quickly aware of individual student shortcomings and can quickly tailor a new exercise for them by simply re-arranging the game board.

Student feedback regarding the use of our game board has been overwhelmingly positive. Students frequently tell the instructors that the game board helped them learn because they were able to put their hands on something. Leaders who have come through the course have even asked for copies of the pieces so they may use the game board for their own unit training. Mission accomplished.

Joan Rousseau is the course manager for Tactical Space Operations courses and Norm Reich is course manager for the AN/TPY-2 FBM Sensor Manager Course, both in the Future Warfare Center Directorate of Training and Doctrine.

SPC Anthony Moore, Alpha Detachment, 1st Space Company, in product production. The objects to be built are always relatively common things that we see in our day to day lives… .

Directorate of
Training & Doctrine

Space Training Division

The creation of the Directorate of Training and Doctrine (DOTD) on Oct. 1, 2010, allowed for unity of effort in delivering the highest quality of Space and Missile Defense education to Soldiers. The new organization established two institutional schools within DOTD–the Space Training Division and the Missile Defense Training Division. This implementation was critical in the organization's effort to meet its mission to provide training, education, and doctrine to enable Space, Missile Defense, and high altitude full-spectrum operations by Army Space and Missile Defense forces in support of combatant commanders. This is the third installment of focused articles on DOTD in the Army Space Journal and highlights current and future developments in the Space Training Division.

Daryl Breitbach //// Bio

daryl.breitbach@smdc-cs.army.mil

Daryl Breitbach is the Directorate of Training and Doctrine (DOTD) Chief of the Space Training Division, responsible for managing Space training and education courses. He enlisted in the U.S. Army in 1996. Upon completion of Officer Candidate School in 1999, Mr. Breitbach was commissioned as a signal officer and served as a platoon leader and operations officer for a tactical signal company. He was assigned to the U.S. Army Space and Missile Defense Command (USASMDC) in 2001 and served as a Space electronic warfare detachment operations officer; aide de camp to the Deputy Commanding General for Operations; Army Space Support Team operations officer and team leader; and company executive officer. Mr. Breitbach completed deployments in support of Operation Enduring Freedom and Operation Iraqi Freedom. Prior to joining the DOTD training team, Mr. Breitbach worked as a senior military analyst supporting the USASMDC Battle Lab.

FWC DOTD Organization

In 2001 when the U.S. Army Space and Missile Defense Command's institutional training began it did so with one course, the Functional Area 40 (FA40) Space Operations Officer Qualification Course (SOOQC) which graduated 14 students that year. In 2011 the Army's Space and Missile Defense schoolhouse, within the Future Warfare Center's Directorate of Training and Doctrine, offers more than 24 courses and will train and graduate some 1,400 students. Additionally, the instructors and faculty will deliver Space knowledge and leader development education to another 1,800 Soldiers and Civilians across the Army and the Department of Defense through a variety of training venues outside the Space and Missile Defense schoolhouse.

Course Listings

Course Manager Contact Information

SOOQC	Dave Berge: david.berge@smdc-cs.army.mil
SSLS	Mike Russell: michael.russell@smdc-cs.army.mil
ASCBC	Mike Hillam: michael.hillman@smdc-cs.army.mil
TSOC and TAVs	Joan Rousseau: joan.rousseau@smdc-cs.army.mil
SATCOM EMI and ACSOC	LTC Rob Berg: robert.berg@smdc-cs.army.mil
JTAGS IQT	Greg Hatfield: gregory.hatfield@smdc-cs.army.mil
JTAGS LDC	Keese Pond: keese.pond@smdc-cs.army.mil
Space Knowledge	Tom Coleman: thomas.coleman@smdc-cs.army.mil
CGSC Space Leader Development	Tom Gray: thomas-gray@us.army.mil

Space Operations Officer Qualification Course

The 11-week SOOQC continues to evolve to keep pace with the dynamic Space technologies and capabilities while also remaining relevant with respect to the current operational environment. Today as part of the SOOQC each FA40 student endures the rigors of multiple briefings, examinations, and numerous course exercises to demonstrate proficiency and understanding of satellite-based capabilities and the tactics, techniques, and procedures to provide Space operations support to full-spectrum operations. In fiscal year 2012, DOTD will conduct the first SOOQC designed for U.S. Army Reserve and Army National Guard FA40s conducted over a two-year period to meet the reserve component training requirements and civilian job responsibilities. During year one students will complete the Space 200 portion of the SOOQC and during year two students will complete the Army instruction portion of the SOOQC.

SOOQC

Space Senior Leader Seminar

Beginning in 2010 and offered annually, the SSLS is a four-day course designed to provide Space cadre in key senior Space positions a greater advanced and strategic understanding of the Army's role in Space. The seminar-style format includes guided discussion and student reading to facilitate discussion on current issues and themes, including Space cadre leader development and mentorship; the Space enterprise and Space mission area contributions to Army and Joint, Interagency, Intergovernmental, and Multinational operations; strategic skills for Joint and Army assignments; and Joint Capabilities Integration and Development System concepts and perspective. Students attend Space 300 in conjunction with the SSLS.

SSLS

Army Space Cadre Basic Course
Phase I and Phase II

The one-week ASCBC Phase I is a Space fundamentals course recommended for all command Soldiers, Civilian staff, and contractor employees who require a foundational understanding of Space mission areas, Space systems, Space organizations, and operations. The ASCBC foundational Space knowledge is a prerequisite for the Tactical Space Operations Courses. The one-week ASCBC Phase II builds upon phase I topics and provides education in advanced Space mission areas to include Space control, Missile Defense, missile warning, Space acquisition, Annex N, and special program areas. Phase I and II or Phase I along with a functional area initial qualification training (Army Space Support Team, Joint Tactical Ground Station, Army Communication Systems, AN/TPY-2 Sensor Manager, or Ground-based Midcourse Defense Operator) satisfies Soldiers' education requirements for the Army Basic Space Badge. Completion of Phase I and II satisfies the education requirements for the Civilian level I Space Cadre Certification.

Tactical Space Operations Courses

TSOC

Space Operations System (SOS) migration to the Distributive Common Ground System–Army: The two-week TSOC-SOS training focuses on the Space analytical tools and software applications Space Support Elements and Army Space Support Teams use to provide Space force enhancement products, analysis, and planning support to full-spectrum operations. Students receive hands-on application training and complete an end-of-course practical exercise that requires them to apply critical thinking, demonstrate knowledge, apply the various SOS capabilities and other reach-back Space capabilities in a tactical Space force enhancement scenario.
In 2011 the Space analytical software tool capabilities of the SOS migrated to the Distributive Common Ground System–Army (DCGS-A) program of record. The DOTD will continue to train Army Space operators on Space analytical software tools once integrated with DCGS-A. The DOTD recently completed the construction of a classroom dedicated to DCGS-A training that includes a DCGS-A training server and workstations for 12 students.

Space Tactics, Techniques, & Procedures

TTP

The one-week TSOC-TTP course instructs deploying Army Space Support Teams and Space Support Elements how to plan and integrate Space capabilities to support and enhance tactical, operational, and joint military operations. Initially focused on the U.S. Central Command area of operations, the course has evolved to cover Soldiers preparing for other mission areas and continues to evolve and update as new Space-based capabilities emerge and new TTPs are developed to meet the ever-changing current operations environment. Beginning in fiscal year 2012 the TSOC DCGS-A and TTP courses will be offered in a combined hybrid course training Space software tool, reach-back resources, and TTPs.

Joint Tactical Ground Station Initial Qualification Course

JTAGS-IQT

The seven-week JTAGS course prepares operators for their 24/7, in-theater, assured early missile-warning mission. Instruction focuses on capabilities and operations of JTAGS equipment to include major components, controls, and indicators; and missile event processing. Hands-on instruction allows students to practice processing real-world missile events from the theater they will support.

Training Assistance Visits

TAV

When requested, the DOTD deploys a tailored Space training team to support unit training and leadership education for units preparing to deploy in support of Operation Enduring Freedom or Operation New Dawn. Over the past seven years support to corps, division and brigade combat team units has focused on in-theater Space resources and capabilities, and Space TTPs. The DOTD Space Training Division continually strives to provide challenging, relevant training and education for members of the Space cadre, USASMDC/ARSTRAT staff, as well as, Soldiers and Civilians across the Army. Additional information about these and other Missile Defense courses is found on the Command Net Training Link or in Army Training Requirements and Resources System under school code 129.

Army Space Communications System Operator's Course

The ACSOC teaches Soldiers to conduct ground mobile surveillance and assessment of Space systems in support of military and civilian operations.

ACSOC

JTAGS Leader Development Course

In 2010 the first JTAGS Leader Development Course was conducted to provide advanced training in certification, missile event processing, mission operations, system administrations, communication, and maintenance of the JTAGS system. The two-week JTAGS LDC immediately follows the IQT for Soldiers assigned to crew and detachment leadership positions.

LDC

Defense Support to Civil Authorities

The TSOC-DSCA training focuses on Space force enhancement support to domestic events including a wide range of natural disasters as well as planned events (political conventions, sporting events, etc.). The TSOC-DSCA covers domestic operations events and planning as related to Space TTPs, DSCA organizations, and legal considerations. The TSOC-DSCA students include Active ARSSTs, National Guard ARSSTs and Space Support Elements, and U.S. Army North staff.

DSCA

SATCOM Electromagnetic Interference Fundamentals

The SATCOM EMI course covers the basic principles of electromagnetic interference and foundational SATCOM theory to understand the EMI effects within the Space environment.

EMI

Space Knowledge & Leader Development Education

Because Space is a critical enabler across all warfighting functions, the presence of Space knowledge and leader development continues to expand in the training curriculum of schools and centers across the Army. DOTD instructors support numerous school and centers, such as the U.S. Army Intelligence Center of Excellence with instruction in the Captains Career Course, Pre-Command Course, Imagery Intelligence, Signals Intelligence and Strategic Intelligence courses; and the U.S. Army Fires Center of Excellence in the Joint Operations Fires and Effects Course, Fires Support Coordination Course, Army Operational Electronic Warfare Course, Electronic Warfare Functional Area 29 Course and Fires Center of Excellence Pre-Command Course. A resident DOTD instructor and an FA40 assigned to the Command and General Staff College (CGSC) provide daily Space education for the Combined Arms Center and CGSC schools, including the A537–Space Orientation and A543–Space Operations electives. Instructors provide educational support to the CGSC Master of Military Arts and Sciences program, Advanced Operational Arts Studies Fellowship program, and the School of Advanced Military Studies. Building on the success of current Space knowledge and leader development efforts, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command and Army Training and Doctrine Command have started an initiative as part of the Army Strategic Space Plan to expand Space knowledge across all Army centers and schools. Continuing into its seventh year is the strong partnership DOTD has established with the Air Force National Security Space Institute (NSSI) and Advanced Space Operations School (ASOpS). A DOTD FA40 and a civilian instructor assigned to the Air Force schools provide instructional support to the NSSI Space 200 and Space 300 courses and the numerous fundamental, deployment preparation, and advanced courses offered by the ASOpS.

CONGRATULATIONS TO THE

DOTD SPACE & MISSILE DEFENSE

GRADUATES

AN/TPY-2 (FBM) Sensor Manager Qualification Course

38 Trained & Ready

The Directorate of Training and Doctrine conducted the AN/TPY-2 (FBM) Sensor Manager Qualification Course in three sessions. The first pilot course took place in April with five students. Since then three additional classes have brought the trained and ready element total to 38. The course educates senior leaders and battle managers on the technical aspects of the AN/TPY-2 (FBM) radar. Graduates received 15 days of intense training consisting of ballistic Missile Defense systems and how radars are integrated to provide layered defenses, command and control operations, sensor management operations, and how to manage a missile event.

Susan Bancroft, quality assurance and training developer, observed that the course kept the students totally engaged. "It taught the students how to develop operation plans and courses of action to present to their leadership and develop comprehensive tactics, techniques and procedures for their operational mission," she said.

During feedback the students commented that they thought having the system engineers participate in the dialog was really productive and that the format of the program when developing products was dynamic and rewarding.

The course was conducted at the directorate's facility in Colorado Springs, and the sensor manager operators attended from across the Joint and Army community. The cadre for the course is Chris Berisford, Directorate of Training and Doctrine sensor management program manager; Norm Reich, course manager; William Koch, lead instructor; and Lindsey Lawton, instructor.

If you are interested in attending this course or would like to inquire about other course offerings please contact Clem Morris, 719-622-2916 or e-mail clement.morris@smdc-cs.army.mil.

COURSE 11-008

FIRST ROW LEFT TO RIGHT CPT Iaasac Simpson, CW2 William Jackson, SFC Gregory Tidwell, SPC Michael Elmore, SSG Joanquin Mullins, 1SG Gary Threets; BACK ROW LEFT TO RIGHT SGT Joshua Correll, SSG Andy Shaffer, 1LT Pedro Quintero-Mercado, SSG Benjamin Sharp, SSG Michael Watson, SSG Daniel Humphries, and SPC Ryan Hamlet.

COURSE 11-009

FRONT ROW LEFT TO RIGHT Senior Airman Brittney Dickson, Staff Sgt. Edward Guiang, Senior Airman Ryan Coffey, Staff Sgt. Jimmy Lopez, Staff Sgt. David Bonilla, Airman 1st Class Crystal Coleman; BACK ROW LEFT TO RIGHT SSG Michael Hoye, SSG Chad Kidwell, SSG Daniel Smith, and SSG James Smith.

COURSE 11-010

FRONT ROW LEFT TO RIGHT SGT Jake Mumm, SSG Billy Rodgers Jr., SGT Dustin Spencer, SSG Michael Whitehead, SGT Billy Cooper; BACK ROW LEFT TO RIGHT SGT Chad Phillips, SSG Curtis Jacobsen, SSG Reginald Corey, SGT Cody Kubischta, and SSG Kristopher Hodge.

Army Space Senior Leader Seminar Conducted

Following the success of the September 2010 pilot course of the Army Space Senior Leader Seminar (SSLS), the first formal iteration was conducted in May 2011. SSLS serves to fulfill the request from senior Space cadre leaders to broaden leaders' understanding of strategy at the Army, national, Department of Defense, services, and Joint levels. The course educates senior Army Space Cadre leaders, both military and government Civilians, on Army and Joint strategic topics such as in-depth discussions and interpretation of the Capstone Concept for Joint Operations, Army Capstone and Operating concepts, and the Army Strategy.

Offered annually, the SSLS is a four-day course designed to provide Space cadre in key senior positions a greater advanced and strategic understanding of the Army's role in Space. The seminar-style format includes guided discussion and student reading to facilitate discussion on current issues and themes, including Space cadre leader development and mentorship; the Space enterprise and Space mission area contributions to Army and Joint, Interagency, Intergovernmental, Multinational operations; strategic skills for Joint and Army assignments; Joint Capabilities Integration and Development System concepts and perspective. Students attend Space 300 at the National Security Space Institute in conjunction with the SSLS.

LEFT TO RIGHT Mike Russell, LTC Sam Russ, LTC Joseph Guzman, Bob Deivert, LTC Larry Roberts, COL George Wingfield, LTC Darius White, SGM John Mattie, LTC J. David Price, and Steve Ferrell.

CONGRATULATIONS TO THE

DOTD SPACE & MISSILE DEFENSE

GRADUATES

Recent graduates of the Ballistic Missile Defense System Asset Management Course at Patrick Air Force Base, Fla., are LEFT TO RIGHT James Traverse, course manager; CMSgt Frank Woodard, Capt Richard Fancher, Capt Joel Neuber, TSgt Tonya Cobarruviaz, Capt Joshua Markland, Capt Matthew Lord, SSgt Timothy Mellon, 2d Lt Russell Maynard, Lt Col Lynn Bentley, SrA Alphonzo Doss II, Maj Scott Brandimore, SMSgt Gerald Mcfadden, KNEELING SSgt Donald Freeman and A1C Marc Andrews.

Ballistic Missile Defense System Asset Management Course Graduates

Twenty-six students recently graduated from the Ballistic Missile Defense System (BMDS) Asset Management Course at Patrick Air Force Base, Fla. Members of the Air Force Technical Applications Center (AFTAC) attended the three-day course. The instructors provided in-depth training that covered BMDS capabilities, Readiness Conditions, Protection Capabilities, Operations Capabilities reporting and a host of other asset management functions. AFTAC will assume asset management responsibilities for one of the BMDS sensors that supports the Global Ballistic Missile Defense mission. Tim DeRamus, lead instructor for the course, stated that "these students were excited about their new role in the BMDS community and the responsibilities that they are undertaking." The students rated the course overwhelmingly as "outstanding." One of the students, TSgt Michael Walls, commented that "the course was an excellent introductory course and that the information was specific to their needs and extremely helpful." If you are interested in attending future BMDS Asset Management courses or want more information, contact James Traverse, course manager at 719-622-2963, james.traverse@smdc-cs.army.mil or Tim DeRamus, instructor lead at 719-622-2929, timothy.deramus@smdc-cs.army.mil.

Additional graduates of the Ballistic Missile Defense System Asset Management Course at Patrick Air Force Base, Fla., are LEFT TO RIGHT MSgt Ralph Himmelsbach, SSgt Russell Hultberg, and SSgt Peter Oliveri; and Timothy DeRamus, instructor lead.

Ground-Based Midcourse Defense (GMD) Operator Course 1-11

The Ground-Based Midcourse Defense (GMD) Operator Course 1-11 was conducted 2 May to 17 June in Colorado Springs. The graduates include Soldiers from the 100th Missile Defense Brigade in Colorado and 49th Missile Defense Battalion in Alaska and officers from the U.S. Air Force and U.S. Navy. In addition, Jim Traverse, an Army Civilian, and Joe Evans, a contractor supporting the Department of Training and Doctrine at U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, also attended.

Honor graduates were LCDR Douglas Pegher and SSG Benjamin Guritz. Distinguished graduates were LCDR Jeffery Weitz, SSG Steven Foley, Mr. Traverse, and Mr. Evans.

Air Force Lt. Col. Steven Krehbiel, class leader, will be assigned to the Joint Functional Component Command for Integrated Missile Defense. LCDR Weitz and LCDR Pegher will be assigned to U.S. Northern Command as missile defense officers. Mr. Traverse and Mr. Evans will become associate instructors for GMD Operator Course 1-12 and primary instructors for GMD Operator Course 2-12.

USASMDC/ARSTRAT DOTD has initiated transfer of the GMD Operator Course from the Missile Defense Agency to the Army. As part of this plan, Mr. Traverse and Mr. Evans are the first of seven Army Civilians and contractors to attend training and become certified as GMD instructors.

The seven-week-long course trains officers and enlisted personnel in GMD operations. This mission is designed to defend the contiguous United States from intercontinental ballistic missile (ICBM) attack by rogue nations. Students are trained in ICBM fundamentals; the ICBM threat; sensors, including radars and Space Based Infrared Systems; ground-based interceptors; and operation of the GMD Fire Control System. This system of systems is designed to detect and track inbound ICBMs in flight, and to launch interceptors to shoot down the ICBMs during the ballistic phase of flight. The standard for this course is mastery, and the passing standard for all graded measurements (tests and exercises) is 90 percent.

Personnel from the 100th and 49th will report to their units and begin 45 days of certification training, where they will become part of a crew. These crews are on duty defending America 24 hours a day, seven days a week.

FRONT ROW LEFT TO RIGHT 2LT Melkart Hawi, SSG Benjamin Guritz, SGT Scotty Rogers, CPT Scott Manson, CPT Michael Odgers, LCDR Jeffery Weitz, and LCDR Douglas Pegher; BACK ROW LEFT TO RIGHT SGT Wayne Chaput, SGT Jarrod Cuthbertson, Joe Evans, MAJ Kyle Zablocki, Jim Traverse, SGT Sean Clark, Lt. Col. Steven Krehbiel, SGT Brenden Good, and SSG Steven Foley.

FA40 Career Management -

CONGRATULATIONS TO THE GRADUATES

DOTD SPACE & MISSILE DEFENSE

LEFT TO RIGHT *MAJ Van Bryan, MAJ Brian Bolio, SFC Casey Taylor, CPT Joseph White, Joan Rousseau, and Mike Russell (Directorate of Training and Doctrine instructors).*

ARCENT SSE Training

The Space Training Division of the Future Warfare Center, Directorate of Training and Doctrine conducted a Tactical Space Operations Course–Tactics, Techniques, and Procedures Mobile Training Team for the U.S. Army Central (ARCENT) Kuwait Space Support Element Current Operations Section in April 2011 at the ARCENT headquarters, Fort McPherson, Ga. Students included two U.S. Army Reserve augmentees and one newly assigned Soldier, MAJ Brian Bolio, a Functional Area 40 graduate of the Space Operations Officer Qualification Course. The two augmentees, MAJ Van Bryan from Pennsylvania and CPT Joe White from Kentucky, were activated specifically to support the ARCENT Space Support Element (SSE) for a period of one year. SFC Casey Taylor, the ARCENT SSE noncommissioned officer in charge, also participated in the training. Immediately following this course the ARCENT team deployed to theater to participate in exercise Lucky Warrior.

Students received introductory and refresher training in a variety of topics, including orbital mechanics, satellite communications, Global Positioning System, and Space environmental impacts on Space systems. They also received instruction in areas such as submitting Space Support Requests, requesting tailored products through reach-back portals, and an overview of the various Space applications and Web sites that they will use in executing their mission for ARCENT.

ARCENT headquarters now is located at Shaw Air Force Base, S.C.

By MAJ Glen Hees

Transparency in Assignments Part II

Assignment Preferences & Tour Equity

Human Resources Command has long been interested in the concept of "talent management" as it pertains to the assignment and employment process. In the past, the assignment process was more preference based, with little or no input from the gaining unit on which officer they would like to receive. The exception to this was joint or other nominative positions that require certain skill identifiers. This preference-based model did well in filling billets with people but ignored the important aspect of aligning certain skills and talent with available jobs.

HRC recently beta-tested a version of Green Pages, a Monster.com-like Web application that allows users to fill out profiles and state career achievements and goals which augment their already existing official Army information. Utilizing this tool, officers could submit "applications" to jobs they were interested in during a movement cycle, the units would have access to the profiles of all those who were interested and be able to rank order them based on required desired talents and skills. What the testing found was that preferences were still largely based on location. No surprise when you consider the options of Fort Bliss versus Stuttgart, or Fort Campbell versus Vandenberg Air Force Base. In the near future, Green Pages will likely be integrated into the assignment process, but there are many issues that still need to be addressed, one of which is a better understanding of preference selection.

In the next article I will address the special circumstances considered during the assignment process. I will touch briefly on some of them in this article to illustrate the problem set. In the past, the assignment process included sending out a list of all open or projected jobs to be filled. The officer considered for Permanent Change of Station was asked to rank order these jobs and return them. These preferences were then matched up against all other submitted preferences and the additional assignment considerations were applied.

The recurring problem was uninformed preference selection. For instance, an officer currently stationed at Colorado Springs selecting four jobs within Colorado Springs as his or her next assignment, an officer only rank ordering the first three of 15 available jobs, or an officer with high dwell time only selecting joint or non-deploying billets. There are a number of considerations applied during the assignment process, but realistically, officer preference ranks low behind Army Manning Guidance, Functional Area 40 priorities, placing the right skills and experience (talent) in the right jobs, Department of the Army-regulated considerations (Exceptional Family Member Program or the Married Army Couples Program) and tour equity.

It is important for FA40s to have a broad foundation of experience to be successful in any number of jobs. Jobs in the operating force and generating force level are equally important as are other broadening experiences (Training with Industry, fellowships, etc.). Part of the job as assignment officer is ensuring tour equity for personnel in order to build that population of diverse FA40s. We are still a Nation at war; submitting preferences of 1. Peterson Air Force Base 2. U.S. Northern Command 3. Vandenberg, etc., with an abnormally high dwell time is just not realistic given the number of deploying FA40 billets that need to be filled. Additionally, many officers with strong technical backgrounds apply to extend in jobs that utilize their technical expertise, but the FA40 community also needs these officers to be leaders and step up to lead the Space Support Elements. Joint billets are another concern; if an officer already has Joint credit, another Joint job does not in any way benefit him or her. While it certainly may happen, it is very rare and avoided when possible. Bottom line: Think about what you need for your career, and where the career field needs you, not just in terms of favored geographical locations.

Please feel free to contact me with any questions or concerns regarding assignments. E-mail is always the best and quickest option and will allow me to research your question or concern and give you a more complete answer.

Section Coordinator

MAJ Glen Hees is the FA40 Assignment Officer at the Human Resources Command, Fort Knox, Ky. Commissioned as an aviation officer, his Space assignments have included brigade Space planner, Space control division chief, and commander, 4th Space Company.

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The following pages should be turned over to continue reading.

Flipside 2.0

USASMDC/ARSTRAT FEATURES

No your eyes are not deceiving you. These next pages are flipped by design.

Rotate 180°

Continuing Pride from page C1

are small in personnel numbers, they are the reason we exist as a Command.

Our forward deployed and forward positioned Soldiers were not able to march down the parade route, but believe me when I share that they were with us in spirit, and appreciated by those in attendance. It is an honor to lead such a patriot formation as we marched downtown, but is a much greater honor for a commander to be included in such a magnificent formation of heroes.

In 1944 at the surrender of German Army units at the Battle of Bastogne, BG Anthony McAuliffe was asked by the German Commander "for his credentials." McAuliffe gestured to the tough, seasoned war veterans around him. "These are my credentials," he said.

When I am asked by friends and colleagues as to how brigade command is going, I often say, "Ask my Soldiers, for they are the ones that do the heavy lifting every day." They are the reason we can legitimately say, "The Sun Never Sets on USASMDC/ARSTRAT."

1st Space Marches in Flight of the Flags parade

By DJ Montoya,
1st Space Brigade
Public Affairs

18F

photo by Rachel L. Griffith

photo by DJ Montoya

COLORADO SPRINGS, Colo. COL Eric P. Henderson, commander of the 1st Space Brigade, leads Soldiers and Airmen in the Flight of Flags entry down Tejon Street during the Colorado Springs 2011 Veteran's Day Parade on Saturday morning. The group, which was 8th in line, was composed of 30 Soldiers from the 1st Space Brigade, 11 Airman from Peterson Air Force Base, 10 Airmen from Schriever Air Force Base, and 10 Soldiers from Fort Carson. 'Pearl Harbor, 70 years in Remembrance' was the theme for this year's parade which boasted almost 100 entries.

Back to the Basics from page C1

compass and for you to embody the Warrior Ethos. If everyone is doing the right thing, it influences others to follow. As Professional Space Soldiers we will develop ethics to define our culture and enable Army Space to continue into the next decade.

We as leaders must ensure that every Soldier has balance in their day to day lives. Not only should our Soldiers be physically, mentally, and spiritually fit, they also must have a balance between Duty, Family, and Self. I will also place a high emphasis on fitness which will include Combatives. We will strive for all Soldiers in the Brigade to achieve level 1 certification. The imperative of Combatives is for every Soldier to have faith in one self to close and engage the enemy in Close Combat.

Each Command Sergeant Major comes with their own way of accomplishing things, and their own philosophy about how to do it. For me, this means fostering a command climate that focuses on Pride, Respect, Trust, and Loyalty–above all, creating a command that exudes a winning attitude. To the Soldiers of the 1st Space Brigade: Be Intense, Be Professional, and Be the Best. I look forward to serving with you all.

Missile Defense — An Insurance Policy for the Nation from page 1F

there already have been a number of vocal opponents speaking out about the supposed waste of having a Missile Defense system. They argue that it is too expensive, the technology is unproven, and that it is destabilizing in terms of deterrence and arms control.

While the critics articulate their arguments well, they ignore some important considerations. Yes, Missile Defense is expensive, but it is a "cheap insurance policy" if you think about it. As we marked the tenth anniversary of 9/11, consider the costs and damage to our economy from that attack. Now raise that by an order of magnitude if just one nuclear weapon impacts a densely populated region of the nation. Missile Defense is cheap by comparison. The technology has had challenges, but that is normal with any cutting-edge program. Consider America's first imagery satellite, Corona. The first twelve launches failed for various reasons, but we did not quit. We perfected the technology. And lastly, the point about Missile Defense being destabilizing is not valid, provided the GMD system remains at about its current size and arrayed against limited threats. Growing it too large could have the effect of destabilizing deterrence vis-à-vis Russia and China, but in its current limited form, GMD actually enhances deterrence by complicating an adversary's attack calculus.

As I write this, crews from the 100th Missile Defense Brigade and 49th Missile Defense Battalion are on duty, guarding the skies of America. They operate the GMD system 24/7/365, deployed in place, ready to execute their homeland defense mission on a moment's notice. They work closely with our supported command, U.S. Northern Command, as well as with the GMD developer-the Missile Defense Agency and their industry team. As the GMD system continues to evolve, USASMDC/ARSTRAT is providing critical capability to the Warfighter and to the citizens of our nation. 300 defending 300 million … securing the high ground.

Sun Doesn't Set on the 100th from page 1F

tracking capabilities, and eventually a defensive engagement capability for those regions, will protect U.S. forces and our allies who are in those theaters as well as protect the population centers within those areas.

For strategic defense capability the brigade is under the operation control of USNORTHCOM for executing our mission and linked in with the NORAD/NORTHCOM command center. We are integrated within their communications nets for command and control (C2) to conduct that mission. If you take a look at those radar detachments again; for example, the USPACOM-based AN/TPY-2 Det. 10, their sensor managers for the radar are actually located within the air operations center for that combatant command. Similar situations will exist for our USEUCOM and USCENTCOM- based assets. Because of that, anytime the PACOM, EUCOM or CENTCOM commands need missile defense information data regarding detection and tracking capabilities from those sensors, they only need to reach as far as their own operations center in order to get real-time data from our Soldiers who are serving within that detachment command.

As our program has started to mature with our radar detachments and with the European Phased Adaptive Approach capability, we are gradually starting to spread our capabilities into other geographic commands and with that, we are enforcing the mindset that "the sun never sets" on the 100th Missile Defense Brigade.

GEN Kehler Meets the Missile Defense Guards

Story and photo by CPT Michael Odgers, 100th Missile Defense Brigade Public Affairs

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FORT GREELY, Alaska—SSG Duane Ostrowski, a crew operator for the 49th Missile Defense Battalion, Alaska Army National Guard, explains his duties in the Fire Direction Center to GEN C. Robert Kehler, commander of U.S. Strategic Command, CSM Patrick Z. Alston, and Steve Callicutt, J8 director. Kehler visited Fort Greely on Aug. 30 to speak with Soldiers of the 49th and tour the missile defense complex. "This is a perfect mission for the Guard. It's what the Guard was meant to do – protect the homeland," he said. "I occasionally meet with our nation's leaders. While they may not know your name, they know who you are." Kehler and Alston also had lunch with battalion Soldiers.

LTG Richard P. Formica, commanding general, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, gives the opening remarks to officially kick off the 14th annual Space and Missile Defense Conference at the Von Braun Center, Huntsville, Ala. *Photo by Rachel L. Griffith*

SPACE & MISSILE DEFENSE CONFERENCE

Highlights Innovations that Add Greater Capabilities to the Frontlines

By Jason B. Cutshaw, USASMDC/ARSTRAT Public Affairs

HUNTSVILLE, Ala.—The Rocket City once again became the launching pad for leaders in the Space and Missile Defense universe.

With the theme of "Providing Capabilities to the Warfighter," the 14th annual Space and Missile Defense Conference took place Aug. 15-18 at the Von Braun Center. The conference was presented by the Air, Space and Missile Defense Association, the National Defense Industrial Association's Tennessee Valley Chapter, and the Air Defense Artillery Association.

"Our Space professionals are on point for our nation supporting the Warfighters and Civilians," said LTG Richard P. Formica, commander of U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, during the conference kickoff. "Today the Army has some 246,000-plus Soldiers deployed and forward stationed with more than 114,000 in operations in Afghanistan and Iraq. Our Soldiers are focused, and they're making progress every day under tough tactical conditions."

"Our Space operations Soldiers are in the fight," Formica added. "It's to these Soldiers and the ones they support to whom we commit to providing timely, relevant Space and Missile Defense capabilities."

Formica, along with USASMDC/ARSTRAT operations sergeant major, SGM John Mattie, introduced SSG Andrew Brown, 1st Space Company, 1st Space Battalion, Colorado Springs, Colo., and SPC Brandon Kitchen of B Company, 53rd Signal Battalion, Fort Meade, Md. Brown and Kitchen are the command's 2011 Noncommissioned Officer of the Year and Soldier of the Year, respectively.

Other speakers throughout the week included Huntsville Mayor Tommy Battle; LTG Patrick O'Reilly, director of the Missile Defense Agency; LTG Dennis Via, deputy commander of Army Materiel Command; and Lt. Gen. Susan Helms, the first female military astronaut and commander of Air Force Space Command and the Joint Functional Component Command for Space, U.S. Strategic Command, at Vandenberg Air Force Base, Calif.

During the week there were panel discussions with subject-matter experts, social receptions, and numerous other events to inform the public of the Space and Missile Defense community's current and future endeavors.

At the conference, one SMDC leader talked about the importance that the week means to the men and women in uniform who are in harm's way.

"The conference has been outstanding," said COL Eric P. Henderson, 1st Space Brigade commander. "It is good to meet our partners in technology and industry and see what innovations they have, and to see if and when we will have capabilities that would apply to our mission set."

"The work that is being done in the nanosatellite department looks like it will have an application that will benefit our Soldiers," Henderson said. "I look forward to seeing how we can apply it to what the troops need."

More than 250 companies, large and small, had booths featuring everything from full-size displays to computer simulations of future technologies. Companies presented military vehicles such as the Avenger weapon system, a Medium Extended Air Defense System Tactical Operations Center, a nanosatellite demonstration, and a mock battle command and control system.

A digital recreation of the control center of the Ronald Reagan Ballistic Missile Defense Test Site Operations Center located in Huntsville, Ala., as it tracks satellites from facilities located more than 7,000 miles away at the Ronald Reagan Ballistic Missile Defense Test Site at Kwajalein Atoll, Republic of the Marshall Islands. *U.S. Army graphic*

OPERATIONS CENTER WATCHES SKY

By Jason B. Cutshaw, USASMDC/ARSTRAT Public Affairs

HUNTSVILLE, Ala. – Saving time and money while performing a vital mission for national defense from half a world away is the goal of the Ronald Reagan Ballistic Missile Defense Test Site Operations Center (ROC) located in Huntsville, Ala.

The ROC command and control facility at the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command in Huntsville will soon become the primary command-and-control facility instead of its current location on Kwajalein Atoll. The communications upgrade focuses on the core networking and communications infrastructure linking Kwajalein to the United States. Building a reliable, high bandwidth, low latency network is crucial to a distributed range in which the sensors are operated from more than 7,000 miles away.

"Here at the ROC, we are performing Space and Missile Defense tracking and helping ensure the development of Missile Defense assets and systems, as well as helping verify that operational assets, whether offensive or defensive, are working correctly for the defense of both the nation and the Warfighters themselves," said LTC Brian Soldon, U.S. Army Kwajalein Atoll and Reagan Test Site deputy commander (Continental United States), Kwajalein support director and Reagan Test Site (RTS) Space operation director.

The RTS Distributed Operations program will benefit Reagan Test Site customers in several key ways. RTS system engineers and mission planners will be available centrally in Huntsville, which is co-located with several major RTS customers. Customers will benefit from the range's command and communication functions being "closer" through reduced flight times and fewer time zone differences for training, demonstrations, mission planning and mission execution than is experienced with Kwajalein-based RTS support.

RTS customers will have the ability to view missions in real-time from the Huntsville control center, and only those mission support functions requiring physical access to RTS and test assets will need to deploy to Kwajalein.

"The ability to quickly make operational command decisions is a benefit," he added. "We will always have the requirement to have a significant presence, and a command presence, out on the range due to tactical safety concerns."

As the ROC mission continues to grow, one of the primary functions is to inform and support those organizations that monitor what takes place on the high ground.

"The U.S. Strategic Command mission that we support is primarily Space situational awareness which includes metric observations of Space objects so we know exactly where those objects are," Soldon said. He talked about how most Soldiers may not see how the ROC capabilities help them directly, but noted that the unseen benefits are immense and help them on several levels when they are deployed and in harm's way.

"A lot of people have a hard time identifying how Space situational awareness affects the Soldiers on the ground," Soldon said. "What it boils down to, is that satellites up in Space are executing critical support requirements for the Warfighter. Whether that is navigational support, in terms of (global positioning satellites) or whether it is communication satellites in low-earth orbit and those in higher orbits, there are also a number of intelligence, surveillance and reconnaissance assets that are up there and we need to know exactly where those are at all times."

"One, so we can know exactly where they are, but also to ensure they don't collide with any other objects. RTS is one of the sensors that provide that capability," he added. "We are one of the critical Space surveillance sensors that ensure nothing collides so that assets continue to do their support functions for our Warfighters on the ground."

TOP TWO EMERGE GRUELING COMPET

USASMDC/ARSTRAT's Soldier and NCO of the Year

By Carrie David and Rachel L. Griffith,
USASMDC/ARSTRAT Public Affairs

COLORADO SPRINGS, Colo.—The top noncommissioned officer and Soldier from the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's 2011 NCO and Soldier of the Year competition have been named.

SSG Andrew Brown, 1st Space Company, 1st Space Battalion, is the command's NCO of the Year, and SPC Brandon Kitchen, Company B, 53rd Signal Battalion, is the Soldier of the Year. Both battalions are part of the 1st Space Brigade.

"I'm excited and surprised," Kitchen said. "There was so much knowledge among these Soldiers, I'm honored to have been able to compete and still come out on top."

Brown said he was surprised also. "I'm surprised and speechless. This is such a wonderful group of Soldiers. I'm honored to compete with these guys. Now, we go back and complete the mission."

The eight competitors, who first won at the regional level from within USASMDC/ARSTRAT's units around the world, were put through four days of grueling events that included long hours and punishing physical activity. Members from all sections of the command pitched in during the competition to make the events happen, such as weapons qualification with the M16 rifle, written exam, and oral presentation to a board of sergeants major. Soldiers from the 1st Space Battalion provided the combatants as well as team members for the competitors during the Situational Training Exercise combat event.

"We had such a small squad for such a large mission, and there was so much gunfire," Brown said. "It really pushed me to my limit."

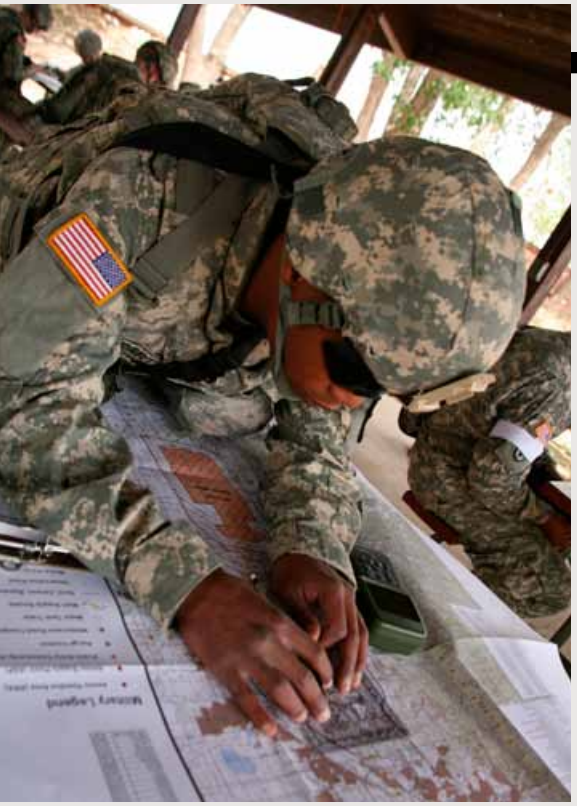
Kitchen said the easiest event for him was the run portion of the Army Physical Fitness Test. "I'm originally from Colorado, so I had an advantage," he said. "It didn't take me very long to acclimate to the altitude."

The winners returned to Colorado Springs for a month of intense training to prepare them for the Sergeant Major of the Army's Best Warrior Competition held at Fort Lee, Va., in October. The train-up focused heavily on combative training, based on feedback from previous USASMDC/ARSTRAT Soldier and NCO of the Year winners.

CSM William C. Baker briefs the competitors following their stationary qualification range on Fort Carson, Colo.
Photo by Dottie White

SPC Brandon Kitchen concentrates as he answers multiple choice questions on the written exam.
Photo by Carrie E. David

SSG Chauncey Carter uses a compass to plot points on a map during the land navigation competition .
Photo by Carrie E. David



SSG Christopher Miller goes over his land navigation equipment with his evaluator before beginning the course at Iron Horse Park on Fort Carson, Colo.
Photo by Dottie White

SSG Seamus Lynch does the push-up portion of the Army Physical Fitness Test administered to all candidates in the competition.
Photo by Carrie E. David

LIGHTNING AND THUNDER

Battalion MPs Train to Defend Missile Complex

Story and Photos by SGT Benjamin Crane, 100th Missile Defense Brigade Public Affairs

FORT GREELY, Alaska – The military police Humvee rattled down the road of the Missile Defense Complex just as it usually would any other time. The night was crisp and clouds had rolled in, but it was still light enough to see the outlying fences. As the vehicle rounded the end of Alpha Sector, a loud bang rang out as an artillery round exploded. Seconds later there were insurgents swarming over the fences and onto the complex. This was definitely a night not like any other.

That was the effect the leadership of the 100th Missile Defense Brigade (Ground-Based Midcourse Defense) and the 49th Missile Defense Battalion was going for during the Global Lightning exercise April 29 to May 3.

Soldiers from the 100th MDB brigade, based in Colorado Springs, Colo., came to Alaska to aid the 49th MDB battalion in putting on this annual exercise. Various planned "attacks" on Fort Greely's Missile Defense Complex were carried out to test the skills and proficiency of the Solders in the 49th's Military Police Security Company.

"Our primary purpose here is to test the 49th Missile Defense Battalion," said COL Gregory Bowen, 100th MDB brigade commander. "We typically do this once a year where we as a brigade headquarters come up here and run the battalion through its paces and give the battalion commander a good outside set of eyes on the result of his training program."

The scenarios in the exercise made the Soldiers use that training and tried to find ways to get them out of their comfort zones to see how they do under pressure.

"We want to be able to really put together a scenario that will run the full gamut and test all their functions, from emergency procedures to actual combat operations, but also testing personnel actions, supply and logistics and actually supplying for the Warfighters on the ground, so we're testing full spectrum," said CSM Russell Hamilton, the brigade command sergeant major.

MAJ Gary Casey, opposition forces leader and commander for the U.S. Army Reserve Strategic Command Troop Program Unit, lays out the plans of an "insurgent" attack on the Missile Defense Complex at Fort Greely, Alaska.

The mission and goal of the exercise was to provide realistic training, while keeping everyone involved safe.

During the exercise, there was allotted time to stop and give corrections where needed.

"By being here we are able to coach, train, and mentor them when we do see things that need to be improved," said Bowen.

The Soldiers who participated got to break up the monotony of their day-to-day jobs and enjoy a change of pace compared to their regular day. Getting to put their training into action helped platoon sergeants see how well they are doing training their Soldiers.

And for the 2nd Platoon, they looked like they were trained well.

"I think the exercise went very well. I am proud of my Soldiers," said SFC Robert Carson, 2nd Platoon, platoon sergeant.

SPC Cristina Cost, 100th Missile Defense Brigade, observes SPC Carl Watson (kneeling) as he performs first aid on SPC Trevor Cousino during the first day of the battalion's annual external evaluation at Fort Greely, Alaska.

During the four days, Carson's Soldiers encountered a vehicle breakdown and rollover, an active shooter situation, several insurgent attacks and had to perform first aid on nominal casualties and handle a bomb threat.

But through all that, they hung tough.

"All the ones who were evaluated did really well, so I'm happy. They did a real good job," said Carson.

Because the brigade is headquartered in Colorado Springs, Colo., and has operators working out of California and Alaska, getting Soldiers together from various units can be a challenge. But exercises like Global Lightning 11 allow all the moving parts to get to see each other.

"Any chance to work with higher headquarters face to face is good," said LTC Joe Miley, the 49th's commander. "We tend to be an electronic society, and of course we have the tyranny of geography. There is a long distance between here and the 100th in Colorado Springs as well as 88th Troop Command in Anchorage, which are our two brigade headquarters." (The unit falls under both the Alaska National Guard and the 100th brigade.)

After the four days were concluded, the staff from the 100th put together their assessment of the 49th's military police company and submitted it to the commander for his review. Then they had a large after-action review time to discuss the exercise. Through comments made during the after-action review, it appeared as though the training at the battalion level was to standard.

"I am very proud of them (2nd platoon). It's not because of me, and it's because of the things that the squad leaders and team leaders are out there doing every day," said Carson. "Every shift, every cycle, we do training and physical training. We are going to have to obviously work on our communications over radio and other things but other than that, I am very proud of them and we just have to sustain that and keep it going."

COL Gregory Bowen, commander of the 100th Missile Defense Brigade (Ground-Based Midcourse Defense), talks to Soldiers during the pre-exercise brief for exercise.

SPC Cristina Cost, 100th Missile Defense Brigade, reviews wit SPC Carl Watson and SPC Trevor Cousino on their performance of first aid during the first day of the battalion's external evaluation. Both Soldiers are military policemen with the 49th Missile Defense Battalion's MP security company.

SPC Carl Watson (kneeling) practices first aid on SPC Trevor Cousino during the first day of exercise Global Lightning 11 at Fort Greely, Alaska.

CRUSHER SIGNS IN

CSMs May Come and Go, but the Sword Remains "Razor Sharp"

By DJ Montoya, 1st Space Brigade Public Affairs
Photos by Craig Dalton, USAF

PETERSON AIR FORCE BASE, Colo.—Forty-five days after the 1st Space Brigade bid farewell to its top noncommissioned officer, CSM Thomas L. Eagan assumed responsibility for the role during a brief but important ceremony Aug. 11 in the ballroom of The Club at Peterson Air Force Base, Colorado Springs, Colo.

In front of members of U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, Soldiers, Air Force personnel, community leaders, and Family members, Eagan received the Noncommissioned Officer's sword from COL Eric P. Henderson, brigade commander, signifying the assumption of senior enlisted responsibilities for the Army's first and only Space brigade.

Henderson pointed to Eagan's accomplishments over a 26-year career. He previously was the battalion command sergeant major with the 3rd Battalion, 6th Air Defense Artillery Brigade at Fort Sill, Okla.

"Though new to us, he is not new to the arena," said Henderson.

"Since the 20th of August 1985 Command Sgt. Maj. Eagan has distinguished himself from his peers. Whether it is his assignments as a platoon sergeant, a brigade maintenance NCO, a Patriot weapon systems adviser and trainer, a first sergeant, an operations sergeant major, or battalion command sergeant major, Eagan's resume is built upon the dust, sweat, and the blood that has taken him to become the professional noncommissioned officer that he is today.

"He just assumed the responsibility in becoming the command sergeant major of the world's only Army Space brigade. He is worthy of the task, and he is here. And he is here for a reason. He will continue to motivate, train, lead, provide direction, and further develop today's Soldiers of the 1st Space Brigade and more importantly the future leaders of our nation and of our Army."

Eagan acknowledged the welcome and said, "To the leaders of our city (Colorado Springs) and our installation (Peterson Air Force Base) I look forward to working with both our civilian leaders and our brothers and sisters in arms to continue our great relationship and improving those to the next level. I will leave you with this from the Creed of the Noncommissioned Officer. Three letters form the foundation of the creed and begin each paragraph with a short sentence: No one is more professional than I. Competence is my watch-word. Officers of my unit will have maximum time to accomplish their duties; they will not have to accomplish mine.

"My word to the officers of the units, you will not have to accomplish my duties. To the leaders of the unit, competence is your watch-word and to all in the command, no one is more professional than you.

"It's truly my honor to be your Command Sergeant Major. Crusher signing in!"

1ST SPACE BATTALION GETS NEW COMMANDER

By DJ Montoya, 1st Space Brigade Public Affairs
Photos by Craig Dalton, USAF

PETERSON AIR FORCE BASE, Colo.—A change of command ceremony for the 1st Space Battalion, 1st Space Brigade took place June 20 at the Peterson Air Force Base auditorium.

The outgoing commander, LTC J. Dave Price, turned over the battalion colors to COL Eric P. Henderson, commander of the 1st Space Brigade. Henderson then passed the colors to the incoming commander, LTC Patrick J. Mullin.

Prior to the ceremony Price received the Meritorious Service Medal for his service as battalion commander from July 2009 to June 2011.

Henderson reflected on Price's tenure by saying, "As the operational arm of this command no other unit has done more to provide trained and ready Space forces than the 1st Space Battalion.

"Dave has deployed Soldiers consistently and systematically into theater numerous times. His battalion and staff have trained, equipped, prepared, deployed, performed, redeployed, and re-integrated Soldiers into theater. His Soldiers are trained, their units are ready, and they continue to provide Space-based products and services to those who need them the most–the sons and daughters of this great nation."

Price was the sixth commander of the battalion and had previous ties to the unit when he served as commander of the 1st Space Company from 2004 to 2006.

"Let me remind you that my real responsibility in command was only to build a team and serve Soldiers," said Price. "But the feats of these Soldiers rest solely on their shoulders. And I give credit to all those deserving."

Among his other assignments in the Space arena Price served as the chief of Special Technical Operations for the Joint Functional Component Command for Space, and as the first-ever joint senior Space duty officer at the Joint Space Operations Center, Vandenberg Air Force Base, Calif., for U.S. Strategic Command.

The Army War College at Carlisle, Pa., is the next stop for Price.

Mullin comes to the battalion after serving as the S3 (Operations) at the 1st Space Brigade for the past two years.

"To the Soldiers and Civilians of the 1st Space Battalion–hooah!" said Mullin. "I have observed you from a close distance for the last two years. And I have to say, right now, to me you look better than ever."

His previous assignment include commander, Missile Warning Center, Cheyenne Mountain Air Force Station, Colo.; chief of Space and missile operations for Cheyenne Mountain Operations Center; chief of the Space Support Element for the 101st Airborne Division at Fort Campbell, Ky.; and chief of Space and Special Technical Operations, Combined Joint Task Force-101 and U.S. Forces-Afghanistan at Bagram Air Base, Afghanistan.

The 1st Space Battalion was activated on Dec. 15, 1999. It was formed to provide an operational headquarters for command and control of Army Space forces.

DROP, THEN SHOP

Soldiers Support Commissary through Physical Endurance

TOP SGT Vincent Samson focuses while trying to complete the "Egg Walk."

LEFT SSG Michael Landry, SGT Toby Hensley, and SPC Theodore Furrow start the "Commissary Sweep" for C Company, 53rd Signal Battalion.

BOTTOM LEFT PFC Scott Fitzgibbons keeps pushing for C Company, 53rd Signal Battalion.

BOTTOM RIGHT CSM Richard Jessup watches while SGT Hensley does as many push-ups as possible.

Photos by Rick Scavetta, U.S. Army Garrison Kaiserslautern

LEFT SGT Toby Hensley does his lap during the "Shopping Cart Relay."

By SPC Simon Castillo, C Company, 53rd Signal Battalion

KAISERSLAUTERN, Germany — Soldiers from Charlie Company, 53rd Signal Battalion, 1st Space Brigade joined Soldiers from U.S. Army Garrison Kaiserslautern to show their appreciation for the local commissary by adding groceries to their morning physical training.

A team of ten C Company Soldiers competed against dozens of others during Commissary Appreciation Day, held June 24 at the Vogelweh commissary. The garrison's Better Opportunities for Single Soldiers (BOSS) program supported the annual event. The commissary provided props for some unique competitions.

"It's our business to support events like this through our industry partners," said Defense Commissary Agency Europe spokeswoman Leslie Brown. "If it weren't for the military men and women, we wouldn't have a mission. We appreciate their patronage and their service to our country."

The morning began with shopping cart relay races around the track. Each team had to complete two, one-third-mile laps while pushing a shopping cart weighed down with several packages of bottled water. C Company completed the race with the fastest time, winning the first event.

The day's second event also had the Soldiers racing on foot, running a lap while balancing an egg on a spoon clenched between their teeth. C Company members again showed their dominance, winning the event. A pushup competition was made more interesting when Soldiers pressed to muscle failure with heavy sacks of dog food on their shoulders. C Company won the third event with 293 pushups.

"Thirty pounds of dog food was tough, but I really wanted to win this for the team," said SSG Danial Zweifel.

Soldiers then broke for breakfast provided by the commissary and BOSS. The fourth event was the egg toss which consisted of three teams of two given the chance to drop only three eggs total. Alas, C Company was brought down from the top seed of this event and left with only a handful of yolk.

The last event of the day brought the Soldiers inside the commissary to compete in a shopping spree. Working in teams of three, they had two minutes to fill a cart. The highest dollar value would win. C Company once more triumphed, with a bill of $1,260.

In the end, it didn't matter. The Vogelweh commissary–part of the Kaiserslautern-headquartered Defense Commissary Agency Europe–allowed each team to keep their haul.

The C Company team then took the groceries to the parking lot and divided it all up. First was to supply the Family Readiness Group with anything that could be useful for its members and deployed Soldiers. Then the single Soldiers in the barracks were supplied. Finally, what was left was divided between the team as the spoils of victory. C Company also was awarded the DeCA Europe Cup, which sits in the company's trophy case.

C Company is one of six companies worldwide that make up the 53rd Signal Battalion which is headquartered in Colorado Springs, Colo. Their mission is to provide continuous communications transmissions and satellite payload control of the Department of Defense Wideband satellite communications constellation.

CALIFORNIA MISSILE DEFENSE DETACHMENT

Activates, Changes Commanders

Story and Photos By SGT Benjamin Crane,
100th Missile Defense Brigade Public Affairs

VANDENBERG AIR FORCE BASE, Calif. – The 100th Missile Defense Brigade (Ground-based Midcourse Defense) officially unfurled the guidon for its Detachment One during an Activation and Change of Command ceremony May 13.

The unit is comprised of seven California National Guard Soldiers working together to defend the skies over America in case of a foreign missile attack. They work hand in hand with other brigade units in Colorado and Alaska to accomplish the mission of defending the homeland.

The detachment has actually been working together for the past four years out of California but it wasn't recognized by the Army as an official unit.

"The original manning document had only Alaska and Colorado in it," said COL Gregory Bowen, commander of the 100th MDB (GMD) to the Soldiers and families in attendance at the ceremony. "We couldn't add California legally until we sent it (manning document) all the way back up to the Secretary of the Army and get his approval, which was a very long process that concluded about two months ago. So now we can formally activate Detachment One."

And with that, Detachment One's guidon was unfurled and handed to the outgoing commander, CPT Orlando Cobos.

"Bottom line, Orlando has done an absolutely phenomenal job as the detachment commander," said Bowen. "If you think in terms of the responsibility he bears every day, this is a lot of pressure that we put on a captain to be out here in charge of this particular asset."

As Cobos accepted the guidon his official command time was started. But it didn't last long, as he stepped down and handed over the command to incoming commander CPT William Palermo.

Time in command 4 minutes, 31 seconds.

"It was an outstanding four minutes, it gave me very little time to screw up," laughed Cobos. "The four minutes was actually almost four years, but it was an amazing four years."

Cobos started coming out to California on temporary duty with six others Soldiers when the detachment first was formed and now as he leaves, it's a full-time duty station with plans to add more Soldiers to handle the mission.

"It's been a fun ride. We have had some challenges, especially integrating into the Air Force base here and the California National Guard, but overall I been very fortunate to be a part of this," Cobos added.

Palermo is leaving his assignment in Colorado Springs, Colo., as the 100th MDB's assistant intelligence officer. He has served in the unit since 2008 and has previously been deployed to Camp Arifjan, Kuwait.

"I've seen a lot of people come and go since I began working here. During my tenure, I've worked with some outstanding individuals and have been afforded

Outgoing commander, CPT Orlando Cobos, speaks to the crowd at the Ronald Reagan Missile Defense site at Vandenberg Air Force Base during the 100th Missile Defense Brigade (Ground-based Midcourse Defense) activation and change of command ceremony for Detachment One, 100th MDB May 13, 2011 at Vandenberg AFB, Calif.

Outgoing commander, CPT Orlando Cobos, hands flowers to his daughters, America and Reagan, at the Ronald Reagan Missile Defense site at Vandenberg Air Force Base.

great opportunities. That said, I will surely miss it here (in Colorado)," said Palermo.

But as he starts his tenure with the new detachment, he knows what he has to do to keep the standard up there.

"I want to develop a loyal team that is focused on accomplishing our mission, which is greater than any one person. If we embrace the true meaning of teamwork we will accomplish great things," said Palermo. "I am very thankful that I was entrusted with the responsibility to lead Detachment One. CPT Cobos has accomplished great things over the past couple of years especially in standing up the detachment and I will have big shoes to fill, but I'm looking forward to the challenges that lie ahead."

Cobos plans to leave the 100th to join the 79th Infantry Brigade Combat Team located in San Diego. He will be the battalion's training and operations officer.

"The guys have always been dedicated to the mission. All of them are good people. Soldier-wise, they execute the mission and they are great Soldiers so I have been very fortunate. CPT Palermo has a great group of guys that know the mission here and they will take care of him," said Cobos.

COL Gregory S. Bowen speaks to the crowd in front of the Ronald Reagan Missile Defense site at Vandenberg Air Force Base.

Special guest, Pastor Rob Litzinger takes a picture with his cell phone of the activation and change of command ceremony for Detachment One.

One of the conference leaders, Walsh Althouse, welcomes delegates to the 2011 USASMDC/ARSTRAT Army Family Action Program conference that was held in Colorado Springs, CO.

FAMILY MATTERS

Delegates Choose Six Issues for Army Leadership

By KC Bertling, USASMDC/ARSTRAT G1 Photos By SGT Benjamin Crane, 100th Missile Defense Brigade Public Affairs

Delegates get to know each other during the 2011 USASMDC/ARSTRAT Army Family Action Plan Conference.

COLORADO SPRINGS, Colo. — To improve the Army family's quality of life, Soldiers, Department of the Army Civilians, retirees, and family members from across the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command gathered for the annual mid-level Army Family Action Plan (AFAP) conference in Colorado Springs, Colo., in April.

A total of 33 delegates representing the command's many demographics were divided into three workgroups. Each group reviewed previously submitted issues, concerns, and ideas, and prioritized the group's top two issues. Everyone worked tirelessly with subject-matter experts, and each workgroup spokesperson briefed the top two issues to LTG Richard P. Formica and other senior leaders in the command April 22.

The following subjects were briefed to the commanding general and will be forwarded to the Department of the Army for further consideration during the 2012 worldwide AFAP conference.

1 Orthodontic coverage options for family members.

Recommendation: Provide optional plans for family members at sponsors' expense to purchase expanded orthodontic coverage under the TRICARE Dental Plan.

2 Environmentally hazardous Army family housing.

Recommendation: Provide environmentally safe housing for family members.

3 TRICARE Prime Specialty Care referrals between regional contractors.

Recommendation: Change current policy to allow TRICARE regions to accept referrals from the losing region to accommodate TRICARE Prime patients requiring specialty medical care upon arrival at the new duty station.

4 Support programs for Soldiers, Civilians, and families at remote locations.

Recommendation: Provide means to access relevant Army support programs, dependent on unique site needs, at all remote locations, regardless of total Soldier population.

5 Internal Department of the Army Civilian career advancement opportunities

Recommendation: Require increased career advancement opportunities for Department of the Army employees, GS-5 through GS-12, by making use of existing developmental options as opposed to hiring externally.

6 Voluntary leave donation program for Soldiers.

Recommendation: Implement a voluntary leave donation program for Soldiers.

Conference coordinator, KC Bertling speaks to the delegates on Monday of the 2011 Space and Missile Defense Command/Army Forces Strategic Command's Army Family Action Plan conference that was held in Colorado Springs, CO.

AFAP provides members of the Army community a "voice" in shaping their standards of living and identifying issues related to the current environment. Army leaders trust and support AFAP, and it provides real-time information that enables commanders to respond more rapidly to resolve problems, implement good ideas and guide policy information.

"I had no idea about the AFAP until I attended the conference this week," said Melva Tillar, a conference delegate. "This is an awesome program for the Army leaders to demonstrate that they do care about us."

Installations and local levels hold annual AFAP conferences where representatives of all Army elements meet to identify, develop and prioritize issues they believe are important to maintain quality of life for Army families.

Issues that are applicable beyond the local and mid-level conferences will be forwarded to the worldwide AFAP conference. The goals of that conference are to provide information on the implementation of AFAP issues and identify and prioritize issues for Army leadership for further actions to achieve the Army's overall goal of improving the quality of life for Army families.

A DAY IN THE LIFE

AFAP A Soldier's Perspective

By SGT Benjamin Crane, 100th Missile Defense Brigade Public Affairs

I was one of the Soldiers selected to represent the Army National Guard and the 100th Missile Defense Brigade at the 2011 U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's Army Family Action Plan conference. I had never been to one of these conferences before and wasn't sure what to expect.

But it didn't take me long to realize that this wasn't just going to be time off of work. I was assigned to the employment group think tank. It consisted of ten or so other Soldiers and Civilians from around the world. None had the same job or assignment. I was amazed at the diversity of the group.

Tuesday we started getting into the real meat of the issues. The list had 15 issues submitted to USASMDC/ARSTRAT leadership. Some were local issues that were too broad, and others were too specific and didn't help the entire Army. Facilitators controlled the flow of discussion and kept us focused on what issues were something that could be fixed and help the greatest number of people.

The facilitators were very energetic and kept the discussion environment upbeat. Other groups didn't look like they were enjoying themselves; our group couldn't wait to get together. Instead of arguing and fighting through issues, we used laughter to keep focused and engaged. We also kept busy with the colored pipe cleaners that were put on our table each morning. Cars, animals, and mostly candy canes started to fill the room as the week progressed. There was even a four-foot pyramid that developed by the last day in one of the other group's room.

Slowly the issues dwindled from 15 to five to eventually two. Our group decided to take three similar issues and make them into one solid issue. Despite a little push back from the AFAP leaders, the issues were finally refined to be presented on Friday.

Friday was the last day of the conference and the day the three groups would present their ideas to LTG Richard P. Formica, commander of USASMDC/ARSTRAT. Our group picked a spokesperson and prepared a cheer which we were supposed to perform. I guess it was tradition despite sounding silly. But I think our group did the best it could, and we even made the general laugh a little. After the cheering and presenting of issues were complete, we were thanked for our participation and released.

I walked out of the hotel that afternoon with a sense of accomplishment because I knew that we had done well and the changes made through all this will make many people happier and improve military quality of life. And that made my week off of work worth the time.

JAPAN

DISASTER TOUCHES SPACE WARRIORS

CPT Erol Munir, D Detachment, 1st Space Company commander, and SSG James R. Harris pause while helping clean up after an earthquake and tsunami devastated Japan in March. *Photo Courtesy 1st Space Company*

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By CPT Erol Munir,
1st Space Company

MISAWA AIR BASE, Japan – On March 11, a 9.0 earthquake struck off the coast of northeastern Japan and shook Misawa Air Base for several minutes. Almost immediately afterwards, the "giant voice" on base began to warn of an impending tsunami. Picture frames fell off the walls of homes, personal belongings fell off shelves, and the power went out. Luckily, no one was injured or hurt.

At the time the earthquake and tsunami struck, the base was in the middle of conducting a readiness exercise and was therefore already postured to respond. The first priority was to conduct a damage assessment and full accountability of personnel. Soldiers, airmen, and sailors from the base responded quickly and professionally to meet the task at hand. Announcements continued to be broadcast over the giant voice, and an Emergency Family Assistance Control Center was established at the community center. Generators were used to power key agencies on the base, and everywhere else, people huddled together by candlelight.

The first few weeks after the earthquake and tsunami were chaotic. Power was restored to the majority of the base within a week, and slowly things started getting back to normal. However, there was still the stress of continued aftershocks and the developing situation at the Fukushima Daiichi Nuclear Plant which resulted in uneasiness, amongst the base population. The Department of State announced a voluntary departure of family members to safe havens in the United States, and a large percentage of spouses and children boarded planes to go home.

Throughout this stressful time, the Soldiers of Delta Detachment continued to flawlessly perform their vital strategic missile warning mission. Despite their already rigorous schedule, they continuously sought opportunities to help the local community and make a difference. On March 15 and 18, Joint Tactical Ground Station (JTAGS) Soldiers volunteered to conduct a tactical vehicle convoy to the Japanese town of Ofunato (150 miles south of Misawa) to deliver vital supplies to U.S. Agency for International Development search and rescue teams.

Since then, Soldiers from JTAGS Japan have continuously supported "clean up" missions in Operation Tomodachi. Tomodachi means friendship in Japanese. They have gone to numerous local areas along the coast where there has been unprecedented devastation and donated more than 400 hours cleaning debris from where the tsunami wave made contact with land.

JTAGS Soldiers continue to volunteer their time and help as much as they can, including an overnight trip to the village of Tanohata to help clear debris from damaged homes and buildings.

EDITOR'S NOTE

CPT Erol Munir is the former commander of D Detachment, 1st Space Company, 1st Space Brigade, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command.

SSG Christopher Douglas, PVT Jonathan Segarra and SGT Vyncent Beasley help clear debris after an earthquake and tsunami devastated Japan in March. All three Soldiers are with the Joint Tactical Ground Station at Misawa Air Base, D Detachment. *Photo Courtesy 1st Space Company*

Continuing Pride

COL Eric P. Henderson
Commander,
1st Space Brigade

Recently, I had the opportunity to march with my unit, as we participated in the Colorado Springs Veterans Day Parade. The Brigade was joined by service members from Fort Carson, and Schreiver and Peterson Air Force Bases. As we marched along Tejon Street, the applause and cheering filled my ears, as well as my heart, with joy. Everywhere I looked, I saw small children, old veterans, housewives, and Harley riders. All of those present stood and clapped in appreciation, as we marched by.

I took a few moments, as we marched, to think about the mission the 1st Space Brigade performs, and the trust that is placed upon us by the people of America. Our Commanding General's vision addresses the responsibility of "Providing Trained and Ready Space and Missile Defense Forces to the combatant commanders and to the Warfighters." What struck me was that every person we passed places a much greater trust upon us, and that is the care and welfare of their sons and daughters. Small children along the parade route had parents not in the parade, because they are serving our Nation abroad. Old (and some "not so old") veterans rose to their feet, as our formation of flags passed. The colors seemed to make every heart swell, and every backbone stiffen with pride.

There is an old Army saying that "every meal is a feast, every day is a Holiday, and every formation is a parade." As I write this short column, I think about those from our ranks who serve our country. I think about the sacrifices families make. I consider whether they know how much they are appreciated, as they dutifully go about their jobs. Recently, the brigade had to extend six members of our command for an additional period of time in Afghanistan. While I know that this was not an ideal situation, I know it was the right decision. I want to thank those professional Space Soldiers, and their families who continue to serve. Every day over 800 Space enablers are spread globally, so that our Army, our sister services, and our Nation's allies have the best possible support. Even though our deploying units

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Back to the Basics

CSM Thomas L. Eagan
Command Sergeant Major
1st Space Brigade

Let me start by saying Maria and I are truly honored to be a part of the 1st Space Brigade and U.S. Army Space and Missile Defense Command/Army Forces Strategic Command team. We look forward to working with the Officers, Non-Commissioned Officers, Soldiers, and Families of the Command. Maria and I would also like to Congratulate CSM Ross and his wife Ashley on their selection to lead the Soldiers of the 32nd AAMDC and offer our thanks for their continued support of our transition into the Brigade.

Teamwork and cohesion are vital when it comes to achieving our mission. I like to use the acronym TEAM: Together, Each, Achieves, More. This starts with leadership. We as Leaders serve a unique mission in this organization, and as such, our leaders must be tactically and technically proficient while fulfilling the Total Soldier Concept. This means not only being an expert in your field, but observing the Army Values and living by the Soldier and Non-Commissioned Officer creeds. I cite the line from the NCO creed: *"No one is more professional than I."* As a Professional Space Soldier you cannot be complacent when it comes to the day to day business. We are Professional Soldiers first, then Professional Space Soldiers. From the Soldiers, I expect the Army Values to be your moral

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Sun Doesn't Set on the 100th

CSM Russell A. Hamilton
Command Sergeant Major,
100th Missile Defense
Brigade (GMD)

Missile Defense support to a combatant commander begins with providing trained, educated, and certified Missile Defense forces. If we are talking Missile Defense crews, it means going to the Ground-based Midcourse Defense Operator Course, and going through our rigorous certification program. For our Soldiers who are assigned to the radar detachments, it includes the Sensor Manager's Course, and follow on certification on theater and strategic operator tasks. It's the cornerstone for what we do. As we become proficient at those fundamental tasks, we can then go a step further to bridge over into some of the Space courses, such as the Introduction to Space, Space 200, Space 300 and Functional Area 40 as well. Adding these courses gives us the well-rounded Space and Missile Defense knowledge as we work as subject matter experts in those arenas to better support a geographic combatant command's mission set.

Since the brigade's inception when we stood up for initial limited defense operations in 2004, our exclusive focus was providing defensive capabilities against intercontinental ballistic missiles for U.S. Northern Command's area of responsibility (AOR). Since then, the additions of the Army/Navy Transportable Radar (AN/TPY-2) surveillance detachments have helped the brigade spread our capability into multiple geographic combatant commands. Our primary focus is still obviously strategic Missile Defense for the USNORTHCOM area of responsibility, but if you take, for example, the AN/TPY-2 Detachment (Det. 10), it also provides a theater ballistic Missile Defense capability for US Pacific Command. Now as we add Det. 11 for U.S. European Command, there is a theatre ballistic defense capability there, as well as Det. 12 for U.S. Central Command's AOR. Providing that ballistic Missile Defense detection and

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An Insurance Policy for the Nation

COL Gregory S. Bowen
Commander,
100th Missile Defense
Brigade (GMD)

U.S. Army Space and Missile Defense Command/Army Forces Strategic Command has a long history of contributing to our nation's ability to defend itself from air and missile threats. From the early days of the Nike air defense system, to our nation's first deployed ballistic Missile Defense system called Safeguard, the Army has developed cutting-edge technology and delivered capability to Warfighters and to the nation. USASMDC/ARSTRAT's current work in developing and operating the Ground-Based Midcourse Defense (GMD) system is just the most recent chapter in this prestigious history.

Like military Space, Missile Defense appears to be a growth industry; one in which USASMDC/ARSTRAT is uniquely positioned. A careful study of recent trends in ballistic missile proliferation paints a disturbing picture. Countries unfriendly to the United States are actively cooperating with one another in the development of lower-cost, higher-accuracy ballistic missile and Space launch systems. They are sharing the technology with one another, and with other state (and potentially non-state) actors. They have reached the conclusion that ballistic missiles provide them with a superb asymmetric threat against superior U.S. forces, and they realize how difficult and expensive the problem of ballistic Missile Defense is. Despite the cost and complexity of defensive systems, the ballistic missile threat is not one the United States can afford to ignore.

Ballistic Missile Defense is costly, and it is controversial. In the wake of the recent budget crisis and with significant budget cuts to the Department of Defense looming on the horizon,

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Flipside 2.0
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JAPANESE DISASTER TOUCHES SPACE WARRIORS

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Emerge After Grueling Competition | Ops Center Watches Sky | Space & Missile Defense Conference