



# Army Space Journal

A Professional Journal on U.S. Army Space Operations



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## TAPPING into SPACE



The U.S. Army Space and Missile Defense Command/Army Forces Strategic Command publishes **the Army Space Journal** quarterly, with special editions as required. The publication consists of four sections, FROM THE TOP – Leadership Updates; JOURNAL FORUM – Space Topics; TIP OF THE SPHERE – Space Cadre News/Features; and FLIPSIDE – USASMDC Features.

The Journal provides a forum through which Space operations professionals can disseminate professional knowledge and furnish information within the U.S. Army. The purpose is to increase the effectiveness of Space operations through a professional discussion of events and lessons learned. It is also intended to inform the Army warfighter on Army Space issues.

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Cover Photos: DJ Montoya

Back Cover Photos: DJ Montoya

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## The Real Meaning in Words and Deeds

Today I went to a funeral.

It made me think about communication – the discussion of ideas in such a way to increase understanding and knowledge – and war. The casket draped with the American flag in the front of the church in Colorado Springs, Colo., held the ashes of U.S. Army SGT Michael P. Scusa, 22, who was killed in Afghanistan. A chaplain prayed and read some scripture. An Army general officer made brief specific comments about the Soldier. A woman stood up and walked to the back of the sanctuary carrying a baby – I learned later he was Scusa's only child, Connor – so as not to disturb the proceedings. At the end of the service, Soldiers in the 4th Infantry Division honor guard carried the coffin out of the church.

This was all very much real. This service to honor a Soldier killed in war was not contrived or choreographed or managed to somehow control the effect of the information. Scusa was one of eight U.S. Soldiers from the 4th Brigade Combat Team, 4th Infantry Division killed in a battle with the Taliban on Oct. 3. Accounts of the battle described it as among the fiercest in the eight years of war there. I sat in the back pew, separated from the gathering of friends, family and military leaders. A photographer from the local newspaper stood on the balcony above me – his photograph of the casket being carried away

ran above the fold on page one of the paper the next morning.

Like almost every American, I have no personal knowledge of what happened the day Scusa and his fellow Soldiers died. I didn't know him or them but, honestly, I wanted to know more a few hours later when the setting was more intimate at the Fort Logan National Cemetery in Denver. Here on this day, Oct. 16, I could not hide in the back. I stood in the open doorway of the pavilion a few feet away from where the Soldier's young widow sat. Alyssa Scusa sat stoically and, when the gunshots of the Army salute honoring her husband rang out and taps played, her mother gently reached for her hand to comfort her. I could feel the finality of the moment. The general knelt down to give her the folded flag that had draped her husband's coffin along with the shell casings from the salute. I took a low resolution photograph of the scene with my Blackberry. Her son Connor eagerly wanted attention that she could not give.

An Oct. 5 Associated Press report by Todd Pitman provided a partial glimpse into what happened the day of the battle. Plans had been in place to close two remote U.S. positions – Combat Outposts Keating and Fritsche – near the Pakistan border as the U.S. military began turning to a population-centric strategy. A Taliban leader who had been in Pakistan crossed the border into Afghanistan four days earlier. Word spread the night before that an attack was imminent, causing many of the villagers to depart the area. The local police chief did not leave and he was executed on Oct. 2 when the terrorists arrived. In the early morning, approximately 300 Taliban and other insurgents attacked the two Army posts defended by three 4th Brigade platoons, along with Afghanistan Army counterparts. At the end of nearly six hours of fighting, U.S. helicopters came in to repel the enemy. In addition to the eight U.S. Soldiers, three Afghan soldiers were killed in the battle with 24 U.S. Soldiers and 10 Afghan soldiers wounded. Approximately 100 insurgents were killed.

Media reports immediately afterward connected the battle with GEN Stanley McChrystal's Aug 30 assessment of the strategic situation facing his security forces in Afghanistan. Along with laying out his case in the assessment for focusing actions more directly on ways to help the people of Afghanistan vice specifically targeting terrorists, McChrystal requested more troops to do the security mission. The classified assessment was subsequently leaked to the media and, prior to the Oct. 3 fight for the two outposts, the media reports on the unclassified content created a perception in some circles that McChrystal and other military leaders were conducting some sort of strategic communication campaign to influence the President's actions. Although this perception of the military's intentions ultimately seemed to change as President Obama considered his options in Afghanistan, it did seem to create a backdrop that shaped information about the 4ID fight in a way to bolster the argument for more troops.

The point of publishing McChrystal's assessment was to "inform the debate," according to investigative reporter Bob Woodward. Jaime McIntyre provided Woodward's account in his Line of Departure blog (lineofdeparture.com) in December. Woodward had been given the report under an embargo for a future book he planned to write. Once Woodward realized the information in the assessment contributed to the public discussion, he pushed the Pentagon for the eventual release of unclassified portions. The reporter contended that the intentions were "pure" on the part of those who initially gave him the report and that it was not a purposeful effort to influence the political process. What he – along with many journalists – may not have considered, however, was the entire impact of the assessment's release during war on the conduct of war.

And this becomes the problem of strategic communication: Information shapes information and it takes time for people to sort out what the information tells them. Whether or not what happened on that day at these outposts was evidence of the need for new direction in the war, the assessment formed a backdrop to at least the initial reports of what happened. Early media reports expressed frustration over any implied implications that the battle was an American loss. This frustration from U.S. Soldiers who had first-hand knowledge came over the initial media reports of the battle. Their point was clear: These outnumbered Soldiers fought heroically to defend and defeat an enemy attack coming from virtually all sides. It started with enemy rocket launchers from a village mosque and transitioned to a closer battle of handguns. There was the burned out shell of the outposts, but the remaining Soldiers in the three Army platoons that had fought all day still stood their posts during and after the several hours of sporadic gunfire that followed the close air support that kicked back the enemy.

With time, the epic picture turns clear. The Army general who spoke at the service and presented the flag – quoted men who were close to the battle. "All of you fought valiantly under heavy enemy fire – the Soldiers manned their positions with great courage," said CPT Stoney Portis, who spoke at the memorial service held Oct. 11 in Afghanistan. LTC Robert Brown had said, "These men faced their fears and fought for their brothers. In a desperate few hours they did their best and gave everything they had to save their comrades. ... (because of them) sitting among us are Soldiers who will once again see their families, love their children, and tell their grandchildren what it means to know a hero."

I thought about much of this as I watched the family and friends absorb the final moments in the ceremony at Logan.

BG Kurt S. Story presents the American flag to SGT Michael Scusa's wife, Alyssa during the interment ceremony at Fort Logan National Cemetery in Denver, Colo.

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## Facebook Notes

### Mike Howard on Facebook

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Today



**Mike Howard wrote** at 7:24 a.m.

I finally came up with the title to my editor's blog for the Army Space Journal. Orbit's Redline. I'll post my first one tonight in the Facebook notes.

Yesterday



**Mike Howard wrote** at 6:04 p.m.

Well, it's Friday and I hope to get our next edition of the Army Space Journal online today. This one has a few basics on Space in it plus a neat piece on our partnership school in Colorado Springs that is building cultural bridges with students in Afghanistan. I'll post the link this evening.

3 Days Ago



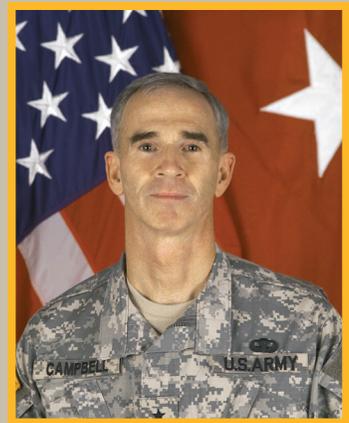
**Mike Howard wrote** 3 Days Ago

I've been reading some stuff on critical thinking and strategic communication. Wonder why nobody really connects the two concepts? I mean, to hear the brains talk about it one is intellectual and the other a tricky wink. Well, it's snowing outside.



## LTG Kevin T. Campbell

Commanding General,  
U.S. Army Space and Missile Defense Command/  
Army Forces Strategic Command



# Lifelong Learning

# T

he focus for this edition of the Army Space Journal is, “Tapping into Space: A How-To Guide.” This is an excellent follow up to the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command Training Conference held in September where attendees were able to listen and discuss presentations about Space, Missile Defense, and Cyber Operations with many of the leading Army experts in those areas. The discussions at the Command Training Conference provided ample opportunity to illuminate the myriad of issues that affect our core competencies of Space and Missile Defense as well as the new emerging domain of Cyber. This “How-To Guide” is another venue for examining lessons learned and is an excellent forum for adding to the collective body of knowledge.

“The Army, as a learning organization, harnesses the experience of its people and organizations to improve the way it operates,” FM 6-22, Army Leadership.

The Chief of Staff of the Army has stated that for the Army to maintain its agility, we must remain a learning organization by absorbing lessons learned and applying them to current and future problems. He further states that versatility is the central organizing principle of a balanced Army and begins with how the Army thinks.

We have a culture that builds on the experience of others and relies on Soldiers with critical thinking skills able to adapt quickly to unexpected situations in unfamiliar surroundings. This month’s Army Space Journal provides some of those experiences written by those at the tip of the spear.

The article written by United States Marine Corps Capt. Andy Lee and U.S. Army LTC Guy Burrow, Tactical Space: Lessons for the new FA40, provides new FA40s short, succinct rules that will help set the conditions for success. Their “Five Rules for New Tactical FA40s” is the kind of information young FA40s should copy and keep in their cargo pockets. Probably the most important line in the article discusses what it

# ROUND”

“We have a culture that builds on the experience of others and relies on Soldiers with critical thinking skills able to adapt quickly to unexpected situations in unfamiliar surroundings.”

takes to be a good Space Operations officer, “a strong desire and dedication to learn and understand the science behind Space-related assets.” The key word is learn.

Another good article inside this edition is Floyd Light’s article about the Command’s Joint Friendly Force Tracking mission. The article provides a tutorial about JFFT that includes a historical background, the five basic functions that support the JFFT, and how it aligns with cyber and network operations. This important mission of identifying and tracking friendly forces provides better situational awareness for units and commanders thereby increasing command and control.

These and other articles in this edition of the Army Space Journal offer great professional reading. As our doctrine implies, being a professional means a commitment to lifelong learning. Three books I recommend adding to your professional reading list follow.

The Starfish and the Spider, by Ori Brafman and Rod A. Beckstrom. This is a superb book that discusses the power of leaderless organizations. Brafman and Beckstrom posit that decentralized organizations have a power unto their own and are difficult to overcome using traditional means. Much like the Spanish could not overcome the Apache nation because of the decentralized nature of the Apache society; it appears we find ourselves in a similar quandary in fighting Al Qaeda. As we adapt to the changing strategic environment; understanding the difference between a “spider” organization and a “starfish” organization, as described by Brafman and Beckstrom, may be critical.

The World is Flat, by Thomas L. Friedman. This is an excellent book about how technology has literally flattened the hierarchy of organizations and elevated individual empowerment. Friedman describes living in “Global 3.0” where it is, “less about

command and control and more about connecting and collaborating horizontally.” At our Command we are trying to flatten our own communication hierarchy through the use of programs such as SKIWeb. Removing layers of bureaucracy between the decision-maker and the information is risky and requires a certain amount of trust.

“Business @ the Speed of Thought”, by Bill Gates is the third book I recommend. Friedman and others write about how technology has flattened the usual hierarchy. Gates looks at the velocity of decisions because of technology. The speed at which technology can drive decisions has a quality of its own separate from the automation of processes, Gates writes. As we begin to understand Cyber operations within the Army, we will need to also understand the ramifications of decisions made at the speed of thought

These are three books for your suggested reading, but there are many excellent books available that can enhance critical thinking and expand your horizons. The important “take-away” is just to make time to read. By reading, writing articles and engaging in meaningful discussions about our profession we are able to grow as individuals and in turn increase the capabilities of our organizations.

I want to thank those who contributed articles to this edition of the Army Space Journal and encourage you to submit your own articles about topics that may be of interest to the community. This is your journal – use it.

“SECURE THE HIGH G



## CSM Ralph Borja

Command Sergeant Major  
U.S. Army Space and Missile Defense/  
Army Forces Strategic Command



# Recognizing Enlisted Space Professionals

# SPACE

In mid-September, USASMDC/ARSTRAT hosted a training conference in Huntsville, Ala. The theme for the conference was “Growth in Our Mission Areas - Space, Missile Defense, and Cyberspace; Posturing for the Future to Better Support the Warfighter.” Over the course of four days, we examined all the command’s mission areas and heard from Army experts in the areas of training and exercise.

We also had an opportunity to hear from members of the FA40 career field – from members currently embedded with Army Divisions both within the Central Command area of responsibility, and those assigned to Divisions who have returned and are resetting. One discussion area was the lack of and need for an enlisted Space professional identifier.

Within the Army, there is no “career path” or Military Occupational Specialty for enlisted Space professionals. We’re often assigned Soldiers who may not have a Space operations background. We then invest a tremendous amount of time and effort into training and certifying them for highly specialized mission areas, only to lose some of them back to assignments in their base Military Occupational Specialty or career field at the end of their tour of duty.

However, Soldiers can now be awarded a Space-related Additional Skill Identifier such as 3Y (Space Enabler), 1C (Satellite Systems/Network Coordinator), Q4 (JTAGs Operator), or T3 (GMD System Operator). The addition of the 3Y ASI was recently approved by Headquarters Department of Army

## “This Additional Skill Identifier allows a method to identify and track Soldiers with Space-related training and experience”

G1 and is managed by the Army Space Cadre Office in the Army Space Personnel Development Office. This Additional Skill Identifier allows a method to identify and track Soldiers with Space-related training and experience. This also allows a method for U.S. Army Human Resources Command to identify experienced Space Soldiers for repetitive assignments to Space cadre billets.

In the future, as we continue to grow our enlisted Space professionals, we may want to consider the way the Air Force grows its enlisted Space professionals from the ground up, assigning them the 1C6X1 – Space Systems Operations Air Force Specialty Code, and manages their career as they grow in experience and rank. As 1C6X1s, the Air Force enlisted Space professional has clearly defined duties and responsibilities, and specialty qualifications which focus upon:

### Knowledge

It is mandatory to possess knowledge of: Satellite command and control, Space warning and control systems, and Space launch processes; orbital mechanics; data analysis procedures; sensor theory; data transmission theory; principles of satellite and ground systems; receiving, recording, and relaying operational data; and administrative practices.

### Education

For entry into this specialty, completion of high school with courses in physics, geometry, trigonometry, algebra, or computer science is desirable.

### Training

For award of the Air Force Specialty Code 1C631, completion of a basic Space systems operator course is mandatory.

### Experience

The following experience is mandatory for award of the Air Force Specialty Code indicated:

- 1C651 – Qualification in and possession of Air Force Space Code 1C631. Also, experience in functions such as spacelift command and control systems, telemetry processing, ground systems configuration, mission planning, anomaly resolution, and launch operations.
- 1C671 – Qualification in and possession of Air Force Space Code 1C651. Also, experience performing or supervising Space systems operations functions and activities.
- 1C691 – Qualification in and possession of Air Force Space Code 1C671. Also, experience managing Space systems operations activities.

The focus of this issue of the Army Space Journal is “Tapping into Space: A How-To Guide.”

While I am not advocating the Army mimic the Air Force system for training, certifying and managing its enlisted Space professionals, I am suggesting that as the number of enlisted Space professionals continues to grow, we’ll need to reexamine our use of enlisted personnel within the Space operations arena and to develop a method for growing and managing our enlisted Space professionals. Establishing an Additional Skill Identifier is a great step in the right direction.

# “SECURE THE HIGH G



## BG Kurt S. Story

Deputy Commanding General for Operations  
U.S. Army Space and Missile Defense Command/  
Army Forces Strategic Command



# Value from Space Assets

When thinking about Space-based capabilities and how they can help in the military effort, a quote from Albert Einstein comes to mind: “Make things as simple as possible, but no simpler.” By its very nature, Space is a realm that does not lend itself to simplicity. It is a very complex, technical environment with numerous areas to know and understand in order to put them to work for Warfighters. Understanding and applying that complicated technical knowledge, taking the complex and making the solution as simple as possible, is the value of a Space-savvy warrior.

Global Positioning System (GPS) and satellite communications are examples of intricate Space systems that have been simplified for everyday use. Many users take GPS availability for granted and often get caught short when interference issues arise, or when the GPS constellation is not positioned properly. Resolving these complex issues rests with the Space Soldier. It is their duty to understand the technical complexities and resolve them allowing the end-user to effortlessly fulfill requirements such as GPS-aided precision guided munitions. The Space community has a wide variety of tools and processes to help identify, characterize, geo-locate, predict and mitigate GPS electromagnetic interference. These same devices can be used to protect satellite communications signals as well. We must advocate and use the tools of our trade to make Space systems as simple and user friendly as possible without diluting their intricacies.

Another case in point is intelligence collected by satellites. Some may think that gathering imagery from a satellite will provide a complete answer to a question, but we know that on-orbit assets have limitations. For example, when the commander is looking for something small in a large area, he may have to make a trade-off in resolution to conduct the search. If the image is needed quickly, orbit and ground architecture constraints may prevent collection at the required resolution and processing within the time constraint. Weather and darkness may also preclude collection. There are always more collection requirements than there are collection

Simplified photo illustration of ARSST Team 3



“Make things as simple as possible, but no simpler.”

— Albert Einstein

capabilities, so prioritization can also delay or preclude the use of satellites to support a particular requirement. It could be that the better, simpler solution may be to gather the intelligence from a non-Space platform.

## Bridging

This is especially important in considering Space professionals as bridges between the commander who needs Space assets to successfully execute missions and the Space assets that enable. Most commanders understand that Space capabilities are not the solutions to every strategic, operational, and tactical situation, that they are merely combat multipliers. To make sound recommendations, we need to understand joint military operations as a whole and how the particular unit fits into the specific mission. Understanding and clearly explaining what Space system or tool is best suited for a mission, when it can be used, and how to apply it – this is the value Space professionals bring to their units.

People working in this field need to be creative and flexible in their application of Space knowledge and experience to best serve the unit. FA40s assigned to Space Support Elements (SSE) indicate that they are pulled away from their SSE planning duties to serve in Special Technical Operations cells. Since STO access is an inherent requirement for an FA40 to accomplish his mission, ingenuity will allow that Space professional to combine the STO and FA40 duties to maximize both and to bring the full spectrum of Space capabilities to the mission. As an example of this, look at the article about LTC Scott Parks on page 15. Parks’ story is an example of a diverse team of professionals from multiple disciplines that were enabled by Space-based technology integrating Space, air and ground assets to accomplish the mission.

## Partnering

One of the most important partnerships within the Army has been that forged between members of the Space cadre as they sought advice, information, support, and mentoring from each other. As a result of all these actions, ground-based command-

ers have better access to Space assets and the Army has gained acceptance as a viable partner in Space operations.

Because the Army is the largest user of Space systems, but has a relatively small Space budget and is still building its cadre of Space professionals, the Army has worked, teamed and partnered with those outside and inside the Service to establish partnerships – educated partnerships – that have empowered members of the Army at all levels to advocate for Space assets and capabilities for commanders and Soldiers in the field. The Army has assigned FA40s to Space-centric organizations: the National Reconnaissance Office, National Security Space Office, Air Force Space Command, National Security Space Institute and Office of the Secretary of Defense for Strategic Initiatives. FA40s inside the Service have shown how the effective application of Space capabilities and effects can enable successful combat and logistical operations. This was accomplished by senior Space leaders talking with fellow senior leaders; sharp, qualified FA40s assigned to MTOE (Modified Table of Organization and Equipment) units working side-by-side with their combat arms brethren; Space professionals on the Department of the Army and the U.S. Army Training and Doctrine Command (TRADOC) staffs advocating Space Operations; and others incorporating Space scenarios in wargames.

From now on our partnerships with academia and the industrial base will take on added importance. As in the fiction book *Space War* by Scott, Coumatos, and Birnes, where the attacks on satellites are solved only through the involvement of commercial companies with civil and military “investigators,” there seems to be increased agreement in government circles that civilian firms are going to have to be more involved as partners, not just contractors, to help Department of Defense and the U.S. government solve problems ranging from cyber vulnerabilities and attacks to building new rockets and responsive Space vehicles. The Department of Defense’s ISR (intelligence,

Space Assets >> page 14



**Dr. Steven L. Messervy**

Deputy Commander  
Research, Development and Acquisition



# RDA Reorganization

“We are building an agile, disciplined warrior team that is dominant across the spectrum of 21st Century conflict.”

- GEN George W. Casey Jr.  
Chief of Staff of the Army

In October, GEN Casey published an article in the Army Green book entitled, *The Army of the 21st Century*. He describes the trends affecting the strategic environment and the requirement for the Army to continuously change in order to remain dominant across the full spectrum of conflict. He writes about the need to build versatility into our Army, not only in the operational force, but also in the generating force and the institutions.

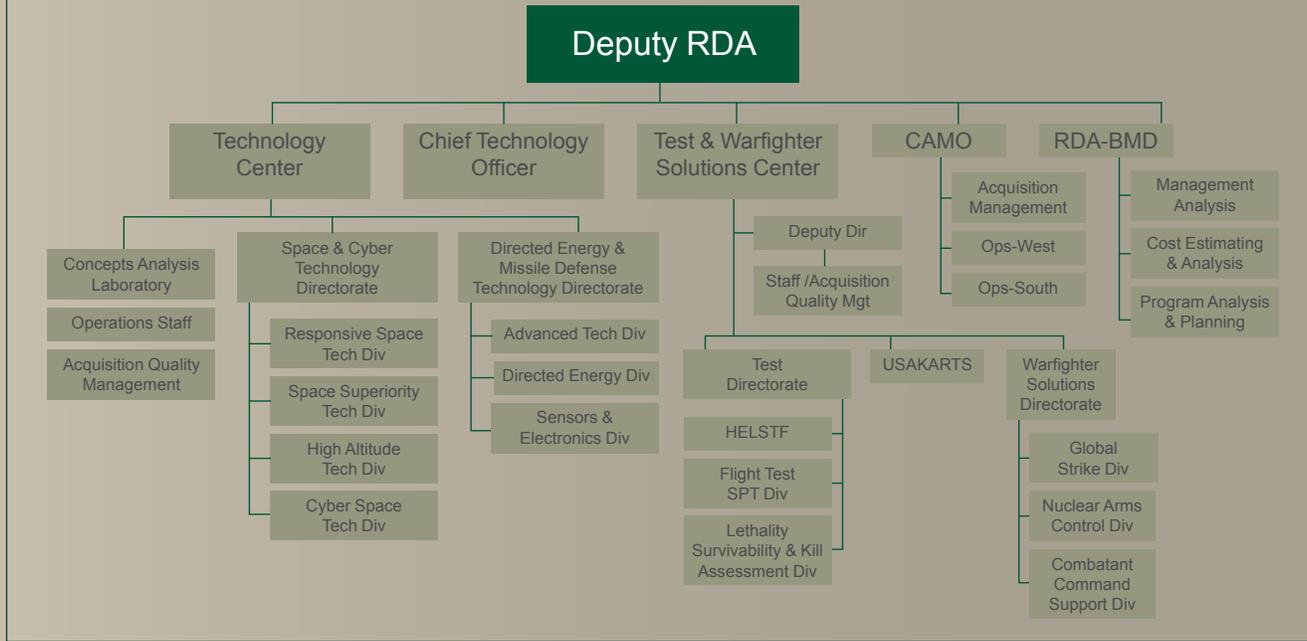
With versatility in mind, it is very fitting that I announce a change within the Research, Development, and Acquisition element of U.S. Army Space and Missile Defense Command/Army Forces Strategic Command.

The Army is changing to respond to challenges within the strategic environment. It became clear that USASMDC/ARSTRAT needed to adjust how it develops the technologies required to provide the dominant capabilities within Space, Missile Defense, and the new emerging domain of Cyberspace. The old organization had outlived its usefulness and it was time to better align with new and emerging Army missions. Additionally, we wanted to make sure those outside the organization knew who to contact in order to engage us on different technologies.

This change postures the command for the future by organizing the directorates to more closely align with functions and customers, most importantly – the Warfighter. The Technical Interoperability and Matrix Center has been renamed and reorganized into the, Test and Warfighter Solutions Center, and has consolidated the test functions under one directorate, as well as elevated the U.S. Kwajalein Atoll/Reagan Test Site (USAKA/RTS) higher in the command structure – signaling its importance to the nation’s test structure and processes.

ROUND”

## New RDA Organization



We believe we will also gain synergy by aligning Space and Cyber functions in one division and Directed Energy and Missile Defense in another division all under the Technology Center. The new RDA organization (above) balances the leadership and management execution; increases focus on Warfighter, Space, and Cyber Efforts; better aligns functions with customers; provides better synergy between technical solutions and Missile Defense; combines directed energy activities; and provides balanced personnel and budget portfolios.

While this reorganization is taking place we are not sitting on our hands. We know there is an overwhelming need for persistent Intelligence, Surveillance and Reconnaissance, and Communications capability for our Warfighters – no matter where they are, no matter what their mission. We also know they need to be able to control and operate these systems, reducing or even cutting out the middle man that our traditional Space systems bring to the fight.

Our Technology Center is taking the Unmanned Aerial Vehicle concept and applying it to small tactical satellites. We are working to demonstrate how very small satellites can be a force multiplier to help close those gaps for our Warfighters.

So far, we've built eight nanosatellites – we have the first satellite manifested for launch this fiscal year, and we're seeking opportunities to launch the other seven. We are excited about the possibilities the nanosatellites may bring to the Warfighter.

This is just one example of what our dedicated Soldiers, Civilians, and contractors are doing to support our primary customer – the Warfighter.

In an interview published in, National Defense Magazine, Vice Chief of Staff of the Army GEN Peter W. Chiarelli discusses the importance for speeding up the procurement process.

“We have to be better at being able to reach out, harness technology and get it into the hands of our Soldiers quickly ... we have to find a way, with technologies changing so quickly, to speed up our procurement process, to be more nimble,” states GEN Chiarelli.

USASMD/ARSTRAT's intent for reorganizing RDA was to develop a structure that is responsive, effective, improves the acquisition process, and provides new options for our Warfighters.

Reorganizations of any size are difficult at best and cannot be accomplished without the support of many people and organizations. This truly has been a team effort by the leadership, the union, our employees, contractors and those we support. My heartfelt thanks go out to those who provided the reorganization team feedback and support. I look forward to the innovative solutions that will be developed for the current fight and the future fight.

# “SECURE THE HIGH G



**COL Bruce Smith**

Director  
Directorate of Combat Development  
Future Warfare Center



# Space: “How- To ...”

In this issue of the Army Space Journal we are exploring the issue, “How-To.” It is a well established fact that the Army needs and relies upon Space capabilities, for everything from synchronizing fires, maneuvering forces to providing logistical support. The fundamental question the Army must answer is, “How does the Army provide, or deliver, the required Space capability to the Soldier at the time and place it is required?” The answer may be provided in a variety of ways, or combination of ways – doctrine, Soldiers, units, systems, and sister – Service support. There is no single answer to this question. However, I believe there is a single unifying element underlying the multiple answers: training.

The bottom line is the fact that the Army is made up of Soldiers and its success and abilities are dependent upon the Soldiers who fill its ranks. New and advanced technologies are pivotal to the U.S. Army’s success, as are communications systems and command and control procedures. Joint capabilities delivered by precise means in a synchronized manner are also key to the Army’s current combat capabilities. Behind the “tip of the spear” are complicated logistics and sustainment systems and procedures. Yet none of these work without the Soldier. If Soldiers are not trained, equipped, or ready the Army does not function.

Space is no different from Infantry, Artillery, Aviation or Armor; trained Soldiers are vital to mission accomplishment. The Army’s Space training program has evolved and matured dramatically since the first Space Operations Officer Qualification Course began in 2001. At that time the Army’s Space training consisted of the single course, conducted twice a year for newly designated FA40 personnel. The core curriculum consisted of orbital mechanics, satellite communications, theater missile

ROUND”

“Both the Space and Missile Defense mission areas will continue to grow in size and importance to the Army in the future.”

warning and imagery. In addition to the classroom work students took one field trip to the National Capital Region to visit various agencies and organizations working in the Space mission area. The last week of the course was spent participating in a Command Post Exercise – giving the students an opportunity to plan Space operations as part of a staff.

In the eight years since U.S. Army Space and Missile Defense Command/Army Forces Strategic Command stood up the FA40 qualification course, the Army’s use of Space has expanded and our operational constructs have changed. The 1st Space Brigade has stood up and Space Support Elements have been assigned to and are integrated into each Division, Corps and Army staff. New Space equipment has been fielded while other systems have been retired. These organizational and materiel changes have dictated changes to the Army’s Space Training program as well.

Today USASMDC/ARSTRAT develops and conducts numerous Space training courses to include the Space Operations Officer Qualification Course, the Tactical Space Operations Course, and the Joint Tactical Ground Station Initial Qualification Course. USASMDC/ARSTRAT is also responsible for conducting Space Cadre Enabler training for the Civilian members of the Space Cadre across the entire Army, as well as, Space training at the Command and General Staff College, Pre Command and Captains Career Courses at the Intelligence Center and Fires Center. This is all in addition to conducting training at the Army War College. USASMDC/ARSTRAT’s Directorate of Combat Development is also in charge of developing training products and the doctrine that supports and guides Soldier training. The Directorate is now responsible for more than Space training; today the Directorate’s Training Division is also developing and conducting Ballistic Missile Defense related training. Two Ballistic Missile Defense related courses are already being conducted; Ground-based Midcourse Defense (GMD) Operators Course,

and the GMD Sensor Managers Course. These two courses train Soldiers how to operate the GMD weapons system as well as the radars that support it.

Both the Space and Missile Defense mission areas will continue to grow in size and importance to the Army in the future. Consequently the Army’s Space and Missile Defense training requirements will continue to evolve and expand to meet increasing needs. With that increase in mind, USASMDC/ARSTRAT has begun planning to develop a new Directorate of Training and Doctrine, similar to other proponents and schools. The new Doctrine will give USASMDC/ARSTRAT and the Army increased ability to develop and deliver Space and Missile Defense training. The new organization should be more efficient and effective and better ensure that Space and Missile Defense training meets and/or exceeds all Army training requirements. It is my vision that one day USASMDC/ARSTRAT will operate a Space and Missile Defense school house – similar to other U.S. Training and Doctrine Command schools – that will provide world class training, training support and doctrine to our Soldiers.

“How does the Army provide Space support to its forces?” Training, and the supporting doctrine, is the answer. Trained Soldiers are the key to providing Space capabilities required by today’s Army. USASMDC/ARSTRAT’s Space training program has matured and expanded over the past decade in response to the Army’s needs. Space capabilities will grow increasingly important for the foreseeable future; consequently our training programs will continue to evolve, expanding in scope as well as in depth. The Directorate of Training and Doctrine will ensure that Space training will continue to meet our Soldiers’ increasing needs.

“SECURE THE HIGH G

## Space Assets >> from page 9

surveillance and reconnaissance) Task Force partnership with industry will be an interesting partnership to watch. The collaboration is designed to speed the development of long-duration unmanned airships that will carry ISR payloads for commanders in Iraq and Afghanistan.

### Education and Experience

Formal education mixed with multi-faceted unit experiences can broaden your base and make you as a Space professional enormously valuable to your organization. As noted earlier, Space is a highly complex, technical environment and Space professionals must be as conversant with the art of military operations as we are with Space. The greater your knowledge in the field, the better your understanding, and the more able you are to advocate Space assets in an operations plan. Upon graduation from the Space Operations Officer Qualification Course or from a Space Operations Master's Degree program, education and training have only just begun. Army and civilian institutions

offer a wide variety of in-class and online programs that support continuous learning both in Space as well as military operations. Assignments in a variety of units, dealing with a variety of Space systems, and working on a variety of Space projects are another way to complement your professional growth.

Space operations should be focused on how the Space professional can most effectively bring the value of the host of Space assets to bear on a unit's military operations, how to make those systems work for commanders and their Soldiers. Space professionals can best harness the value of Space by concentrating our efforts on understanding military operations, how our unit fits into operations and how Space can enable the mission; partnering with those inside and outside the Army who can best help provide Space capabilities to the warfighters; and continuing to grow professionally.

### Does all this matter?

Our Nation and its defenders need Space-savvy experts to ensure mission success and national security. Let me quote GEN C. Robert Kehler, Commander, U.S. Air Force Space Command, "Space capabilities provide intelligence that would otherwise be lost, warning that would otherwise be undetected, and communications that would otherwise be impossible. Space is no longer just the high ground; it is an integral part of the joint fight. And today, our Space capabilities are embedded in a complex of systems that serve joint forces and commanders at every level and across the spectrum of diplomatic, informational, military, and economic activities from peace through crisis and war. Operational plans and advanced weapons depend on Space, as never before and this dependence is likely to increase ..." It is the job of the Space professional to understand how to make the employment of those systems as simple as possible, but no simpler.

“Space capabilities provide intelligence that would otherwise be lost, warning that would otherwise be undetected, and communications that would otherwise be impossible.”

— GEN C. Robert Keller  
Commander, U.S. Air Force Space Command

# Simplify

# ROUND”



Simplified photo illustration of SGT Mark Bagwell, 1st Space Battalion



# Report from the Field

**I**n October 2007, LTC Scott Parks was the Chief, Space Support Element, 1st Armored Division (1AD), when the unit arrived in Northern Iraq for a 15-month deployment. The division had four maneuver brigades, one combat aviation brigade, one fires brigade and an engineer brigade to cover their operating environment of approximately 200,000 square kilometers. That's roughly the size of the state of Georgia.

Beyond the sheer size, Northern Iraq offered numerous challenges: An unsettled, diverse religious and ethnic environment in which each group was jockeying for power; a populace that viewed government from the local level to the central government as corrupt and uncaring; a lack of essential services; and unemployment that was rampant. As a result the 1AD had the highest attack rate of any Multi-National Division with the IED (Improvised Explosive Device) the insurgent's weapon of choice. The IED technology was generally low-tech but innovative and reasonably well thought-out.

The division's mission was to partner with the U.S. State Department and Iraqi Security Forces to improve the security environment, support and enable the Iraqi Security Forces, and to promote good governance and economic expansion. The division used all of its lethal and non-lethal operations to achieve those objectives.

Parks, as the Space Support Element chief, was responsible for coordination of Space force enhancements and Space control at the division level. He worked closely with the Division G2, G3, G6, which all had Space-trained personnel within their division. He also worked with the fires brigade, the engineer's topographical section and the supporting corps, as well as the Combined Air Operations Center Director of Space Forces to whom he sent requests for support and nominated targets for engagement.

In Parks' own words, he was "first and foremost a combined arms staff planner, with an expertise in Space operations." As such, he was assigned to function as the Chief of Information Operations, Space and Special Technical Operations. With

creativity and flexibility, Parks used both his Space expertise and his more general operational expertise to enable one of the division's most successful attacks on a target of opportunity. His story on the event follows:

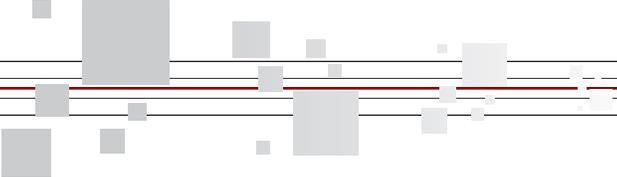
Space and intelligence professionals in Tikrit, Iraq, were monitoring ISR (intelligence, surveillance and reconnaissance) assets and identified suspected insurgent activity in near real-time. The activity was taking place over 100 kilometers away. The Space operators notified the division chops and the responsible brigade via satellite communications of the suspicious activity and its location. The brigade in the area flew an unmanned aerial vehicle over the location to "put eyes on target." Parks and the G2 staff were able to fuse multiple intelligence sources to confirm that the suspect activity was insurgent and met the rules of engagement. All the data to include GPS coordinates was provided via satellite communications to the decision makers. The responsible commander made his decision and requested close air support to engage the target, again using satellite communications. The aircraft received the mission and engaged the target using GPS-guided munitions. The target was destroyed and the brigade confirmed seven insurgents killed.

That process was repeated three more times in a 10-hour period using GPS-guided field artillery for two of the engagements rather than close air support, and almost 30 insurgents were confirmed dead. The best part being that this was accomplished without placing a single U.S. Soldier in harm's way.



**LTC Scott Parks**  
1st Armored Division  
Space Support Element

## "SECURE THE HIGH G



# A HISTORICAL PERSPECTIVE



COL Ronan Ellis is an ROTC graduate and entered the Army in 1961 in the field artillery. He spent most of his career except for the last four years in the artil-

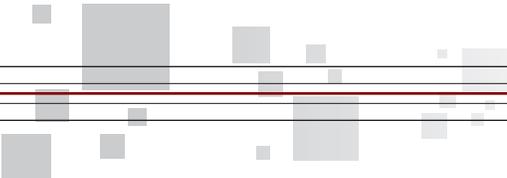
lery business commanding artillery batteries, battalion, and brigade, in Korea, Vietnam and Germany. In the latter part of his career he was selected to be the first Commandant of the Army Space Institute and eventually the second commander of U.S. Army Space Command.

The following text is an edited version of a historical interview between COL Ellis and U.S. Army Space and Missile Defense Command/Army Forces Strategic Command historian, LaJeannia Lacey. You can find the complete transcript of the interview online at <http://www.smdc-armyforces.army.mil/ASJ/>



.....  
 COL (Ret) Ronan I. Ellis  
 (1940 - )

<b>June 1961</b>	Field Artillery Commission through Hofstra University ROTC
<b>June 1965 – July 1966</b>	Battery Commander, 1/77 Field Artillery, 1st Cavalry Division, Korea.
<b>May 1968 – January 1969</b>	May 1968 – January 1969 Battery Commander, 3/18th Field Artillery, American Division, Vietnam.
<b>January 1979 – January 1981</b>	Battalion Commander, 1/30th Field Artillery, Augsburg Germany.
<b>June 1983 – December 1984</b>	Commander / Director, U.S. Army Atmospheric Sciences Laboratory, White Sands, N.M.
<b>January 1985 – January 1987</b>	Brigade Commander, 17th Field Artillery, Augsburg, Germany.
<b>January 1987 – April 1989</b>	First Commandant, U.S. Army Space Institute, Fort Leavenworth, Kan. Laid the groundwork for providing Space-borne communications, satellite imagery, weather data and positioning data foreground combat operations
<b>May 1989 – April 1991</b>	Second Commander, U.S. Army Space Command, Colorado Springs, Colo. <ul style="list-style-type: none"> <li>• Deployed 800 Small Lightweight Global Positioning</li> <li>• System Receivers and up to 10,000 Global Positioning</li> <li>• System Receivers for units participating in Operations</li> <li>• Desert Shield and Desert Storm. Using Space-based</li> <li>• sensors established theater missile warning, which evolved</li> <li>• into the Joint Tactical Ground Station.</li> </ul>
<b>May 1991</b>	Retired from the U.S. Army.
<b>May 1991 – June 1996</b>	Director, C4I, General Electric and Lockheed Martin Corporation
<b>June 1996 – January 2002</b>	President, REC, Inc.



** Little has been published on early Army Space efforts. Can you provide us some background?**

**Ellis:** Early efforts of the Army in Space were brought about by the Army Space Initiative Study. The study was directed by then Vice Chief of Staff of the Army, GEN Maxwell R. Thurman. He wanted the Army to be more involved in Space and to see what Space could provide the Army. Outgrowths of the study were the Army Space Institute at Fort Leavenworth, Kan., and the establishment of a small detachment that became Army Space Command at U.S. Space Command Headquarters in Colorado Springs, Colo.

** The Army Space Initiative Study developed the first Army Space Master Plan. How successful has the Army been at accomplishing the goals outlined in this plan?**

**Ellis:** The study and the master plan really didn't attract a lot of attention in the Army. The Army had basically established the Army Space Institute and Army Space Command, but the study and the plan were too far reaching in their initiatives and recommendations for that time. No one in the Army, certainly no one in the leadership of the Army at that time supported it, including GEN Maxwell R. Thurman and GEN Carl Vuono, who was soon to be the Chief of Staff of the Army. They weren't looking long-term, they only wanted to know what we could do now and how were we going to do it. Probably a good deal of what the master plan laid out did come through to fruition, but not so much because of the plan itself, but because of the initiatives of the people at the Army Space Institute and Army Space Command.

** What other new missions did ARSPACE receive during this period of growth?**

**Ellis:** ARSPACE didn't receive any new missions. We went out and assumed missions. These missions were established by the force of the command's personalities and knowledge, and by its organization as the Army Space Command, a component command of U.S. Space Command. We took it upon ourselves to be the procurer and trainer of GPS systems and weather systems. We bought things and we sent training teams out. We also established ourselves as the Army proponent for missile defense because of our close relationship with the Army Strategic Defense Command in Huntsville, Ala., and with the Strategic Defense Initiative's (Star Wars) group in Washington, D.C. We became involved in missile warning because that was a mission of U.S. Space Command, but it wasn't really getting to the tactical Army and that effort yielded JTAGS. We didn't receive a mission from anybody. In fact, I had a deputy who said, "You know, we haven't gotten any of these missions from the Department of the Army. Why are we doing them?" And I said, "It's our job to determine what our missions are and we will take those missions that are appropriate and execute them." And we did.

** The DSCS Operations Centers transferred to Army Space Command in October 1990. Did this new mission reflect your program for the command?**

**Ellis:** Not at all. The Defense Satellite Communications System operations centers were part of a larger command at that time. I think it was the Army Communications Command out of Fort Huachuca, Ariz.,



Shown above is a Small Lightweight GPS Receiver (SLGR) and Satellite Communication set up, circa 1993.

and they had a major mission. The Operation Centers were a small subset of that mission and were assigned to Army Space Command prior to my arrival - much to the concern of the Army's signal center. It certainly got us directly involved very quickly in Space operations, because that's what the OCs did, they controlled the satellites. It turned out to be very successful, and a good start for the command. The personnel came from the Operations Center side of the Defense Satellite Communication System. They were deployed worldwide and they were under the command of the Army Communications Command. The people transferred to us to run this mission, were all senior, noncommissioned officers. They were truly amazing non-commissioned officers and knew everything about DSCS OCs. They sounded like they knew what they were doing. So I let them do it and told them if they had any troubles come to keep me informed. Basically the noncommissioned officers and senior noncommissioned officers of these operation centers put this mission into place.

**▲ Operation Desert Storm has been described as the first Space war. In your view, how accurate is that assessment, and what was the impact of the Army Space efforts on the field Army?**

**Ellis:** I think it was the first war that used the Space capabilities to support the Army, and to joint commands in the field. It was not a war in Space, but it did bring to bear Space capabilities to the Army in the field. You could not have had a better impact. These demonstration items and the capabilities that were in Space allowed the Army to realize there was something here and we could then move on from demonstrating commercial applications of existing Space capabilities to starting to state our requirement for future Space capabilities and how we could change the processing of those Space signals. It



The Small Lightweight GPS Receiver (SLGR) was distributed during the Operation Desert Shield/ Desert Storm era to provide GPS capabilities to deploying ground forces and aircraft.

was clear the next step was to actually have a picture of the battle field if the GPS and the radio were integrated. We could go from location to command and control. We have actually been doing that for some time now.

### **What was your greatest challenge and what was your most significant accomplishment?**

**Ellis:** The greatest challenge was to educate the Army and then execute the programs that would allow Space capabilities to support an Army organization that was sometimes not interested, many times downright negative, and did not want anything to do with these new things. But the more I got into it the stronger I felt about it. I felt this was going to be, in the waning years of my Army career, the most significant thing I could do for my Army. We took these growing Space capabilities and supported the Army and then from that support the Army demanded more, so they got more. I think you can see the kinds of things that are going on now kind of bear that out. That was our biggest challenge and that was our biggest accomplishment.

### **What do you see as the future for Army Space?**

**Ellis:** I've been retired for eighteen years now so I'm full of history, but I don't know a lot about the future. I was with them last year when they gave me an award as a pioneer in Space and missile defense, so I got to see, so many years later what they're involved in now, and I see there's a tremendous future for the Army. Not so much the Army in Space, but what the Army can receive from Space.

## **In your view what were the Army Space Institute's successes and failures, and why was it terminated?**

**Ellis:** The Army in Space was brought about by GEN Maxwell Thurman. He didn't know what the Army needed to do in Space but he knew the Army should be doing something. The rest of the Army did not openly embrace Space. There wasn't room for anybody else because all areas of Army capabilities were already taken care of under the charter of each of the schools – artillery, infantry, tanks

and signal. The Army Space Institute stepped on every one of those schools' prerogatives in areas they felt we should not be involved.

The success of the Institute was the demonstration program. The training programs and the initial attempt at developing materiel requirements for Space capabilities were successful although Army Materiel Command never really accepted those. Going forward in time for a moment, at the end of the first Gulf War when Space capabilities were first used by the Army, Materiel Command didn't know quite what to do with commercial GPS receivers that were in all Army units and used extensively throughout the war. They had been bought and delivered by Army Space Command, but since they didn't recognize the method in which they were purchased, they basically zeroed out the budget for those items.

I retired at that time and I was asked what the Space Command should do about the receivers. I said actually nothing. I knew when the troops came home from Desert Storm they would want to know where those devices were. I knew they would be repurchased and reacquired very, very quickly, and they were. The success of the Institute was to get Space capabilities out to the Soldiers, and it was very fortuitous that we did because of what happened in the first Gulf War. The failure of the Institute was not having an organization that was more accepted by other Training and Doctrine organizations, and not having ensured upon my departure that I was replaced by stronger leadership. That is why the Army Space Institute was terminated after I left. There was no strong leadership put in place that could articulate what we were trying to do and there was no lust within Training and Doctrine Command to continue an organization that was chipping away at so many of the other schools' areas of responsibility. 

## Editor's Note

In the previous issue of the Army Space Journal, a question and answer article was printed based on an interview with retired Army GEN Ed Anderson. During this interview, Anderson was also asked to comment on the theme for the current Army Space Journal, "Tapping into Space: A How-To Manual." Here is what he had to say:



## What specific message do you have for the Army Space Community that relates to the theme "Tapping into Space: A How-To Manual?"

### Ed Anderson

I would make a recommendation to the Army Space Community about enhancing the ability of our own Army folks to better draw from Space capabilities. I hesitate to go into war stories but, in Vietnam we had Forward Air Controllers (FAC) – it wasn't just during Vietnam, because the Army had them for a long time beforehand. They were Air Force pilots who were part of Army organizations out in combat zones hoping to get a call for fire or other aide. The point was it gave that pilot an idea of what the situation was on the ground that he was responsible for supporting.

My thought is we should try to work with the Air Force to bring together Space FACs and put them in our Army Space Support Teams or maybe our Space Support Elements and take them downrange in Iraq and Afghanistan to let them see what it is that our folks need to use Space for. At the same time, our folks can then learn from them as to what folks who are flying these satellites are doing back here in terms of responding to their needs. The combination I think leads to a much better understanding of what's doable in terms of requirements, future requirements for capabilities, etc. That would be something that I would recommend as a way ahead for the Army ... to partner with the Air Force and do this in a truly Joint way on the ground. Usually when we think of Space, we think about up there, we don't always think down here. We need to start thinking about it in that way.



# TACTICAL SPACE

BY CAPT. ANDY R. LEE, USMC  
LTC GUY M. BURROW

## LESSONS FOR THE NEW FA40

### Editor's Note

The guidelines in this article are based on lessons learned by the authors, during their operational deployments in support of Operation Iraqi Freedom (OIF) as well as numerous Joint and Combined exercises at the Marine Expeditionary Force through Combined Joint Task Force level.



For those in the Functional Area 40 career field, several thoughts may have crossed their minds before they made the choice to leave their basic branch and join the ranks of the relatively few FA40s serving in the Army today. The initial thoughts could have been “I’ve got to choose a Career Field? ... FA40? I didn’t know we had Space Officers. Sounds interesting – I’ll put it down as my third choice.” Another thought may have been, “This is my ticket to becoming an astronaut!”

Once the career field was selected, the apprehensive investigation began into what Army “Space Operations” is really all about. During the first major stop in Space education, the Space Operations Officers Qualification Course (SOOQC), officers likely experienced one or both of two distinct reactions: the first, amazement at the numerous Space-based possibilities and technologies; the second, skepticism in whether or not they could make these capabilities relevant, particularly at the tactical and operational levels of military operations. Rest assured that both of these reactions still resonate with experienced Space officers today.

It may not have been difficult to become a Space Officer, but it takes hard work, dedication, and continued professional development to become a significant and relevant member of the warfighting staff. Although the astronaut idea may not have come to pass, Space Officers are still one of a select few.

This article is intended to give new and perhaps even the experienced Space Operations Officer five rules for success as an FA40 at the tactical and operational staff levels. These rules are not focused on specific technologies or tasks; rather, they focus on the individual through organizational responsibilities

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# FIVE RULES FOR THE NEW TACTICAL FA40

## Rule 1 — Sometimes It Takes a Rocket Scientist

In November 2005, during a Leader's Professional Development session in the Al Faw Palace in Baghdad, Iraq, the MNC-I Commander, LTG John R. Vines, told the officers and senior enlisted in the room, "Today's warriors need to understand technology. Today's leaders need to understand the electromagnetic spectrum." If this is true for the wide audience of the MNC-I staff, it is certainly the case for the Space Operations Officers on the warfighting staff. While the Space Operations Officer Qualification Course provides the new FA40 with the basic academic foundation for applicable Space topics and technologies, this is only the beginning of the education process, focusing primarily on the basic Space Force Enhancement areas outlined in JP 3-14. The FA40 should always be prepared to perform the standard tasks associated with Space Force Enhancement. An example would be completing or obtaining a GPS navigation accuracy report. On today's battlefield this type of information is required knowledge and valuable when needed, but is rarely asked of the FA40. Knowing these basic Space Force Enhancement tasks will create a successful and functional Space Operations Officer. In order to be effective, an FA40 should strive to know the details and science behind the tools they will ply. For the navigation accuracy example, do they really understand what degrades GPC accuracy, and more importantly how it can be improved? This is what the commander's really want to know. These FA40s are the Space expert on the staff – they know the science behind the current and emerging technologies.

One of the charters of the FA40 is to investigate, advocate and integrate new and emerging technologies, whether they are purely Space-based or simply Space-enabled. This is an area where the FA40 can have a true, meaningful impact. The Space Officer needs to know how to find and understand the capabilities of new Space-related assets in order to integrate them into com-

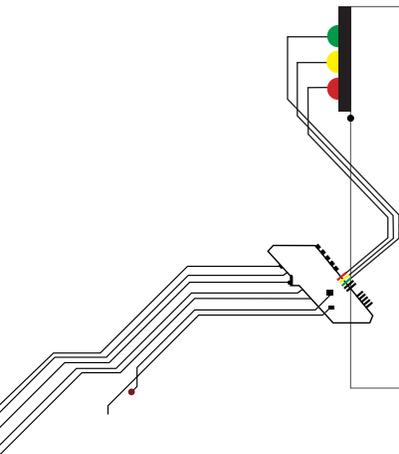
bat operations, further facilitating the commander's intent. For starters, they need to use the many Space-related organizations and personnel first introduced to them during Space Operations Officer Qualification Course. As FA40s continue their research into new capabilities, they will make new contacts. They must use this ever expanding network to find new products and capabilities, and also to filter problem sets in search of new solutions. They will soon build a database of knowledge on current, new and emerging capabilities, and be well on their way to being the "rocket scientist" their leadership expects them to be.

## Rule 2 — Innovate and Educate

Understanding how Space-related capabilities work will go a long way to helping FA40s understand how to employ them in support of conventional maneuver operations in new and innovative ways. Space and some of the associated technologies by themselves are not silver bullets – they will not "win the war" on their own. However, when combined with other conventional assets and operations, non-traditional technologies can have a significant impact on the success of the mission. Often, these capabilities can be used in ways that they were never intended. For example, the Counter-Improvised Explosive Device effort in Iraq currently leverages multiple Space-enabled capabilities, some designed years ago for a completely different strategic fight.

Coming from the various combat arms and support branches prior to selection as Space Operations Officers, FA40s are uniquely poised to combine their previous conventional branch experiences with their knowledge of special technologies to develop supporting strategies for the ground commander requirements. Too often, the "forty-pound" brains design new capabilities that have potentially beneficial capabilities, yet they lack the ability to integrate their tool into a practical military application. Space Operations Officers are the best qualified on the staff to accomplish this critical goal.

After many years of experience in Europe and Asia as well as more than eight years of combat operations in numerous theaters since September 2001, most staff sections understand the basic Space Force Enhancement contributions to their specific areas of responsibility. For example, the Intelligence personnel are usually well versed on Spaced-based Intelligence, Surveillance and Reconnaissance (ISR), one of the traditional Space Force Enhancement missions. However, the FA40 should always be prepared to inform and educate applicable staff sections on new possibilities and techniques. On rare occasions,



As always, information needs to continually be “pushed” to the other staff sections and they should be included in planning and staffing processes. The FA40s integration into the unit battle rhythm and staffing process will typically satisfy this requirement and help determine the balance of where FA40 assistance is needed.

their expertise may be required to assist the various staff sections on existing products, services and procedures already at their disposal. Tailored Space education briefs are excellent seeds for future products and requests. The amount of support and education rendered depends largely on the inclusive Space knowledge of the unit being supported.

### Rule 3 — Be a Good Staff Officer

Coming up with new and innovative applications for Space-related technologies is not the end of duties as a Space Officer. The most important step is translating innovate ideas and/or concepts into action, ensuring the right information, capabilities and effects get to the right people. Like everyone else on the staff, FA40s are only as effective as their ability to adhere to the time-tested staffing process and procedures. A good Space Operations Officer knows the commanders intent, current intelligence, and the planning cycle, and is well integrated into the battle rhythm. It is good to remember that Space is not done for Space’s sake; it is driven by the commander’s intent. In order to ensure that concepts and capabilities are put into action FA40s must be well-versed in standard military staffing and orders production. This includes knowing the Military Decision-Making Process; Decide, Deliver, Detect, Assess targeting methodology, Fragmentary Orders, Contingency Operations, Executive Orders, Battle Drills, and the like. Nobody else is going to deliver these — if they are not done correctly Space products or ideas will never survive the grueling staffing process. FA40s must be able to translate innovative ideas into the standard military language that drives operations.

### Rule 4 — Know Who You Work for and With

For Space Operations Officer, the major emphasis is on the Operations portion of the title. The Space Officer is in a unique position, involved with capabilities that cross numerous staff sections and areas of responsibility. While Space crosses many functional areas across the staff, the main driver for operations is the G3, C/J3, or S3 or the Commanders themselves. Accordingly, most Space Operations Officers at the Corps and Division levels find themselves working directly for or respon-

sible to the Operations Officer. In this construct, it is imperative to educate and demonstrate to the Operations Officer how Space-related capabilities can contribute to accomplishing the commander’s intent. Similarly, it must be ensured that subordinate commands understand what FA40s can offer as well. As a result, the appropriate “pull” for Space-related products and support from the Operations section, if not subordinate line units themselves, will be generated.

This is not to suggest that other staff sections get bypassed on the way to engage the Operations Officer, especially when the Space-related capability falls in a specific staff section’s area of responsibility. As always, information needs to continually be “pushed” to the other staff sections and they should be included in planning and staffing processes. The FA40s integration into the unit battle rhythm and staffing process will typically satisfy this requirement and help determine the balance of where FA40 assistance is needed. Often information to help with the decision making process is needed from other sections. This may be the S2, the Targeting Officer, the Information Operations Officer, or even a separate governmental agency. It is difficult, if not impossible, to remain relevant by sitting in a section or secure facility — FA40s must be willing and able to get out and integrate with the key staff and support agencies in order to develop the key relationships that will make their capabilities most relevant. Similarly, Space is Joint. When deployed, the FA40 will work with a wide variety of Space professional. Other services own or participate in Space-related operations, services and capabilities. FA40s should develop allies and mutually supporting relationships with all of the key Space players in their area of operations. Ultimately, all should be working toward the same goal — pushing Space to respective staffs.

### Rule 5 — Be Confident and Aggressive

Having a solid technical background should provide the required confidence in developing new concepts and educating others on Space derived benefits or procedures. As a member of the operations staff it is the FA40s responsibility to ensure the solutions they bring as well as their concerns are vetted with the G/J/S3. While they may face skepticism on occasion, they must be passionate, confidant, and, ultimately, aggressive in ensuring

information is delivered to the appropriate decision makers. Being grounded with a firm technical foundation, with properly developed plans and products allows for aggressive engagement with these key personnel.

The need for integration across the staff has been discussed. This often necessitates FA40s to attend other staff sections' planning or intelligence meetings. FA40s should seek out these opportunities and ensure an invitation to these events – sometimes just by showing up, but they must come prepared to provide worthwhile input and develop their reputations every time they speak or when someone views Space products or presentations.

When possible, FA40s should seek opportunities to deploy – they will learn more during a month of deployment than an entire year in garrison. Deploying gives credibility and invaluable on-the-job-training with both current and emerging technologies. Of course, FA40s should always capitalize on their experience by developing and sharing after action assessments, lessons learned, and professional journal publications. The smart FA40 learns from others; ensure experiences are not forgotten and available for future generations of Space cadre.

## Conclusion

Development into a relevant part of the staff as a Space Operations Officer requires significant work and dedication. It starts with a strong desire and dedication to learn and understand the science behind Space-related assets. By combining this newfound knowledge with background branch experience, FA40s will be able to educate others and develop new ideas for integrating these technologies into plans supporting the commander's objectives. Proficiency and integration into the military processes of the staff will ensure that these plans become a reality. Understanding who to work for and with will develop the necessary relationships to successfully integrate contributions. In total, these efforts will give FA40s the confidence in their abilities, allowing them to aggressively support their command, making the Space Operations Officer a key member of the warfighting team. The above five rules are the result of extensive and diverse experiences gained during operational deployments and should serve FA40s well as they continue on their journey as Space Warriors. 

# BIOS

## CAPT. ANDY R. LEE, USMC

Capt. Andy R. Lee is a Marine Corps Space Staff Officer currently assigned to 1st Space Brigade. His 10 years military experience includes over 700 flight hours before transferring to USMC communication and the Space MOS. Capt. Lee's operations include three combat tours including two Space Staff Officer Billets, NATO & Ulchi Focus Lens (UFL) Space Team exercises, and serving on the only Joint Space Team in theater as the II Marine Expeditionary Force Space Staff Officer. Capt. Lee received his B.S. in Aeronautical Studies with a minor in Space Studies from the University of North Dakota, and has recently completed his M.S. in Space Studies from American Military University.

## LTC GUY M. BURROW

LTC Guy M. Burrow became an FA40 in 2003 after 10 years of service as an Army fixed-wing Aviator. He is currently the Chief, G3 Technical Operations and senior Space Operations Officer at the XVIII Airborne Corps. His combat operational experience includes two tours in Iraq serving as the Deputy, Multi-National Corps-Iraq C3 Space and Special Technical Operations during OIF 04-06, and later as the Chief, MNC-I C3 Technical Operations for Operation Iraqi Freedom 07-09. LTC Burrow received his M.S. in Electrical Engineering in 1992 at the United States Military Academy and later his M.S. in Electrical and Computer Engineering from the Georgia Institute of Technology in 2002.

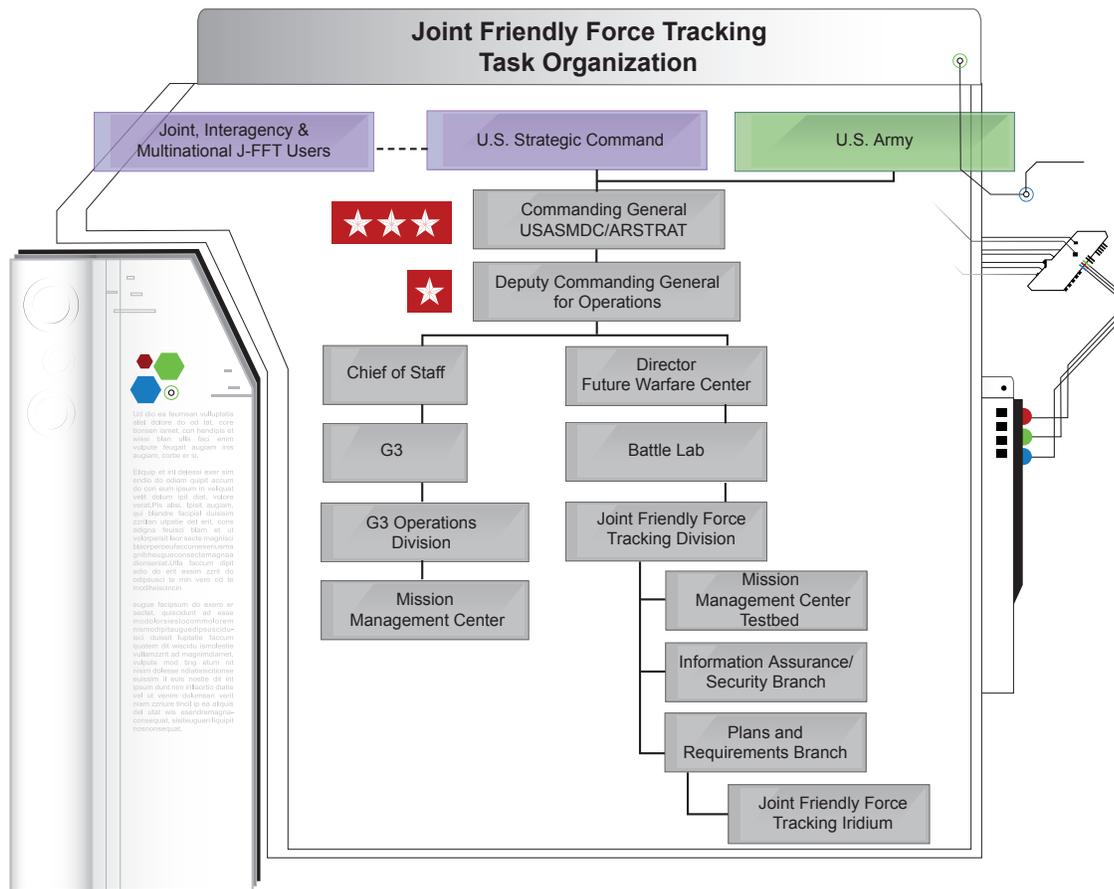
# USASMDC/ARSTRAT's Joint Friendly Force Tracking Mission

## — NETWORK OPERATIONS SUCCESS!

BY FLOYD LIGHT,  
USASMDC/ARSTRAT BATTLE LAB;  
J-FFT DIVISION CHIEF;

U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's Joint Friendly Force Tracking (J-FFT) mission provides an example of a component activity that has evolved and changed significantly, but still achieved substantial success by closely aligning an organic development capability with implementing a data services approach based on five functional tasks. Our message in this article is threefold: convey the new J-FFT organizational construct within the command; explain the five elements essential to the J-FFT data services mission; and articulate how this expanding and successful J-FFT support mission should be considered Network Operations success. U.S. Strategic Command's Network Operations critical task of Content Management — the availability and timely delivery of information to satisfy mission needs — is the essence of our J-FFT mission.

The command's J-FFT Division and Mission Management Center lead the successful planning, development and execution of U.S. Strategic Command's directed task to provide 24-hour, 7-day per week J-FFT data services support to combatant commands, agencies, allies and coalition partners. We trace and attribute our success to carefully established standards and processes implemented by a workforce of technical and operational experts motivated to responsively satisfy the FFT needs of organizations and users. Today, our command is organized to deliver the timely and assured capability development and FFT data services required to satisfy the operational needs of joint, interagency and coalition users to increase Situational Awareness, thus



enabling better command and control of forces and lending to fratricide reduction via more readily available precise location of friendly forces.

This article provides background and important details regarding the command’s J-FFT mission; revised joint guidance regarding the mission; the five basic functions that illustrate the FFT data services we provide every day to joint, interagency and coalition partners; and finally the inherent alignment of FFT data services to cyber and network operations.

## Background: Evolving, Expanding Mission

U.S. Strategic Command inherited its J-FFT mission after merging with U.S. Space Command in 2002. Prior to this merger, in March 2001, U.S. Space Command had designated Army Space Command as its lead service component for Blue Force Tracking to provide the Department of Defense with Blue Force Tracking exercise support and technical development (we discuss the change from “Blue Force Tracking” to “Friendly Force Tracking” in the next section). U.S. Space Command had demonstrated a capability to track forces using national technical means (NTM) which seemed ideal for Special Operations Forces. This capability promised to provide a beyond line-of-sight, low probability of detection and interception, precise location of Special Operations Forces elements with the Blue Force Tracking data being reliably, securely and discretely disseminated to critical command centers via a data center.

Immediately following the September 2001 attacks, the J3, U.S. Space Command ordered the NTM tracking capability into operational use and activated the Mission Management Center at Schriever Air Force Base, Colo. By January 2002, U.S. Space Command transitioned operational control of the center to U.S. Army Space and Missile Defense Command/Army Forces Strategic Command; the center moved to its current location in Building 3 in October 2002. By the end of 2002, there was a significant expansion of this NTM Blue Force Tracking capability as part of Operation Iraqi Freedom to over 2,500 NTM Blue Force Tracking devices, each supported by the Mission Management Center.

Soon after Operation Iraqi Freedom Phase I, the Army put significant effort in capturing lessons learned and prioritizing problems to resolve for continuing Operation Iraqi Freedom operations. In 2003, the U.S. Army Space and Missile Defense Battle Lab assumed operational management of OSD’s Joint Blue Force Situational Awareness Advanced Concept Technology Demonstration aimed at developing a capability to merge the data from diverse Blue Force Tracking systems in Operation Iraqi Freedom into a Common Operational Picture. OSD assessed this capability as a critical mission gap and after a solution was developed by the Mission Management Center-Test bed, it transitioned to operational status in the center in 2005.

As command and control evolves and more FFT systems are deployed globally, the critical need for FFT data interoperability across security domains and across FFT systems for

joint, interagency, and multinational users increases. In order to address the command's mission expansion, the Commander, USASMDC has designated the Battle Lab as command lead for Blue Force Tracking and the Battle Lab has established the Mission Management Center-Test bed to support capability developments for the MMC and mission partners. Consequently, USASMDC/ARSTRAT's J-FFT responsibilities have matured to include executing: FFT translation and Web-based data services for an expanding set of data consumers; U.S. and NATO data exchange in Afghanistan; and deliberate planning to Operations and Concept Plans for J-FFT activities. Today the command provides data services associated with tens of thousands of Blue Force Tracking devices across Department of Defense, other Departments, other government agencies, and allies.

## Mission (BFT is now FFT): Joint Responsibilities and Command Task Organization

### *The Joint FFT Mission*

In December 2008, the Director of the Joint Staff approved a revised Joint Staff Instruction (CJCSI 3910.01), Friendly Force Tracking Operations Guidance, to provide more detailed and updated guidance for J-FFT operations and support. While most all understand what "Blue" in Blue Force Tracking means, the term "Friendly" in FFT is more consistent with joint doctrine and coalition lexicon. Additionally, many systems are using Blue Force Tracking as systems' names vice accurate capability descriptions. Hence, we have adopted and encourage using this newly directed joint/coalition lexicon. The new CJCSI 3910.01 tasks U.S. Strategic Command with eight critical responsibilities. Through Operations Orders and Strategic Instructions, Commander, U.S. Strategic Command has delegated the execution of these responsibilities and tasks to U.S. Army Space and Missile Defense Command/Army Forces Strategic Command as its Army Service Component Command.

While responsible for the eight U.S. Strategic Command tasks, USASMDC/ARSTRAT's two fundamental tasks are to:

- provide FFT data services on a continuous basis to combatant commands. They will also provide these services to agency, allied, and coalition users when directed, as support for homeland defense, combat, civil and contingency operations.
- provide a combat development capability integrating FFT data into current and planned architectures for use on the appropriate Common Operational Picture. They will also respond to satisfy requirements from combatant commands, agencies and multinational partners.

To accomplish its assigned J-FFT mission, USASMDC/ARSTRAT employs a Mission Management Center (under the G3) and a J-FFT Division with its four supporting branches (under the Future Warfare Center). Under an approved U.S. Strategic Command Operational Order and Concept of Operations these elements execute the specified tasks, but also the myriad of implied tasks necessary to provide day to day support. Close coordination, integration, and unity of effort across command lines and engagement with mission partners are critical to successful mission execution.

## Approach: Concentration on Five Basic FFT Data Functions

In order to successfully execute both the development and operational support aspects of the assigned mission, the J-FFT Division's Mission Management Center-Test bed must closely align its combat development capabilities (based on an expert understanding of the mission's five functional tasks) with the eventual implementation of the data services in the operational Mission Management Center. The objective of the data services support is to assure data exchange, integration, and dissemination for J-FFT users. The guiding principle is to make J-FFT data visible, accessible, and understandable and the desired end state is the timely delivery of the right data to the right user in the right format.

While many users and operators often focus on their specific system in explaining an FFT capability, readers should understand that for the FFT mission to work there is much more than just a device transmitting a position report. As reflected in Figure 2 and described below, our command has achieved success by understanding that FFT systems are broken into five basic functions: generate, collect, process, disseminate, and display.

### *Generate*

Typical FFT devices receive position and time information from the Global Positioning System and generate a FFT message that includes, at a minimum, a unique device identification alphanumeric and Global Positioning System data (time, latitude, longitude, altitude). The FFT community typically refers to this data as Precise Location and Identification data. With proper connectivity and accreditation, this data is delivered to the Mission Management Center via the Non-secure Internet Protocol Network (NIPRNET) or Secure Internet Protocol Network (SIPRNET) in the FFT system's native formats<sup>1</sup>.

### *Collect*

The Precise Location and Identification data is collected, processed and relayed via a data transport system (e.g. Iridium, EPLRS, aircraft line-of-sight receiver).

### *Process*

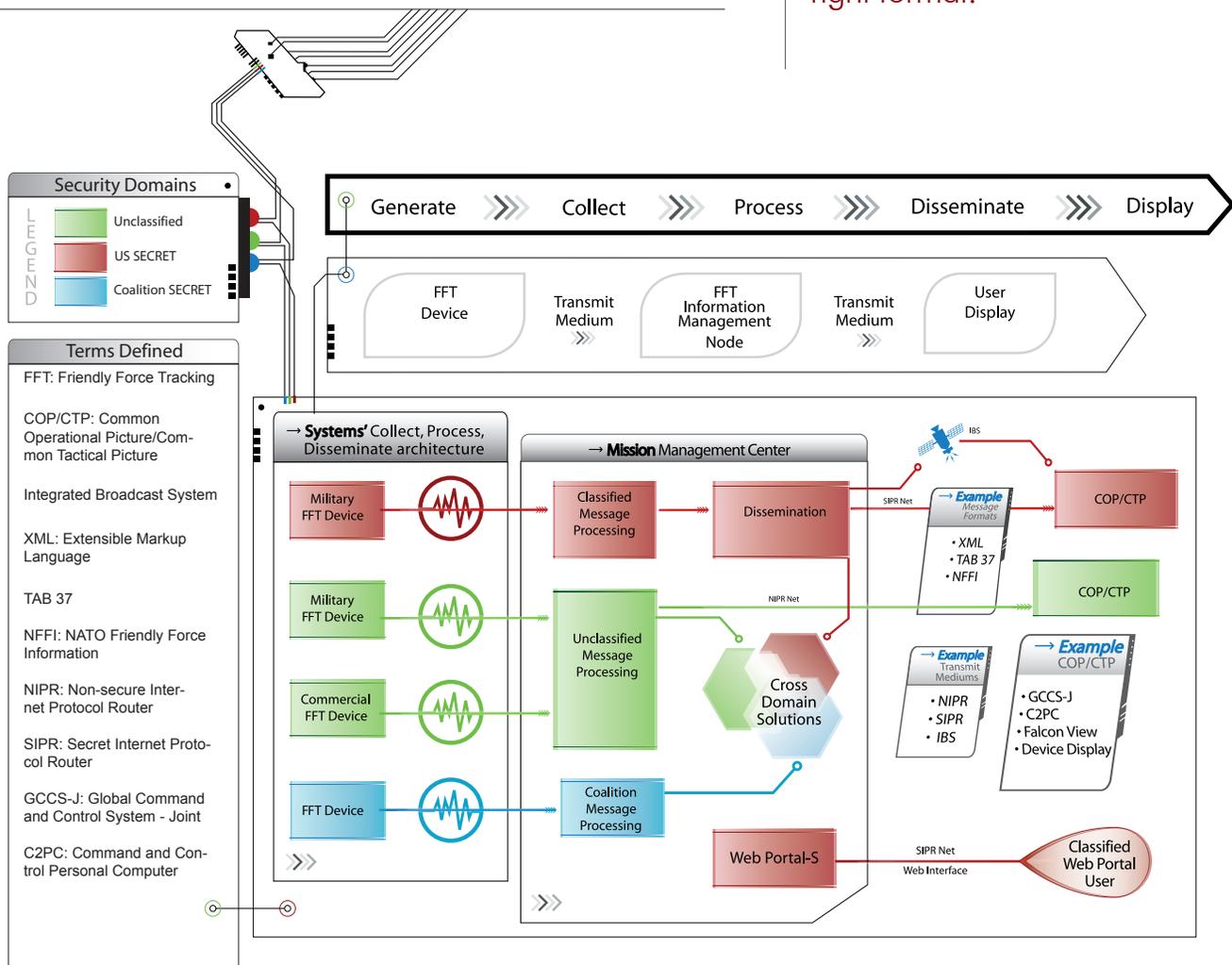
Once received at a J-FFT Information Management Node (in our case, we use the Mission Management Center, though some

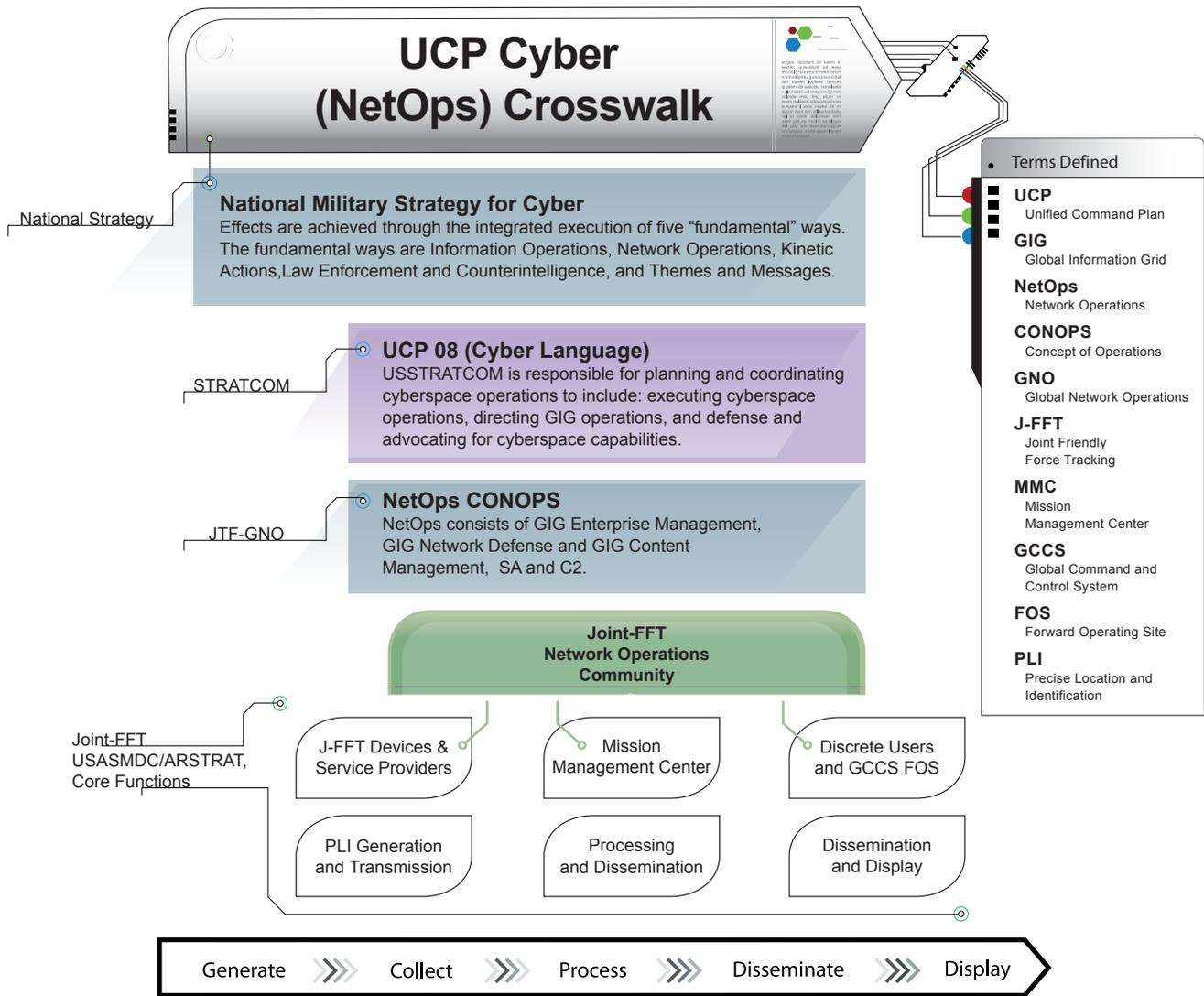
systems maintain independent “stovepipe” processes), additional data, known as association data, can be added to the Precise Location and Identification to create a known entity/object/track. Association data adds clarity to the device position report by further identifying the friendly entity. Adding this data can turn a “blue dot” for a friendly position report into more meaningful information like unit or platform identity. Users interface directly with Mission Management Center staff to provide the appropriate data to be associated with the transmissions from their devices. Once the FFT data arrives at the Mission Management Center, the information management process to get the “right data, to the right user, in the right format” begins. In many instances, this requires a translation of the FFT data into an Extensible Markup Language format and moving the data between classification domains. The Mission Management Center accomplishes this task via an approved Cross Domain Solution specifically designed for J-FFT data. With proper Data Owner Guidance the Mission Management Center can move unclassified FFT Precise Location and Identification data from the NIPRNET to SIPRNET and vice versa.

**Disseminate**

Once the J-FFT data is in its proper/directed security domain and has its association data attached, the Mission Management Center will disseminate the correlated Precise Location and Identification and association data (J-FFT data) to the right user in the format specified in the user’s Data Owner Guidance.

The guiding principle is to make J-FFT data visible, accessible, and understandable and the desired end state is the timely delivery of the right data to the right user in the right format.





**Display**  
Users at the tactical, operational, or strategic levels use command and control display systems such as Global Command and Control System-Joint, Command and Control Personal Computer, or other tactical systems, e.g. Force XXI Battle Command Brigade and Below terminals and Falcon View to present the data. These details are coordinated in the planning phase.

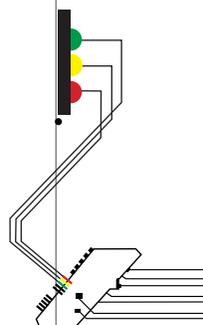
While the core of the Mission Management Center's mission involves the Precise Location and Identification portion of the FFT transmission, many FFT systems also include a 3-digit brevity code for status. For these systems, getting that data to the right user is equally important. Of critical significance is the Mission Management Center's responsibilities related to those NTM systems and certain Iridium FFT systems that can transmit a "911" or emergency message. For this critical message, the Mission Management Center has an enduring responsibility

to the Warfighter to maintain a state of constant vigilance and to execute prescribed emergency notification procedures pre-coordinated with the tactical user.

It's also important to understand that FFT data is part of, and exchanged with, a larger body of operational information. It is a critical Department of Defense objective that FFT systems must be integrated with Combat Identification systems, as mutually-supporting capabilities, whose common goal is the unambiguous characterization of forces within the operational environment. While FFT and Combat Identification is not the same thing, their support to military operations is inextricably linked; each employs user association data devices or displays to exchange entity disposition, characterization, and identity information. The attendant capabilities, systems, and processes must be developed to provide interoperable and integrated entity data that are exchanged within the overall SA enterprise.



The National Strategy for Cyber describes NetOps as a fundamental way to achieve cyber effects. The Joint CONOPS for Global Information Grid Network Operations (approved by Commander, U.S. Strategic Command) provides clear descriptions of the commands Network Operations mission which include the processes and personnel for collecting, processing, storing, disseminating and managing information on demand to warfighters.



The J-FFT Division is engaged in several development efforts to provide U.S. FFT data to Combat Identification capabilities within the air domain and to make U.S. and coalition FFT data available to each other.

### Alignment to the UCP Cyber and Network Operations Missions

Our J-FFT Division mission analysis concluded the FFT mission, while in many cases enabled by capabilities, is most accurately aligned with U.S. Strategic Command's cyber operations and Global Information Grid/Network Operations Unified Command Plan missions, specifically, planning, coordinating and executing cyberspace operations and directing Global Information Grid operations.

The National Strategy for Cyber describes NetOps as a fundamental way to achieve cyber effects. The Joint CONOPS for Global Information Grid Network Operations (approved by Commander, U.S. Strategic Command) provides clear descriptions of the commands Network Operations mission which include the processes and personnel for collecting, processing, storing, disseminating and managing information on demand to warfighters. The Global Information Grid includes any system, equipment, software or service that meets the criteria of transmitting information to, receiving information from, routing information among, or interchanging information among other equipment, software and services. The implication is that the Mission Management Center and its FFT data services task are

consistent with the Global Information Grid characterization and the Network Operations framework that U.S. Strategic Command employs (Space Situational Awareness, Command and Control, and Global Information Grid Enterprise/Network/Content Management).

### Summary: Integrated Teamwork Key to Mission Success

The Command's J-FFT capabilities provide substantial, and in some cases irreplaceable, Warfighter support. Nonetheless, our capabilities are only part of the larger enterprise of Situational Awareness, Command and Control and fratricide prevention. We will continue to execute U.S. Strategic Command assigned tasks day-to-day, represent U.S. Strategic Command in a variety of FFT-Combat Identification forums, work closely with U.S. Joint Forces Command and OSD to define and develop new capabilities meeting critical gaps, and transition these into the Mission Management Center's J-FFT data service capability set. Keeping our focus on those things that are operational needs and not just "good ideas" will keep our command in a respected position of support provider. Maintaining our approach of closely integrated teams across the command structure for development and operational implementation will remain our key to responsive, functional, and meaningful Warfighter support. 

#### Footnotes

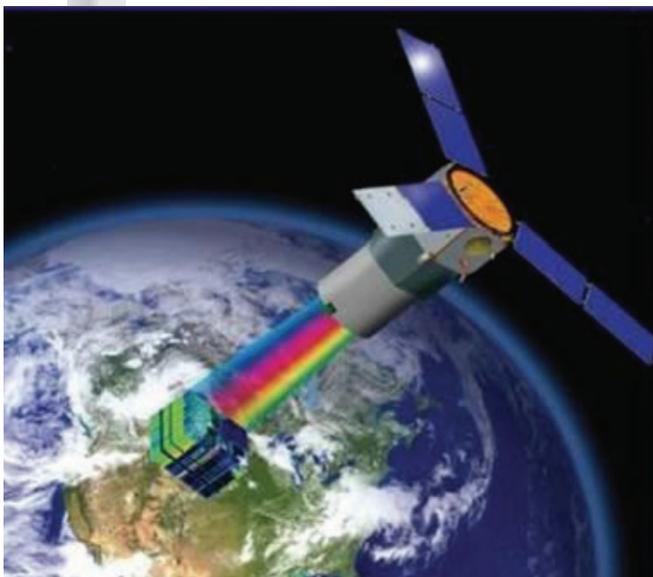
<sup>1</sup> Connectivity to commercial networks is possible, but difficult to accredit and requires approved VPN processes.

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# TACSAT-3

## Joint Military Utility Assessment

BY ALLEN KIRKHAM,  
ERIK PEREZ AND  
KENNETH KRINER



Artist's rendering of TacSat-3  
collecting hyperspectral imagery

### Combat Situation

*Tuesday morning, 9 a.m., SOUTHCOM/ARSOUTH/  
Honduras Army Counter Drug Mission Planning Cell:*

CPT Erik Perez and his Counter-Drug and Counter-Insurgency Team has intelligence information that a local drug cartel is suspected of conducting illegal narcotics production in a newly operational drug lab in the Honduras jungle in CPT Perez's area of interest. This lab is suspected of producing illegal drugs for shipment to the United States to help finance an insurgent force operating out of the Honduras jungle in his area of interest.

### **Commander's Critical Information Requirement:**

Locate and identify all operational and active drug production laboratories in the Honduras area of interest, and provide imagery products to the Honduras Army to perform counter-drug and counter-insurgency operations in the area of interest.

### **Request For Information:**

Task the TacSat-3 ARTEMIS hyperspectral sensor to image the area of interest to determine materials associated with an active drug lab vs. baseline rainforest vegetation present in the area of interest. Identify and locate camouflage, manmade blue tarps and plastics. Identify and locate live vegetation to include coca plants and marijuana. Identify and locate new areas of cut vegetation and disturbed earth.

The U.S. Army Space Operations and Military Intelligence Communities are very excited to participate in the experimentation of the TacSat-3 satellite and its Advanced Responsive Tactically Effective Military Imaging Spectrometer (ARTEMIS) hyperspectral sensor. This satellite and sensor will be the first of its kind on orbit. What is unique about TacSat-3 is that its sensor is dedicated directly to a Theater Joint Force Commander, to solve critical information requirements such as the fictional example above. The ARTEMIS sensor is designed to detect and



TacSat-3 Minotaur Launch from Wallops Island Space Flight Facility, May 19th, 2009  
Photo courtesy of NASA

locate materials that are observed when the sunlight is reflected or refracted off the material. It will find materials as opposed to military targets. It looks for material vice vegetation. It looks for more than the shape of the gun barrel pointing off the tank turret. The US military needs this capability to prevail in the illegal drug war and the Global War on Terror.

## TacSat-3 Mission and Background

The overall mission of TacSat-3 is to launch, deploy, and employ a small satellite, with an ARTEMIS hyperspectral imaging sensor. TacSat-3 is a science and technology and military utility demonstration program conducted under the umbrella of the Operational Responsive Space program. The Army is working with the Operationally Responsive Space office to lead the multi-service Joint Military Utility Assessment of TacSat-3 and its ARTEMIS sensor.

## Two Mission Modes

TacSat-3 has two primary mission modes: Tactical and Routine.

- **Tactical Mode** The primary purpose of TacSat-3 is to demonstrate a tactically responsive Space-borne hyperspectral sensor. TacSat-3 scans the selected area of interest. The data collected is called a hypercube. For a tactical collect, the hypercube is processed on board the satellite and the location and identification of material (via a spectral match filter) will be provided to the tactical user in near real time via one of two communication links; Space-Ground Link System or UHF. UHF products will include text messages (commonly referred to as a Target Cue Report), and a tactical summary message. Target Cue Reports will include the type of material detected, its location, and a score to indicate the likelihood that it is the material in question. If S-Band Space-Ground Link System is used, a geo-referenced high-resolution (approximately 1 m ground sample distance) image “chip” centered on each

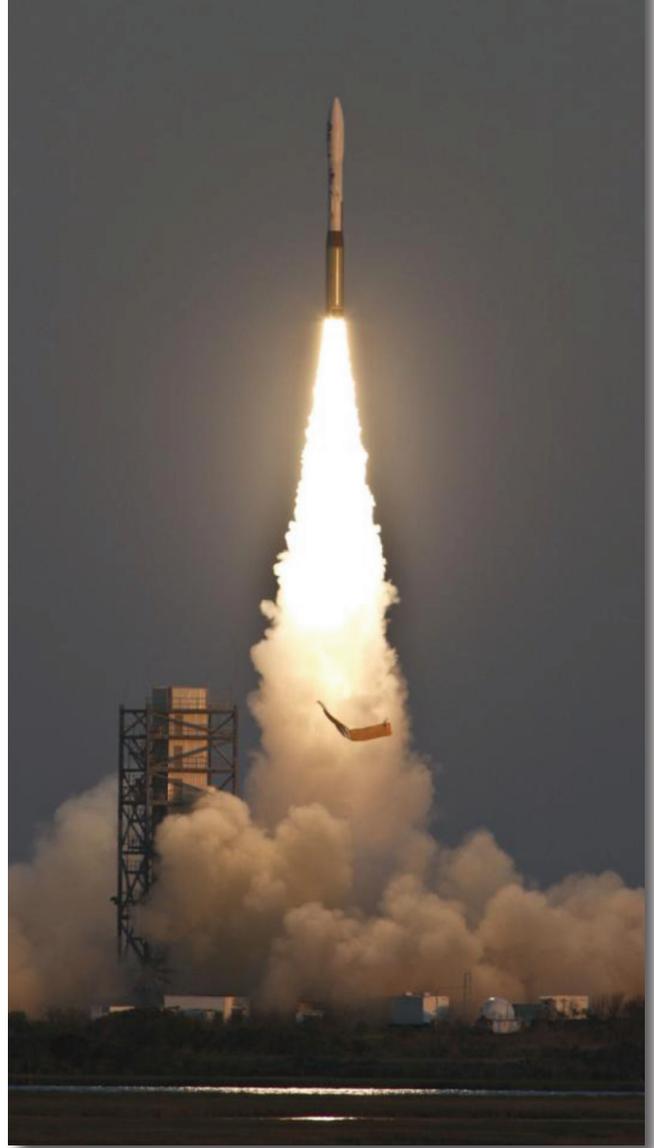
individual cue and a 3-band (selectable) hyperspectral imagery “context” image will be provided along with the text reports. Both images will be JPEG compressed. If Tactical UHF downlink, via the Navy’s Satellite Communications Payload is selected, only a text Target Cue Report message will be received. The hypercube, cue reports and tactical summaries will be stored on board for downlink to the Common Data Link high bandwidth ground station.

- **Routine Mode** During times when TacSat-3 is not committed to tactical collections or participation in exercises, it will operate in the “Routine Mode.” This gives the experiment mission partners the opportunity to task the sensor to help satisfy their internal requirements or requests from others in the community including the Combatant Commanders. The hypercube is collected and stored on the satellite. After several hypercubes are collected, they will be downloaded at a later time to the Common Data Link ground station. After calibration, the hypercube will be exploited by intelligence agencies; National Air and Space Intelligence Center, National Ground Intelligence Center, National Geospatial Intelligence Agency, Army Geospatial Intelligence National-To-Theater Nodes and Military Intelligence Brigades. Intelligence products will be provided to the customer. Other products will also be generated, especially Science and Technology products to provide technical assessments.

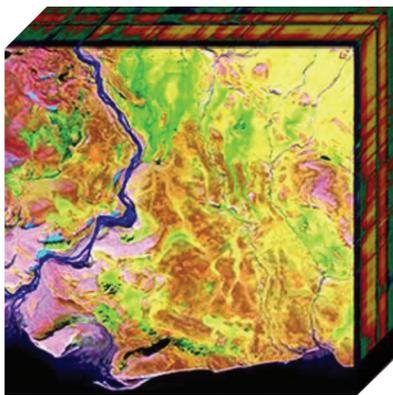
## What the Army means by “Tactical”

Tactical operations are the lowest level of combat operations when compared to operational or strategic operations. Joint Publication 3.0 Joint Operations define tactical level operations, “... focuses on planning and executing battles, engagements and activities to achieve military objectives assigned to tactical units ... a short-duration action between opposing forces.” For a clear historical, yet current, definition we can think of strate-

TacSat-3 Minotaur Launch from  
Wallops Island Space Flight  
Facility, May 19th, 2009 (*Official  
NASA Photo*)



Antenna Control Unit (ACU) Display, TGS Equipment Racks,  
and Telemetry Tracking and Control (TT&C) Light Display



Hypercube Illustration

gic operations as being GEN David Petraeus' overall plan for counter-insurgency operations within U.S. Central Command. The Operational plan would be GEN Stanley A. McChrystal plan for operations within Afghanistan. And the Tactical plan would be that executed by the commanding officer of the 24th Marine Expeditionary Unit fighting in Helmand province within Afghanistan. The key concept of the word "tactical" is low level planning and execution of combat operations by highly mobile units.

### Joint Military Utility Assessment Objective

The JMUA team will assess the feasibility of responsive satellites providing responsive intelligence, surveillance and reconnaissance information to support accomplishment of Theater Joint Force Commander missions. The established JMUA criteria, based on operational considerations, will be used to evaluate the ability of the satellite to satisfy stated objectives. As mentioned above, the primary mission of TacSat-3 is the Tactical Mode of allow a Joint Force Commander direct tasking access to the satellite sensor from the theater, onboard processing of the hyperspectral collection, and direct downlink to the Joint Force Commander before the satellite passes over the horizon.



Tactical Ground Station (TGS) at the US Army Space and Missile Defense Battle Lab in Colorado Springs, Colorado includes the trailer-mounted 10' S-Band auto-tracking antenna, the 1-meter Ku-Band SATCOM antenna, TGS Shelter, and Generator.

## The Brigade Combat Team is the focus of Tactical Mode (“the Warfighter”)

The U.S. Army Brigade Combat Team is the basic deployable maneuver unit in the U.S. Army. A brigade combat team consists of one combat arms maneuver brigade, and its attached logistical support and artillery support units. These teams are generally commanded by a Colonel (O-6), and have around 3700 Soldiers. A Brigade Combat Team carries with it support units necessary to sustain its operations separate from its parent division. This means a Brigade Combat Team can prosecute an appropriate size target all by itself without support from other combat formations. There are several flavors of Brigade Combat Teams, some are heavily focused armor such as the M1-A1 tank, some are built around reconnaissance light armor such as the STRIKER and still others are built around mechanized infantry (currently used in Iraq and Afghanistan). The one true constant with a Brigade Combat Team is that its capable of sustained traditional combat operations with minimal external support.

The above description DOES NOT marginalize the often sited individual Special Ops or other non-traditional combat units. We are only trying to clarify the “Warfighter” baseline terminology. The Space gap generally lies in the fact most Space-based National Technical Means assets are very hard to secure at the O-6 and below levels, thus the advent of the Operationally Responsive Space concept and displayed by the TacSat family of systems. Rarely, if ever, will a Space-based system support a single troop in the field yet many of our current briefings and graphics display just that idea. The “Warfighter” hyperspectral imagery requests for information for the TacSat-3 experiment Joint Military Utility Assessment will come from the Military Intelligence Brigade collection manager assigned to the Theater to support the Brigade Combat Team that requires the information.

## Joint Force Commander Critical Operational Issues

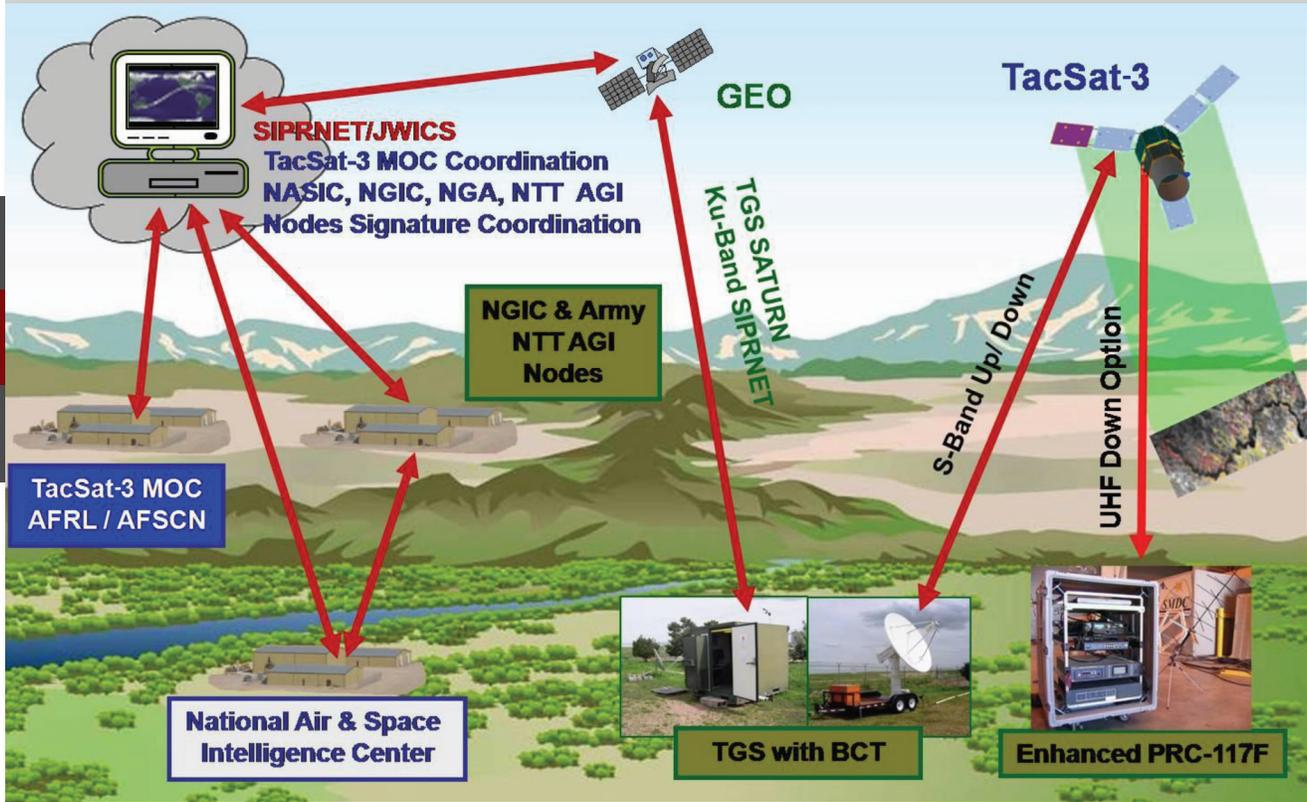
The Army TacSat Management plan assigns Space and Missile Defense Command Battle Lab in Colorado Springs as the lead agent for the Tactical mission mode Military Utility Assessment.

Appendix D of the TacSat Management Plan details the Army requirements for the TacSat-3 satellite. Air Force Research Laboratory designed the satellite to meet the needs of appendix D. SMDBL derived four Critical Operational Issues and numerous measures of effectiveness and measures of performance from this appendix:

- COI 1 Can the Joint Force Commander effectively utilize in-theater tactical tasking capability?
- COI 2 Can the Joint Force Commander receive tactical messages from TacSat-3?
- COI 3 Do the downloaded tactical messages meet the Joint Force Commander’s need for hyperspectral imagery (text file) and high-resolution imagery (chip) information?
- COI 4 Did Joint exploitation of ARTEMIS hypercube yield Service specific utility?

## How will we actually do the Joint Military Utility Assessment?

Data will be collected during selected demonstrations, experiments, exercises, and day-to-day operations after launch. Following the U.S. Air Force Research Lab’s Launch and Early Orbit testing and calibration; we will begin U.S. Army Space and Missile Defense Command/Army Forces Strategic Command’s Test Plan for tactical operations of the ARTEMIS sensor. Each testing event is composed of the end state goal and precursor events that must happen in order for the end state goal to be accomplished. Each and every time a tactical collection is made in support of USASMDC/ARSTRAT testing, the resulting hypercube will be fully processed by the USASMDC/ARSTRAT hyperspectral imagery processing experts. The tactical product will be compared with collected ground truth of known targets. Testing focuses on 1) Defeating the enemy’s efforts to hide actions or assets, 2) Detect man-made objects for seeking out tactically relevant manmade objects that are not readily apparent to other intelligence, surveillance and reconnaissance methods. Other testing events will be planned and executed as operational constraints allow.



## What potential services could TacSat-3 provide to the Brigade Combat Team and how would those services help him win the fight?

TacSat-3 has the potential to provide the combat commander text based reports that tell him where particular material types are located within his battlespace. These text based reports could be supported by images of the target in question. These reports could be delivered in a matter of hours from the time of request. If accurate, these text based reports and images could allow the commander to find enemy assets previously unseen due to camouflage.

### Joint Military Utility Assessment Baseline Scenarios:

The Space and Missile Defense Battle Lab has developed scenarios that will assess the Critical Operational Issues. The Battle Lab will collect data to determine military utility of TacSat-3. In the first step after satellite functional checkout and sensor calibration, the Space and Missile Defense Battle Lab will perform

Tactical Mode initial checkout testing with the Army's Tactical Ground Station at Fort Carson Ranges south of Colorado Springs, Colo. Data collected from TacSat-3 will be compared to ground truth and processing of the full hypercube by when available. Subjective questionnaires and surveys (qualitative data) will be used to gather Operator and Warfighter (user) feedback during and at the completion of each demonstration event. The Space and Missile Defense Battle Lab will employ a building-block approach, testing each variable individually and with success, progress to more stressing events, where multiple variables will be exercised in a single scenario. Completion of all the proposed test scenarios will give the Battle Lab and the Joint Operationally Responsive Space community an accurate picture of TacSat-3's capabilities, which can then be assessed in select military exercises. As part of test planning, the Space and Missile Defense Battle Lab will use a matrix that ties measures to each event or scenario. This matrix will be used to determine which Critical Operational Issues, are being assessed in each test event. It will also be useful in determining which Critical Operational Issues, are not being assessed so they can be built into future testing events.

...the ability to task and download a product from the field with no human processing in the loop.



TGS 10' auto-track S-Band antenna trailer-mounted.  
Allen Kirkham, Government Civilian SMDBL  
TacSat-3 JMUA Technical Lead and  
John Andrews, SMDBL TacSat-3 Tactical Ground  
Station (TGS) Operator and Technician

## Modeling & Simulation:

There is only one TacSat-3 for live experimentation. So, during the Joint Military Utility Assessment, the performance of the single TacSat-3 satellite will also be extrapolated in simulation scenarios to estimate the capabilities of an operational constellation of small, responsive satellites in various orbits.

## Concepts of Operations and Tactics, Techniques and Procedures

The Joint Military Utility Assessment will also be used to identify Concepts of Operation, Tactics, Techniques and Procedures, and technical capabilities that would allow TacSat-3 and a Space-based hyperspectral sensor to more fully meet the needed capability of the future.

## TacSat So What?

Space intelligence, surveillance and reconnaissance has been around for sometime; the new “so what” of TacSat-3 is the ability to task and download a product from the field with no human processing in the loop. The beneficial evolution of the Space-based intelligence, surveillance and reconnaissance asset to the Brigade Combat Team would be the ability to task the asset from the supported commander’s area of operations. Since tactical operations are usually thought in terms of hours, the TacSat family of systems is well suited to support this operational tempo. The fact the requested products could be delivered within hours of request and delivered directly to the commander’s tacti-

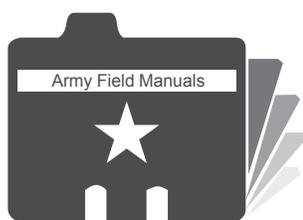
cal operations center further improves the commander’s ability to react to enemy actions. Traditional NTM assets are very ill suited to this mission set and higher levels of command typically outweigh the Brigade Combat Team commanders intelligence, surveillance and reconnaissance support request.

## Looking to the Future

Army participation in the TacSat-3 ARTEMIS hyperspectral imagery project provides the opportunity to shape future tactical satellite development to meet critical joint land force operational requirements. This opportunity includes the ability to influence the selection of mission payloads, support and refine concept, combat, and materiel development activities, and exploit “leave-behind” capabilities developed through the experiments. Critical to the Army is the ability to influence system design to ensure compatibility and integration with ground system architectures and infrastructure. Such compatibility and integration will be an essential element of the Joint Force Commander’s capability to employ combat forces effectively. 

# “HOW-TO” in Army Doctrine

BY RICH BURKS & KEN LOUDNER



Army doctrine is going through a much needed restructuring at the direction of GEN Martin E. Dempsey, Commanding General, U.S. Training and Doctrine Command. The objective of this effort is to clean up the current body of field manuals (FM), make doctrine development more timely, and the doctrine material more accessible to the user. The ultimate goal is to manage doctrine more effectively with the needs of the warfighter in mind.

There is a vast body of knowledge that currently exists on how the Army conducts operations. The restructuring effort redefines doctrinal boundaries and cleans up practices that have begun to dilute “doctrine” thereby enabling developers to move in a more responsive and positive direction. The “house-cleaning” that is ongoing includes the elimination of those manuals that are no longer needed, those that are not about operations, as well as the consolidation of many manuals, and the conversion of many FMs to Training Circulars (TCs), Technical Manuals (TMs) and a new product called the Army Tactics, Techniques and Procedures manuals (ATTP). Keeping the warfighter in mind, this effort will also place electronic manuals in the hands of the user and enable the user to make on the spot corrections (edits) based on real time operations.

## Where Doctrine is Headed

To manage FMs more effectively the number of doctrine manuals that contain the basic fundamentals is being reduced to a more convenient level to enable keeping them current within the available doctrine resources. There are two key elements to this task – reduction in the number of manuals and reduction in the size of the manuals (goal 200 pages or less). Both will make it easier to write and keep doctrine up to date. But, to achieve this, both elements need to be ruthlessly enforced. TRADOC’s goal is to reduce the number of FMs in order to focus on critical combined arms publications and to reduce the size of FMs to facilitate ease of use, ease of maintenance and clarity



GEN Martin E. Dempsey, Commanding General, U.S. Training and Doctrine Command *Photo by Pat Buffet*

10/21/2009 12:05:30 P.M.

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## Doctrine and Training Publications

FMs, MTPs, STPs, TCs & TMs (except engineering & medical).

For the Army Tactics, Techniques, and Procedures Pilot Program click [here](#).

Additional Doctrine & Training Publications can be found by Clicking [Here](#).

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Active_FM			
PubNum	IssDate	PubTitle	PDF
FM 1	6/14/2005	THE ARMY	<a href="#">PDF</a>
FM 1-0	2/21/2007	HUMAN RESOURCES SUPPORT	<a href="#">PDF</a>
FM 1-01	4/2/2008	GENERATING FORCE SUPPORT FOR OPERATIONS	<a href="#">PDF</a>
FM 1-02	9/21/2004	OPERATIONAL TERMS AND GRAPHICS	<a href="#">PDF</a>
FM 1-02.1	10/30/2007	MULTI-SERVICE BREVITY CODES	<a href="#">PDF</a>
FM 1-04	4/15/2009	LEGAL SUPPORT TO THE OPERATIONAL ARMY	<a href="#">PDF</a>
FM 1-05	4/18/2003	RELIGIOUS SUPPORT	<a href="#">PDF</a>

### ATTP WIKI

This screen can be found on AKO. The various links provide pdf versions of active field manuals.



In achieving this goal, valuable information that facilitates combat operations will not be eliminated. It just needs more effective management to make it more accessible and understandable to users, while at the same time more consistent and coherent. Each proponent school and branch discussed the implications of changing FMs to other publications such as Training Circulars (TC), Technical Manuals (TM), or the newly proposed Army TTP (ATTP) manuals. All components schools then conducted an initial mission analysis and doctrinal scrub to support TRADOC's goals. The results of doctrine literature scrub and reclassification were then presented and approved by the TRADOC Commander. They are:

- Retain as Field Manuals - 94
- Rescind outdated FMs - 91
- Transfer FMs containing technical procedures to TMs - 112
- Transfer FMs containing training material to TCs - 46
- Transfer FMs that deal with TTP and lower echelons to ATTP - 215
- Consolidated with other manuals - 65
- Proposed new starts eliminated as unnecessary - 27

## Some Considerations

Proponent schools also need to clean up practices that have begun to dilute "doctrine." This, of course, necessitates a re-evaluation of what we want doctrine to do and what constitutes doctrine. Doctrine should provide four things. 1) A common approach to the conduct of operations that facilitates understanding, creates effective use of resources, and establishes the fundamentals. 2) A common language and symbols that facilitate mutual understanding and allow precise orders with minimum communications and maximum clarity. 3) It must provide TTP that have proven effective in the past and we have a reasonable expectation will work in the future. 4) And doctrine should foster adaptability and encourage creativeness. Consistency in doctrine is desirable

only when that consistency is necessary to facilitate operations, and not as a goal in itself.

## What is a Field Manual ?

Unfortunately, the current definition (in AR 25-30) is inadequate. It is too broad, and does not clearly distinguish what should be in field manuals and what should go in other publications. With the ongoing effort to limit the number of FMs, there needs to be not only a clear definition of what an FM is, but also an explanation of what it is not. TRADOC has proposed the following definition:

*A Field Manual is* a DA publication that contains doctrine principles, with supporting common tactics, techniques, and procedures that apply across the force and describes how the Army and its organizations operate while conducting operations and training for those operations. FMs pertain to the operating force, and those parts of the generating forces that deploy with, or directly support, the operating force in the conduct of operations.

To be consistent with this new definition, doctrine therefore contains of the following four categories of information:

- Fundamentals** Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.
- Tactics** The employment of units in operations. It includes the ordered arrangement and maneuver of units in relation to each other, the terrain, the enemy, and the civilian population, in order to translate potential combat power into successful operations. Tactics are always descriptive, not prescriptive.

**C. *Techniques and Procedures*** Techniques and procedures are standard methods or detailed courses of action used by troops and/or commanders to perform assigned missions, tasks, and functions, specifically, the method of employing equipment and personnel. Techniques and procedures may be descriptive, in that, they can be modified to suit the circumstances, and their employment requires judgment. However, drills often include TTPs.

**D. *Terms and Symbols*** The specific language and graphics used to issue orders and control operations. Terms, in this context, are those words defined specifically for Army use and codified in FM 1-02. Additionally, symbols are those graphics defined specifically for military use are in FM 1-02. They provide a common language that professionals use to communicate with one another. Terms with commonly understood definitions are a major component of that language. Symbols are its graphical representation. Establishing and using words and symbols of common military meaning enhances communication among military professionals, in all environments, and makes a common understanding of doctrine possible. Terms and graphics are prescriptive as defined in FM 1-02.

To assist the doctrine developers, TRADOC will completely revise TRADOC Regulation 25-36, and portions of 25-30, 25-40 and 350-70. TRADOC also proposes rewrites to portions of AR 25-30 which is a DA publication that contains doctrine and training principles with supporting tactics, techniques, and/or procedures and describes how the Army and its organizations function in terms of missions, organizations, personnel, and equipment. Moreover, TRADOC has also provided a litany of informational guidance not only on what does and doesn't go into an FM, but also on reducing manual size, eliminating redundancy, what and how to convert, and much else. So much for the doctrine developers.... And now a real success story for the rest of the Army!

You all know how successful Wikipedia (on the Internet) has become. It's the Encyclopedia about everything that anybody can add to or edit. Well, TRADOC has embraced this concept and extended it to doctrine (or quasi-doctrine) and has taken the lion's share of converted doctrine (the ATTP manuals) and plans to put them out on the Army's new MIL-WIKI web site. Since the real nature of these manuals is designed to support lower echelon assets they primarily address the end user (the warfighter) in the field. And the end user can edit them in real time keeping the content current and on the cutting edge. The MIL-WIKI Doctrine Pilot Program has already begun. It's at: [https://wiki.kc.us.army.mil/wiki/Portal:Army\\_Doctrine](https://wiki.kc.us.army.mil/wiki/Portal:Army_Doctrine). Personnel must have an existing AKO account to access the MIL-WIKI site. The account category must be of the type authorized to access FOUO level information. All you need to do is logon to the MIL-WIKI site and type in your comments and changes.

## Bottom Line

How does this affect Space and Missile Defense doctrine? A successful agreement between TRADOC and SMDC Doctrine Chief, Mr Rich Burks was reached with a plan to restructure Space and Missile defense FMs. Since TRADOC has restricted each proponent school a very limited number of FMs, SMDC was permitted only two, one for Space and one for Missile Defense. While this successfully protected SMDC proencies it also generated some new challenges. The SMDC Doctrine Division's strategy for addressing the doctrine impacts associated with only two field manuals was to develop a restructuring plan for Space and Missile Defense doctrine that included FM consolidation and FM conversion to ATTPs.

On the Space side, the plan calls for combining FM 3-14, Space in Support of Army Operations and FM 3-14.10, Space Brigade Operations into one manual. And it requires the JTAGS manual FM 3-14.5, JTAGS Operations, to be converted to one of the new ATTP manuals. Future low-echelon manuals will also be ATTPs.

The Missile Defense plan permits continuation of the development of FM 3-27, Army Global Ballistic Missile Defense. But, in FY 10, it must be combined with FM 3-27.10 as a Change 1 to FM 3-27. Additionally, the newly proposed FM 3-27.5, AN/TPY-2 (FBM) Operations has been redesignated as an ATTP manual. Future low-echelon manuals will also be ATTPs.

## Status of SMDC Doctrine

The Future Warfare Center (FWC) Directorate of Combat Development (DCD) recently released the final draft FM 3-14, "Space in Support of Army Operations" for worldwide staffing and is currently adjudicating comments. It is the Army's primary doctrinal authority describing how Space operations serve as a critical force multiplier to combatant commanders, theater planners, and to the leadership & staff elements using products derived from Space operations. As an update to the previous edition published May 05, it now incorporates lessons learned from the Space Cadre FORMAL and SSE/ARSST deployments in OIF/OEF, and includes doctrinal revisions that synchronize the Army's Space effort with USSTRATCOM and the Joint Staff's recent revision of Joint Publication (JP) 3-14, "Space Operations", while protecting the Army's vested operational interests. And as directed by TRADOC, FM 3-14.10 it has been consolidated into FM 3-14. We anticipate final publication and posting of FM 3-14 on the AKO doctrine site by Christmas 09. As one of the first in the TRADOC MIL-WIKI Pilot Program, ATTP 3-14.5 JTAGS has been posted to the Army's MIL-WIKI site, but will also remain on the AKO doctrine site as an FM until the end of the Pilot Program.

Check it out at:  
[https://wiki.kc.us.army.mil/wiki/ATTP\\_3-14.5\\_JTAGS\\_Operations](https://wiki.kc.us.army.mil/wiki/ATTP_3-14.5_JTAGS_Operations).

Because Wikipedia, the editable encyclopedia, has been widely successful on the internet, TRADOC has chosen to extend this to doctrine with the new milWiki Web site located at [https://wiki.kc.us.army.mil/wiki/Portal:Army\\_Doctrine](https://wiki.kc.us.army.mil/wiki/Portal:Army_Doctrine).

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**Unclassified Sensitive Information**

**(USI) Portal: Army Doctrine**

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Welcome to the Army Doctrine Web

Doctrine Web is a place for milwikians to help contribute to various wiki projects on Army Doctrine. The mission of this Wiki portal is to act as a secure collaborative publishing of U.S. Army doctrine efforts. This site is available 24x7 worldwide to all U.S. military personnel with an active AKO/DKO account\* authorized to access FOUO level information. This Wiki portal Management project of the Combined Arms Center (CAC) at Fort Leavenworth. TRADOC is a program to incorporate insights from the field to ensure ATTP remain relevant through Soldier input. Publications on this Wiki are drafts and are not to be disseminated or used as official doctrine. Proponents will review and consider all input in the future official revisions of doctrine. Before publishing please review our Army Doctrine Portal Rules of Conduct. \* See Restricted Account Types.

**ATTP**  
(Mouseover for full ATTP name)

- ATTP 6-01.1
- ATTP 3-90.15
- ATTP 5-19 (100-14)
- ATTP 3-04.155

Getting Started edit

New to Wikis? Need Help?

- Army Doctrine Portal Rules of Conduct
- Use OPCS Procedures

Featured ATTP

ATTP 6-01.1 Knowledge Management

This document provides the procedures for the organization.

The Future Warfare Center (FWC) Directorate of Combat Development (DCD) began worldwide staffing the initial draft of FM 3-27. FM 3-27 is the Army's Global Ballistic Missile Defense (GBMD) Operations proponent-level manual for SMDC/ARSTRAT. It is the principle publication for describing the Army's mission in Strategic missile defense of the Homeland, deployed forces, friends, and allies from ballistic missile attack. In accordance with TRADOC's new doctrine restructure, this field manual will represent the Army's consolidated doctrine for strategic missile defense. Army GBMD functions under the Strategic Command (STRATCOM) GBMD concept. Following GEN Dempsey's direction to reduce the number of field manuals, FM 3-27.10 will be consolidated as a Change 1 to FM 3-27 in Fiscal Year 2010. Change 1 will also capture all updates in the development of GMD software and manning while protecting the Army's vested interests in Global Ballistic Missile Defense. Also, the ATTP 3-27.5 AN/TPY-2 (FBM) Operations manual posted on the MIL-WIKI site is available for staffing and comments. This ATTP manual will remain posted to the MIL-WIKI site after completion of the development process for updates by the warfighters. Check it out. ⚠

**BIOS**

Rich Burks

Rich is a retired Infantry Officer, Pilot and Foreign Area Officer. He has been the Doctrine Chief for US Army Space and Missile Defense Command and the Managing Editor of the Army Space Journal since 2003.

Ken Loudner

Ken is a military analyst and doctrine developer for U.S. Army Space and Missile Defense Command. He is a retired ADA officer that has been writing doctrine for over 15 years.

PDF PDF PDF PDF

# Fallen Soldier



His mother's request is simple: Treat the fallen Soldier's return home to Colorado from Iraq with dignity; honor him in the photographs.

The plane lands at Peterson Air Force Base in Colorado on an otherwise quiet Friday morning. The engines quit and the whine of the hydraulics become the only sound as the door slowly raises. A gentle cry breaks the silence as senior military leaders, service members and the family get the first glimpse of the flag-draped coffin in the doorway.

The coffin lowers. The Army's 4th Infantry Division honor guard sharply marches into position. The members carry the casket to the hearse and carefully position it inside. The honor guard sergeant slowly salutes. The door closes as the family sobs and the leaders pay respect. The color guard marches out of the way. The hearse slowly departs, leading the entourage of family off the base. Service members and civilians along the route slowly salute in tribute.

On Monday, the respectful silence returns as the same honor guard marches to the rear of the hearse parked near the pavilion at Fort Logan National Cemetery in Denver. The sounds of the honor guard movements echo in the crisp air as the members carry the coffin to its place. Final taps sound and three shots ring out as the gun salute joins the emotional sobs. The honor guard returns to surround the coffin. The members carefully lift and fold the flag. One member gives the flag to the Army general and the general gives it to the mother. She clings to it. The family cries. The grandmother approaches the coffin. She places her hand on the center of the wooden top. After a long tearful moment, she walks away.

The family and friends get into the black car that brought them to the cemetery. The Army general salutes as the car rolls slowly past the pavilion where the fallen Soldier remains.

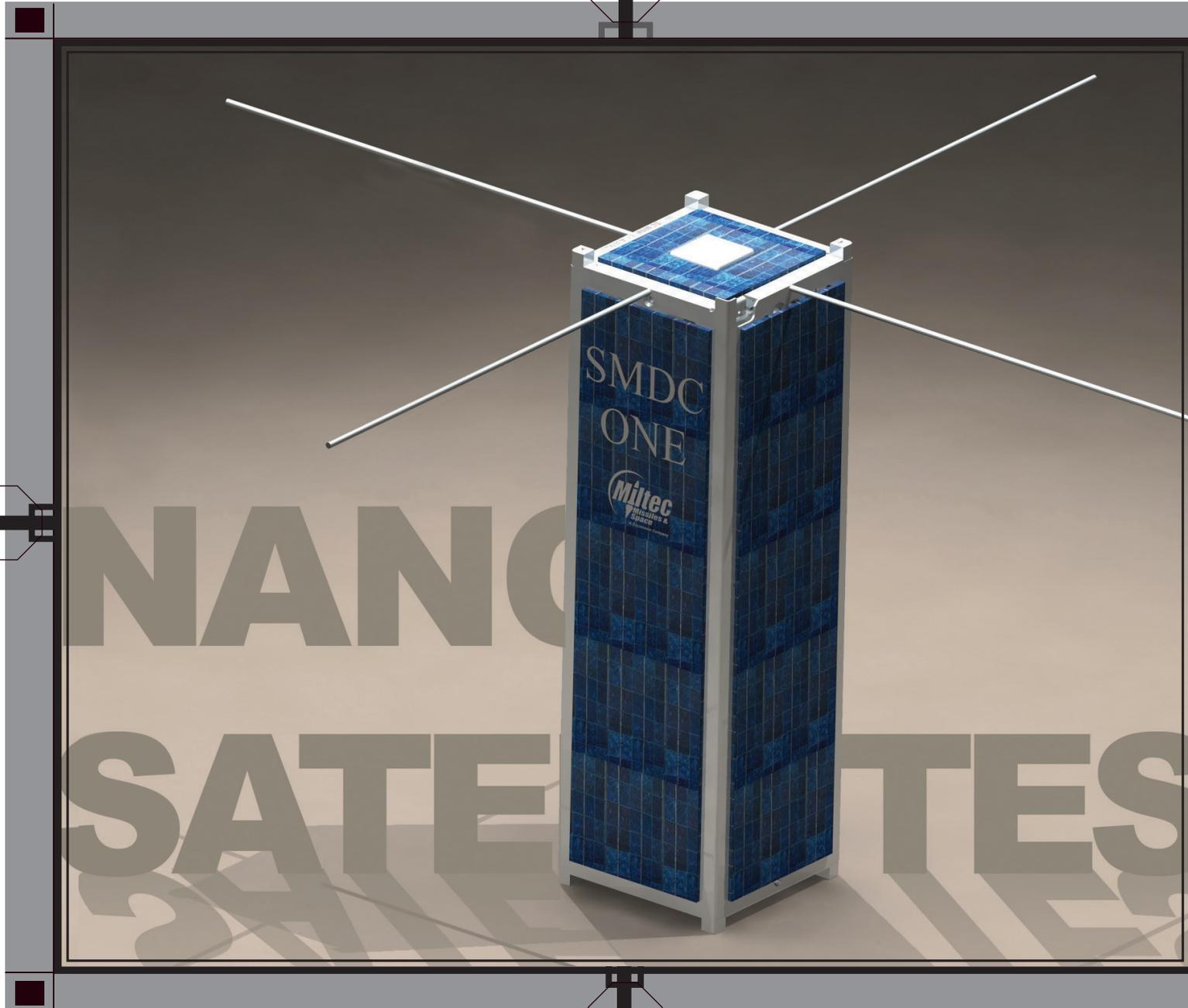
— Michael L. Howard



Photographs taken Nov. 13 and 16 at Peterson Air Force Base, Colo., and Fort Logan National Cemetery in Denver, Colo., in tribute to SPC Jonathon M. Sylvestre. Sylvestre was assigned to the 1st Battalion, 10th Field Artillery Regiment, 3rd Heavy Brigade Combat Team, 3rd Infantry Division. He was killed Nov. 2 in Kut, Iraq.



Photos by: Michael L. Howard



NANO  
SATELLITES

# SMDC-ONE

## Beyond line-of-Sight Communication

### What is it?

The U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's SMDC-ONE technology demonstration is designing and testing nanosatellites weighing as little as four-kilograms. These nanosatellites can be placed into a low Earth orbit to receive data files from a ground command and control center. The ground station for the first SMDC-ONE demonstration will be at USASMDC/ARSTRAT on Redstone Arsenal, Ala. The primary objective will be to receive data from multiple ground transmitters and relay that data to a ground station. The intent of this technology demonstration is to build a number of identical satellites and deploy them together into low Earth orbit to simulate enhanced tactical communications capability and evaluate the nanosat performance.

### What has the Army done?

On Apr. 28, 2009, eight SMDC-ONE nanosatellites will be delivered to USASMDC/ARSTRAT after a one-year contract effort. The first SMDC-ONE nanosatellite will be placed into orbit in 2009 and the remaining seven will be placed at a later date.

### What continued efforts does the Army have planned for the future?

To better meet warfighter needs, USASMDC/ARSTRAT is considering mission enabling upgrade features for future nanosatellites to include onboard Global Positioning System capability for greater onboard autonomy, addition of an S-band communications link for increased data transmission, inclusion of a software defined radio for greater transceiver frequency flexibility, and modification of the communications element (radio) to increase available volume for payloads.

### Why is this important to the Army?

To achieve enhanced capabilities for the warfighter from Space, an approach that holds great promise is the deployment of constellations of nanosat-class satellites into low Earth orbit. Because the unit cost for a nanosat is lower (less than \$1 million), large numbers for each specific mission could be built and deployed. What a nanosat may lack in performance and reliability when compared on a per-unit basis to a large traditional military satellite, it makes up by its low cost and potential for persistent presence over given theaters of operations through constellation proliferation.

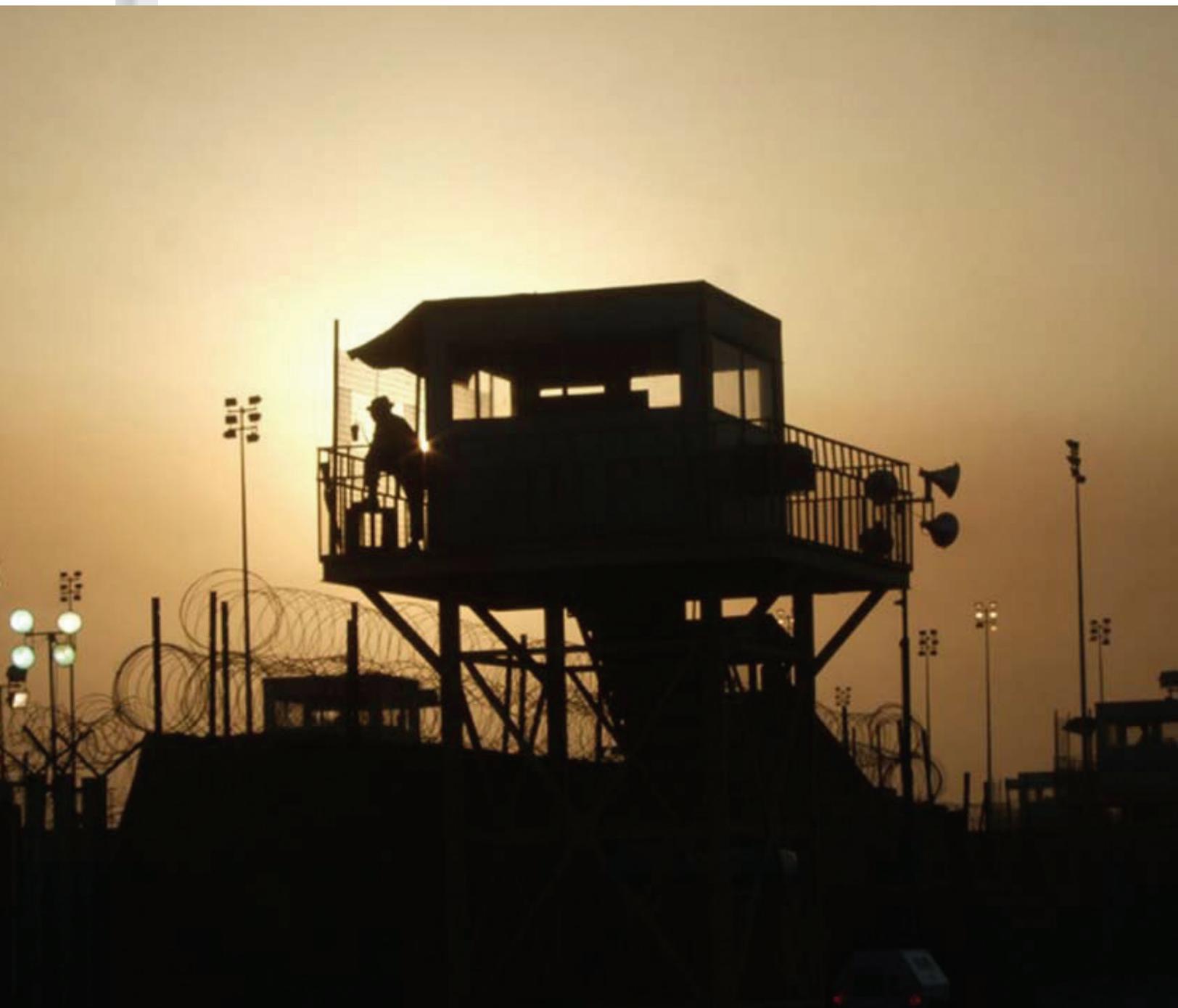
A nanosat constellation populated by inexpensive Spacecraft could be useful in humanitarian support, stability and support operations and nation building. If a satellite ceases to function, it could be rapidly reconstituted. Nanosats can provide coverage across specific regions, as well as globally. The use of nanosats in such a fashion will enable Unmanned Aerial Vehicle-like performance for communication from Space borne assets that can provide data directly into theaters of operation 

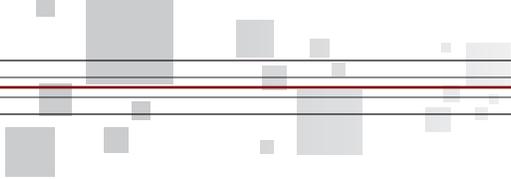
### Resources

#### USASMDC/ARSTRAT Web site

- SMDC-ONE Fact Sheet
- [www.smdc-armyforces.army.mil/ASJ](http://www.smdc-armyforces.army.mil/ASJ)

# AN IDEA AHEAD

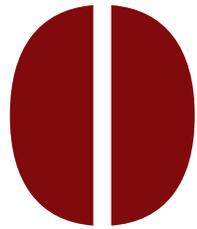




# OF ITS TIME?

## The Challenges of Space Operations in the Fires Brigades

BY MAJ JASON R. KALAINOFF



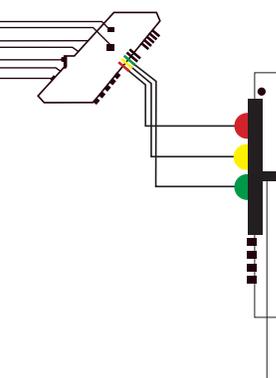
Of the many assignments that an Army Space Operations Officer can fill, a position on the staff of a Fires Brigade is unique. Aside from the 1st Space Brigade, Fires Brigades are the only brigades authorized an officer from Functional Area 40 (FA40) on their Modified Table of Organization and Equipment; all other positions for FA40s occur on the staffs of division-level units or higher. Operating as part of a brigade-level staff presents special challenges for what are typically among the most-junior Space Operations Officers. Although these positions certainly offer unique opportunities, maintaining these positions may not be in the best interest of the Army, the functional area, and the FA40s assigned to the Fires Brigades.

From August 2007 until May 2009, I served as the Brigade Space Operations Officer for the 41st Fires Brigade based at Fort Hood, Texas. During my twenty-two months there, the Brigade conducted home-station operations, pre-deployment training, and a deployment in support of Operation Iraqi Freedom. Unlike some of my fellow FA40s, I had the advantage of an immediate supervisor and Brigade Commander who were supportive of my efforts to focus predominately on Space operations. Despite this support and the greater opportunities for Space-related work that is present during a deployment, I spent very little time working on Space-related tasks. Based on my conversations with other FA40s assigned to Fires Brigades, it appears that fielding Space Operations Officers at the brigade level may be an idea that is ahead of its time.

Perhaps the greatest challenge of being a Space Operations Officer in a Fires Brigade is that the small number of field grade officers and the large number of field grade duties — reports of

survey, AR 15-6 investigations, special events planning — creates a situation that is ripe for reassigning the FA40 to non-Space tasks. Most of the majors on a brigade staff fill primary staff positions such as the S1, S2 or S3. Throughout recent history, these positions have been the backbone of the brigade staff and most commanders are hesitant to pull one of these primary staff officers away from his assigned duties to focus on other tasks. The position of Brigade Space Operations Officer does not benefit from the same historical significance. When short-term or intermediate-term requirements arise that require a field-grade officer from the brigade staff, the Space Operations Officer is an obvious choice. Using the FA40 to fill this position meets the immediate requirement while leaving the primary staff to focus on their duties. In a non-scientific sample of four FA40s who have deployed to Iraq with a Fires Brigade in the last two years, each was reassigned to a non-Space duty such as Visitor Bureau Officer in Charge, Night Battle Captain or Non-Lethal Planner. Although it is not uncommon for the Space Operations Officers at the division level to be assigned part-time additional duties that are not related to Space, the larger number of field grade officers on a division staff allows for the existence of specialists, as opposed to the greater need for multi-function officers at the brigade level. In addition, having more field grade officers on a division staff allows additional duties to be spread more thinly and more evenly across the staff.

Even with the most supportive commander, an FA40 assigned to a Fires Brigade may find that there is little Space-related work for him to do. During their Space Operations Officer Qualification Course, newly-inducted FA40s learn that they are expected to be subject matter experts in Space force enhance-



Beyond the impact on the individuals, assigning FA40s to Fires Brigades would only tie up a limited resource that might better be used elsewhere.

ment areas such as: intelligence, surveillance, and reconnaissance; position, navigation, and timing; satellite communications; blue force situational awareness; and Space control. Although Brigade Commanders generally recognize the importance of most of these areas, mechanisms already exist to ensure that brigade-level units have access to this information. Ideally, critical Space information flows from the Division Space Support Element to the division primary staff officers and from there to the brigade primary staff officers. This is the method through which Brigade Combat Teams typically gain access to Space products or information, although the actual efficiency of the method varies from unit to unit. A Space Operations Officer at the brigade level could attempt to interject himself into this system, but it is difficult to see the benefits of doing so.

Having an FA40 on the brigade staff should allow him or her to focus on the Space-based capabilities or products of specific interest to that brigade. Doctrinally, the primary task of a Fires Brigade is to conduct strike operations. To fulfill this task, the Multiple Launch Rocket System battalions in the Fires Brigades have the capability to use precision-guided munitions that are dependent on the Global Positioning System (GPS). One can certainly envision situations in which the health of the GPS constellation was at question or the position data collected by the receivers was of less-than-optimal accuracy. In cases like these, it is possible that the Brigade Commander might want his FA40 by his side, giving a final “thumbs up” before launch. In recent years, however, the GPS constellation has been maximized to the point of providing consistent, albeit far from perfect, support for the employment of Precision Guided Munitions. In addition, as the nature of the conflicts in Iraq and Afghanistan has changed, the role of the Fires Brigades has changed as well. In recent deployments it has not been uncommon for Fires Brigades to assume non-traditional missions, serving as battlespace owners or providing security along Main Supply Routes. If Fires Brigades are not being employed in their traditional roles, it should not be surprising that the FA40s assigned to those brigades experience a similar identity crisis. Although the need for brigade-level FA40s to support precision-guided munitions may increase in the future, at this point the Division Space Support Elements can adequately provide for the needs all of their subordinate brigades, including the Fires Brigades.

Given the limited need for FA40s in the Fires Brigades, assigning officers to fill these slots has notable impacts on

both the individuals involved and the Space community as a whole. For the individual FA40s, spending three years assigned to a Fires Brigade can potentially be the equivalent of spending three years working out of your Military Occupational Specialty. Since assignments at the brigade level are typically given to the most junior FA40s, this can result in the atrophy of much of what the individuals learned during the Space Operations Officer Qualification Course. Their next Space assignment then becomes their first Space assignment, potentially leaving only one additional assignment before the officer must make a decision on retirement. Fortunately, most senior officers in the functional area are very aware of these challenges. Junior FA40s frequently receive the advice that they should do their best to show their commander what Space-based assets can offer him, but in the end they should focus on doing their best on whatever task they are assigned, whether it is related to Space or not. Although this type of advice does help relieve some of the anxiety a junior Space Operations Officer might feel when tasked to work outside his functional area, it would be better to not put officers in these positions in the first place.

Beyond the impact on the individuals, assigning FA40s to Fires Brigades would only tie up a limited resource that might better be used elsewhere. With only 235 FA40s throughout the entire Army Active Component, using six of them to fill what are essentially branch immaterial positions in the Active Component Fires Brigades does not appear to be the best use of our Space cadre. There have been a number of proposals for additional FA40 billets during the last several years. Shifting the personnel authorizations from the Fires Brigades to the most promising of these proposed positions has the potential to benefit the Army as a whole at little or no cost.

There may be a time in the future where the increased dependence on Space-based assets or the instability of the Space environment may require FA40s to be assigned to not just the Fires Brigades but to the Brigade Combat Teams as well. For now, however, brigade-level requirements can be handled adequately by the Division and Corps Space Support Elements. Reassigning personnel authorization from the Fires Brigades to elsewhere in the Space community offers a potential benefit to the Army at no cost and presents greater levels of professional development for the assigned officers. 

# Defending America CYBERSPACE 2010 Symposium

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# Tip of the Sphere



## Army Space Cadre News

By Mike Connolly

Mike Connolly //// Bio



Initially commissioned as an Air Defense Officer, Mike Connolly served the majority of his 26 year career as an Army Aviator prior to being selected as a Functional Area 40 during the first Career Field Designation Board. His assignments as an FA40 included Chief of Staff, Cheyenne Mountain Operations Center; Director Command and Control Systems (J6) Cheyenne Mountain Operations Center; Command Director, Cheyenne Mountain Operations Center; Executive Assistant to the Commander, U.S. Strategic Command; Deputy, J36 (Current Operations), U.S. Space Command; Chief, Joint Space Support Team, U.S. Space Command; Chief, Standards and Evaluations Cheyenne Mountain Operations Center; and Mission Director, Cheyenne Mountain Operations Center. He is a graduate of the U.S. Army War College as well as East Tennessee State University.

(719) 554-0452;

[michael.connolly@smdc-cs.army.mil](mailto:michael.connolly@smdc-cs.army.mil)



# A “How-To” Manual for Army Space Personnel Development

Earlier this year, the two Army Regulations that provide the “How-To” for functional area proponents received major revisions. AR 5-22, The Army Force Modernization System and AR 600-3, The Army Personnel Development System, were revised. These regulations provide the framework and authorities that allow for the successful completion of our mission.

AR 5-22 identifies the Commanding General, United States Army Space and Missile Defense Command as the Army’s Force Modernization Proponent for Space and High Altitude Capabilities and assigns the associated force management responsibilities of requirement definition, force development, combat developments, doctrine developments, training developments, material developments, leadership development and educational, personnel developments, and facilities developments relative to DOTMLPF. AR 600-3 establishes the Army Personnel Development System as prescribed in AR 5-22. It is the responsibilities assigned in AR 600-3 that serve as the foundation for the activities within the organization now called the Personnel Development Office.

The Army Space Personnel Development Office (formally the FA40 Personnel Proponent Office) is directly responsible for managing the eight personnel development system life cycle management functions as they relate to FA40 Space Operations Officers. The eight functions; structure, acquisition, distribution, development, deployment, compensation, sustainment, and transition are derived from the Army’s life cycle model and follow the process from creating force structure requirements through a Soldier’s separation from active duty. Although our office has specified responsibilities associated with each function, the majority of FA40 Officers will only be affected by the development and sustainment functions.

As defined in AR 600-3, development is the process of developing people mentally, morally, and physically. This includes character and leadership development, as well as education and training. A major focus of the function is on shaping values,

attributes, skills and minimizing dysfunctional behavior. As such, development makes a significant contribution to the promotion of the Army’s culture. In support of this function, some of the requirements assigned to the Personnel Development Office include:

- Ensuring job analysis within the functional area is conducted to identify required knowledge, skills, abilities and behavior by grade;
- Reviewing and providing recommendations for Army Education Requirements System and Training With Industry positions;
- Identifying civilian education and training opportunities;
- Ensuring that training for career development is in concert with all aspects of professional development;
- Conducting analysis of training and educational requirements against assigned priorities;
- Linking professional development to leader development across all three levels of leadership (direct, senior and strategic).

AR 600-3 describes sustainment as the manner in which the Army attends to the well-being of its people. It includes programs directed specifically at the quality of life and the well-being of Soldiers, Civilians, Retirees and their Families. It prepares Soldiers for the rigor of military operations and Family separation, and encourages them to remain in the Army as a means of sustaining the force. A few of the requirements assigned to the Personnel Development Office in support of this function are:

- Establishing and maintaining communications with members;
- Representing the professional interest of members;
- Fostering positive attitudes toward personnel systems and programs.

Understanding and executing the tasks assigned to the Army Space Personnel Development Office in AR 600-3 provides us with the “How-To” of supporting the Army’s Space community. All Army Space professionals and enablers, have our commitment to meet all of these requirements and to continue to mature the Army Space community. Many of the programs we are using to accomplish this commitment are outlined in the remainder of this section.

# Tapping into Space

## A How-To Manual

As I contemplated the theme for this edition of the Army Space Journal, *Tapping into Space: A How-To Manual* and how to relate it to the development of Army Space Professionals and Enablers, I initially came up empty. But, by considering who will be doing the “Tapping,” and more than likely explaining the “How-To,” it quickly became clear that it is the Space Professional and Enablers, and our challenge is to appropriately prepare them. In previous editions of this column, I have highlighted initiatives that the Army Space Personnel Development Office is taking to mature Functional Area 40s (FA40) and Space Enablers. I would like to take this opportunity to let you know of some successes.

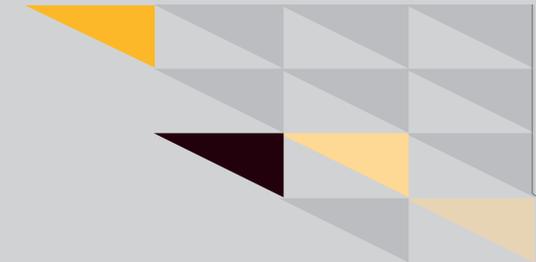
- **FA40 4-Year Career Field Designation:** Currently, an officer can only request to be designated as an FA40 at the seven year point of their career. Although this practice has provided sufficient numbers of officers to meet Army requirements, it has led to some Captain billets remaining empty or being filled with Majors. We took the initiative to request through the Department of the Army authorization for officers to be considered during the 4-Year Career Field Designation process. On Sept. 2, 2009, the Department of Army/G1 approved our request effective with the 2010 Career Field Designation boards. The officers who now choose to select FA40 as their Career Field Designation at the 4-year point of their career

will fill Modified Table of Organization and Element billets within the 1st Space Brigade, gaining valuable operational experience while building a solid foundation from which to expand their Space related career.

- **FA40 PhD Program:** In conjunction with Human Resources Command, the Army Space Personnel Development Office conducted a board to select officers to pursue their PhD through the Army’s Advanced Civil Schooling Program. Three FA40s were selected and will begin the education with the 2010 fall term. They are LTC Mike McKay, MAJ Cory Gerving and MAJ Stephen Murphy. These officers will complete their 3-year course of study to include a dissertation approved by the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command Senior Leadership, followed by closely managed utilization tours. This education option for FA40s will ensure that the Army Space Community is well situated to meet the growing demands of capability development and Space-based mission support requirements. Although the three officers selected this year chose to pursue mostly hard science programs that is not a requirement for consideration.
- **Additional Skill Identifier/Skill Identifier 3Y:** Effective July 1, 2009 enlisted Soldiers and Warrant Officers can be awarded the Additional Skill Identifier/Skill Identifier 3Y. Additionally, the identifier was renamed to Space Enabler and the Army Space Personnel Development Office was designated as the proponent. If you are a Soldier or Warrant officer interested in obtaining a 3Y designation, information on the requirements and who to contact is located on the FA40 Army Knowledge Online Web site.



- **Civilian Space Enabler coding:** We were able to support the development of a Space Cadre Modernization Memo that directed U.S. Army Force Management Support Agency to code appropriate civilian billets as Space Enabler positions effective Fiscal Year 2011. This action will contribute to the tracking of Space enablers.
- **Space Fundamentals/Space 200/300 Management:** The FA40 Personnel Development Office recently assumed the responsibility of managing the Army's allocations for the Space Fundamentals Course and Space 200. We had previously managed only the Space 300 slots. The Space 200 slots are for individuals who are not attending Space 200 in conjunction with the Space Operations Officer Qualification Course and are open to military and civilians alike. Additionally, the Army's allocation of Space 300 slots has increased from 12 annually to 18. These courses are open to members of the Army Space Cadre, both civilian and military, not only FA40s. Although we now include civilian Space cadre members on the standing Space 300 Order of Merit List, successful completion of Space 200 is a prerequisite. If you need one of the courses, give us a call.



FA40s 4-year | FA40 PhD | New Skill Identifier | CSE Coding

| Space Fundamentals/ Space 200 / 300 Management

## We need your Help!

FA40s, if your organization is talking about wanting to add FA40 authorizations, or you hear talk about FA40 authorizations being recoded to another specialty, please call or e-mail Al Hughes in the FA40 Army Space Personnel Development Office so we can get involved to either assist the unit in gaining FA40 billets, or try to keep the billets we have.

Al can be reached at (719) 554-0453 or [alan.hughes@smdc-cs.army.mil](mailto:alan.hughes@smdc-cs.army.mil)

## Special Recognition

Congratulations to each of the Officers listed below:

Selected as Astronaut Candidate  
**LTC Mark Vande Hei**

Senior Service College Selection  
**LTC Bob Guerriero**  
**LTC Tori Miralda**

Selected as 1st Space  
Brigade Commander  
**COL Eric Henderson**

Selected For Advanced Civil  
Schooling for their PhD Degree  
**LTC Mike McKay**  
**MAJ Corey Gerving**  
**MAJ Stephen Murphy**

Selected For Advanced Civil  
Schooling for their PhD Degree  
**LTC Pete Wirth**

# Revisions made to Army Regulations

## AR 5-22 and AR 600-3

Earlier this year, the two Army Regulations that provide the “How-To” for functional area proponents were revised. These regulations (AR 5-22, The Army Force Modernization System and AR 600-3, The Army Personnel Development System) provide the framework and authorities that allow for the successful completion of our mission.

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The Army Space Personnel Development Office (formally the FA40 Personnel Proponent Office) is directly responsible for managing the eight personnel development system life cycle management functions as they relate to FA40 Space Operations Officers. The eight functions – Structure, Acquisition, Distribution, Development, Deployment, Compensation, Sustainment, and Transition – are derived from the Army’s life cycle model and follow the process from creating force structure requirements through to a Soldier’s separation from Active Duty. Although our office has specified responsibilities associated with each function, the majority of FA40 Officers will only be affected by the Development and Sustainment functions.

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- Representing the professional interest of members
- Fostering positive attitudes toward personnel systems and programs

Understanding and executing the tasks assigned to the Army Space Personnel Development Office in AR 600-3 provides us with the “How-To” of supporting the Army’s Space community. It is our duty and commitment to meet all of these requirements in order to continue maturing the FA40 career field and the officers, enlisted Soldiers and Civilians identified as Space Professionals and Enablers.

## Accessions

Congratulations and welcome to the new FA40s listed below:

- MAJ Ronald Hinkle
- CPT Anthony Gelormine
- CPT Todd Letellier
- CPT Kenneth Rich
- CPT Derek Bothern
- MAJ Stephen Parrish
- MAJ Diana Loucks
- CPT Matthew Kasky
- CPT Rob Gleghorn

## Promotions

Congratulations to the FA40s listed below on their promotions:

**2009** COL Jim Meisinger  
**Jun.**

**2009** LTC Chris Crawford  
**Jul.** LTC Ken Klock

**2009** LTC Brian Soldon  
**Aug.** LTC Michael York

**2009** LTC Paul Fritz  
**Sep.** MAJ Thomas Amodeo  
MAJ Ken Nickerson

**2009** LTC Timothy Tubergen  
**Oct.** MAJ Kaysteine Briggs  
MAJ Jason Needler  
MAJ Ian Sein

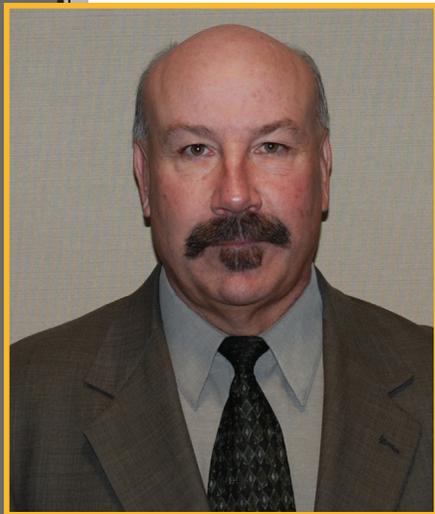


# Tip of the Sphere

## Training Insights

By Larry Mize

Larry Mize /// Bio



Larry Mize graduated from Xavier University with a Bachelor of Science in Mathematics in 1973. He entered active service in the United States Navy serving a career specializing in Naval Intelligence, Aircraft Carrier Operations, Naval Special Warfare (SEALs), and Space Operations. He attended French language training at the Defense Language Institute and subsequently served as the U.S. Navy Liaison Officer to the Commander French Forces Indian Ocean/French Foreign Legion/Commandos Marine in Djibouti. He attended Naval Postgraduate School and was awarded a Master of Science in Space Systems in 1986, subsequently serving at U.S. Space Command and U.S. Strategic Command. Mize is currently Chief of Space and Ground-based Midcourse Defense Education Training.

(719) 554-4545;  
larry.mize@smdc-cs.army.mil





# USASMDC FWC DCD an “Institution of Excellence”



LTG Kevin Campbell, commanding general, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command presented the official Certificate of Accreditation signed by GEN Martin Dempsey, commanding general, U.S. Training and Doctrine Command, to COL Bruce Smith, Future Warfare Center, Directorate of Combat Development on Oct. 22. The ceremony was conducted in the same DCD classroom where FA40 Space Operations Officer Qualification Courses are conducted. During the ceremony, LTG Campbell acknowledged the monumental achievement and thanked all the DCD training professionals recognizing that it took a lot of personal and professional pride to earn this distinction. The 2009 Summer Edition, Vol. 8, No. 2, of the Army Space Journal detailed the U.S. Training and Doctrine Command accreditation process, quality assurance standards and DCD preparations that culminated in the Institution of Excellence designation.



Larry Mize and Deb Harvey

## A Successful Partnership

Future Warfare Center, Directorate of Combat Development is equally proud when its contractor team receives due recognition for their contributions to mission success and strength in our partnership. Recently, Randy Cash, from the Computer Sciences Corporation headquarters office in Huntsville, Ala., visited Colorado Springs, Colo. Along with FWC DCD, Larry Mize, Chief of Training, Cash recognized three Computer Sciences Corporation employees.

Deb Harvey and Jim Traverse received Letters of Appreciation for their dedication and professionalism that contributed to FWC DCD successfully passing U.S. Training and Doctrine Command’s accreditation inspection and receiving designation as an Institution of Excellence.

Clem Morris was recognized with Computer Sciences Corporation’s New Employee of the Quarter Award for outstanding customer service for his support to FWC DCD training. Chris Berisford, AN/TPY-2 (FBM) course manager presented the award.



Chris Berisford and Clem Morris

## 2009 Army Space Operations Officer Qualification Course (SOOQC) Graduates

Congratulations to the fifty-two U.S. Army Space Professionals and Enablers and one U.S. Marine Corps Space Officer who successfully completed their 10-weeks of in depth Space education and training.

Courses for 2010 are scheduled

- SOOQC 10-01: June 7 – Aug. 13, 2010
- SOOQC 10-02: Sept. 8 – Nov. 10, 2010

### Space Operations Officer Qualification Course /// 09-01



FRONT TO BACK: Row 1 - CPT Ian P. Sein, CPT Rodney H. Gomez, BG Kurt S. Story, MAJ William E. Symolon, CPT James T. Edwards Jr., MAJ Brian C. Bolio, CPT Thomas M. Amodeo, and LTC Charles G. Simpson; Row 2 - LTC Joseph E. Touchet, MAJ Yaqui M. Oselen, 1LT Kent B. Gneiting, MAJ Linda K. Lewis, CPT Adam L. Brink, CPT Randolph W. Leach, CPT James Adams, CPT Brian D. Slosman and MAJ David M. Briggs; Row 3 - LTC Elizabeth L. Yarbrough, MAJ Siegfried J. Ullrich, MAJ Bryan G. Juntunen, CPT Gregory E. Hotaling, MAJ Gregory K. Sharpe, CPT Kaysteine J. Briggs, MAJ Brian D. Casburn, CPT Christopher R. Dziados and CPT Zachary J. Conly.

### Space Operations Officer Qualification Course /// 09-02



Row 1 (left to right): CPT Kai J. Thompson, 1LT Steven B. Dunlap, BG Kurt S. Story, CPT Luis A. Quintana, CPT Lara J. Suarez, CPT Stephen J. Cameron, CPT Leah G. Roberts. Row 2: CPT David F. Keithan, MAJ Christopher J. Ortiona, MAJ Stephen M. Parrish, CPT Amy K. Sitze, MAJ Noel B. Barber, CPT Bret H. Bellizio, CPT Terry L. Davis. Row 3: SSG Kevin J. Hardy, MAJ David R. Sonnek, CPT David M. Sturgis, 1LT Ryan A. Berry, MAJ Scott J. Hartman, MAJ Ronald T. Hinkle. Row 4: CPT Matthew J. Cannon, 1LT Rebecca L. Durbin, 2LT Yolanda T. Rife, CPT Michael B. Palmgreen. Row 5: MAJ Glen D. Blackburn, MAJ Jason I. Needler, MAJ Anthony J. Newman, MAJ Craig W. Cox, MAJ Jeffrey L. Meeker.



## JTAGS Class 09-06 Graduates

By Greg Hatfield, JTAGS IQT Course Manager

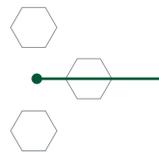
The first hurdle any Soldier being assigned to a Joint Tactical Ground Station Detachment must overcome is the JTAGS-Initial Qualification Training. The JTAGS-IQT is designed to provide Soldiers with the tools they will need to perform their critical missile early warning mission. After completing seven weeks of intense training, class 09-06 demonstrated they were up to the challenge by earning an impressive class average of 95.47 percent. Academic excellence cannot be achieved by the student's efforts alone, it also requires a team of dedicated professionals

to coach, teach, and mentor them. The Cadre for the JTAGS-IQT work continually to ensure the students are well trained and the course training materials are current. The instructors are handpicked by the command and have current operational experience, which ensures the training is relevant, realistic, and meets the needs of the warfighter. The number one priority of the team is to ensure Soldiers are trained and sent to the forward sites with the knowledge and skills required to perform their mission as JTAGS operators.

### JTAGS Class Graduates //// Class 09-06



FROM LEFT TO RIGHT SPC Seamus Lynch (JTAGS-Germany); SGT Chad Raudebaugh (JTAGS-Japan); SSG Jason Pitre (JTAGS-Korea); SGT Robert Hixenbaugh (JTAGS-Japan); SGT Sean Carrier (JTAGS-Germany); CPT Brad Townsend (JTAGS-CENTCOM); SGT Matthew Bernat (JTAGS-Germany)



### JTAGS Training Staff

SGT Clayton Ratliff; Gregory Hatfield; SFC Todd Avery; CW3 Jeffrey Sprague; David Futti; Keese Pond; SGT Jesse Jacka

# Tip of the Sphere

## Career Management

By MAJ Ed Anderson

MAJ Anderson //// Bio



Commissioned as a Field Artillery Officer, MAJ Ed Anderson is currently serving as the FA40 Career Manager. His assignments have included Deputy Commander, Missile Warning Center, Cheyenne Mountain Operations Center; Chief, Missile Defense Integration, CMOC; and Space Control Planner, 1st Space Brigade. He is a graduate of the Interservice Space Intelligence Operations Course, Ground-based Missile Defense Operators Course, Space Operations Officer Qualification Course, and Space 300.

(703) 325-0748

DSN 221-0748;

[edwardg.anderson@smdc-cs.army.mil](mailto:edwardg.anderson@smdc-cs.army.mil)





MAJ Anderson //// Preping\_Your\_Files

## Getting Ready for Boards

A number of boards are coming upon us quickly. Recommend you start preparing your file for the board now. The Human Resources Command FA40 Web site has tools to assist you. Reoccurring problem areas include:

- Current physical (i.e. PULHES)
- eMILPO Tour Data
- DA Photo

## Attention: Upcoming Changes

- **ORBs** FA40s will begin to see changes to their Officer Record Briefs over the next few months. Due to recent changes in how the Army tracks its Space Cadre, I'll be removing the 3Y Skill Identifier from the Officer Record Briefs of FA40s. The Army Space Cadre consists of Space Professionals (FA40s) and Space Enablers (personnel with the 3Y Skill Identifier). The Army G1 approved the expansion of the 3Y Skill Identifier to Warrant Officers and Enlisted Soldiers and renamed it Space Enablers. As such, an FA40 with the 3Y Skill Identifier is redundant and the decision has been made to remove it.
- **OSMPP** On Nov. 2, 2009, Human Resources Command established an Officer Service Management Pilot Program. The four and seven year Functional Designation boards will remain the primary route for accessing officers into functional areas. The Officer Service Management Pilot Program changes the functional transfer process. Beginning February 2010, Human Resources Command will convene quarterly panels to balance CPTs and MAJs across all branches/functional areas. The goal is to allow officers to adjust their service paths based on Army requirements. Details of this program are described in MILPER Message 09-243 and on the Human Resources Command FA40 Web site. Since every FA40 is a potential recruiter for the career field, it's important that you are familiar with these changes so that you can better advise officers interested in becoming an FA40.

## Important Dates :

- WED 17** Fiscal Year 2010 LTC Board (Year Group 94/95)  
Convenes Feb. 17, 2010. Anticipate the MILPER Message release November 2009 and My Board File to open mid December 2009.
- TUE 30** Fiscal Year 2010 SSC Board (LTC)  
Convenes March 30, 2010. Anticipate the MILPER Message release January 2010 and My Board File to open February 2010.
- TUE 8** Fiscal Year 2010 COL Board (Year Group 89/90)  
Convenes June 8, 2010 (one month earlier than past boards). Anticipate the MILPER Message release February 2010 and My Board File to open April 2010.

# Got Space?

[www.smdc-armyforces.army.mil/ASJ](http://www.smdc-armyforces.army.mil/ASJ)  
e-mail: [spacejournal@us.army.mil](mailto:spacejournal@us.army.mil)  
twitter: <http://twitter.com/theASJeditor>  
blog: <http://armyspacejournal.blogspot.com>



# ... I like smoke and lightning Heavy metal thunder Racin' with the wind ... Born to be wild

Words and music by Mars Bonfire

opportunity to learn from one another. New riders are encouraged to learn from riders with more experience and vice versa. Every motorcycle rider learns from each other regardless the level of experience.

"We discuss hand and arm signals provided by the Motorcycle Safety Foundation, basic motorcycle etiquette, and then launch a group motorcycle ride to a designated location."

Once they arrive at their destination Manalo says the group conducts after action reviews, discuss observations from the ride, re-emphasize motorcycle etiquette and finishes with a safe ride back to the unit.

A native of the Philippines, Manalo has been riding since he was 14 and currently has 23 years under his belt.

As for one of the Army Space Soldiers who has joined the program SGT Brandon K. LaForce, says, "I think these last few rides have been great"

"I feel that it helps build camaraderie in the unit and it helps new riders to feel more comfortable with their limited experience."

"Sometimes as a veteran rider I think you tend to get complacent with your surroundings, and the safety classes that we conduct before these rides are a reminder for you to continue to ride defensively."

A current owner of a Yamaha YZF600 sport bike, LaForce has been riding for about eight years.

"In my opinion, you learn something new every time you ride. Until this program started I hadn't done much riding in large groups and I think that I have learned to do it safely."

Manalo, the brigade's HHC 'Top', assumes the position as he races in the wind



Peterson, left, and Levy, center, pull out on their sport bikes while Hartwig brings up the rear with something more classic



“I started this program this year when I identified how many riders we had in SMDC and no program was present,” said CSM William C. Baker, 1st Space Battalion, and owner of two Bigdog choppers. Baker, who has over 35 years of riding experience, began the program at the battalion level, but recognized the need to move it to the brigade.

“Normally we have approximately 65 participants show up. It all depends on mission requirements. We have also worked with the Fort Carson Motorcycle Mentorship program and feed off each other for support – two separate programs, but we help each other. The brigade motorcycle mentorship program allows the command to place focus on motorcycle safety.”

But the program is not just about getting together and jumping on a bike heading for the open spaces. There is a lot more to it with leaders in the battalion and the brigade taking responsibility. “At the company level leaders keep track of who the motorcycle riders are,” says 1SG Anthony H. Manalo, first sergeant, HHC, 1st Space Brigade.

“Leaders also conduct safety inspections of the motorcycle riders at each safety event and verify endorsements required by law. These include the policies and regulations govern by the Army. In addition, they emphasize and strictly enforce the use of proper protective equipment/clothing and Department of Transportation approved equipment. All motorcycle riders are required to attend a Motorcycle Safety Course whether it is the basic or the experienced rider skills training course.”

Manalo, who rides a Harley Heritage Softail Classic, states, “We conduct group rides to give young and new riders the

Owner of both a 2007 Yamaha Road Star cruiser and a 2002 Yamaha R1 sport bike, Hartwig emphasized, “We have been fortunate to only have had minor accidents involving Army Space Soldiers in the Colorado Springs area. I don’t want it to be just dumb luck that is keeping us alive and in the fight. Motorcycling is a dangerous, but extremely fun lifestyle and should receive specific attention in order to ensure the safety of our Soldiers.”

“To this end the SMDC Colorado Springs Motorcycle Mentorship Program was created. As part of the program, which includes monthly meetings and training sessions, several ‘rides’ are slated during the year to let Army Space Soldiers watch, learn, and gain experience.

“The most recent even took place back on September 25 when a few Army Space Soldiers and a civilian guest took a bike ride entitled appropriately ‘In The Wind.’

“The journey was suppose to take a route from Peterson Air Force Base to Sedalia, Colo, with a lunch stop in Castle Rock, Colo, and then return back to base. Unfortunately weather conditions were chancy and the route was switched to Limon, Colo, a shorter journey.

Prior to the sojourn participants viewed a motorcycle safety video, had their respective cycles inspected, and were paired up with appropriate mentors before taking to the highway.

“This was the third in a series for the year. Two previous rides took place all on Fridays – the first was back on May 8 which journeyed to Canon City, Colo, and returned to Peterson, the second took place on June 12 via Cripple Creek and ending at Turkey Creek Ranch just outside of Fort Carson, Colo, for the annual USASMDC/ARSTRAT Operations organizational picnic.

“... The brigade motorcycle mentorship program allows the command to place focus on motorcycle safety.”

CSM Cody Baker,  
1st Space Battalion



# ARMY SPACE ANGELS

## Practice Safe Riding Skills



Story and Photos By  
DJ Montoya,  
1st Space Brigade

“Get your motor runnin’,  
Head out on the highway,  
Lookin’ for adventure,  
And whatever comes our way...”

PETERSON AIR FORCE BASE, Colo. – These are the lyrics to classic rock song “Born to Be Wild” performed by “Steppenwolf” back in 1968. They come to mind when one envisions themselves on the back of a motorcycle cruising down the open highway in one of those “biker” movies be it Marlon Brando in “The Wild One” from 1953, Dennis Hopper’s 1969 classic “Easy Rider” or Tim Allen and John Travolta in the 2007 “Wild Hogs.”

The same can be said for U.S. Army Space and Missile Defense Command/Army Forces Strategic Command Soldiers, however this sense of freedom in the wind can come with a heavy price.

According to 1SG Benjamin J. Hartwig, first sergeant, Headquarters and Headquarters Company, 1st Space Battalion, “The number of Soldiers riding motorcycles began to rise drastically in 2004 when they began to return from 12 and 15 month deployments.”

“There were 22 motorcycle related fatalities that year and continued to rise until fiscal year 2008 when we had 51 fatalities. Last year in fiscal year 2009 there were 31 motorcycles related fatalities.”

SMDC/ARSTRAT Angels with their bikes  
(left to right): Jeffrey Major, civilian guest  
rider: SGT Brandon LaForce, HHC, SMDC/  
ARSTRAT; SS Kristina Levy, HHC, 1st Space  
Brigade; 1SG Benjamin Hartwig, HHC, 1st  
Space Battalion; SFC Jamey Peterson, 4th  
Space Company, 1st Space Battalion; 1SG  
Anthony Manalo, HHC, 1st Space Brigade;  
and CSM William Baker, 1st Space Battalion.

Competitors were also required to fire the M4 rifle, the basic weapon of today's Warrior, at a set number of targets under timed conditions during day and night operations.

After an exhausting week for the competitors, the final day arrived. Another early morning after little sleep began with the mystery event. This event was designed to see how well the Warriors could think on their feet while under physical and mental stress.

Soldiers dealt with emergency trauma, hostage rescue, uniform inspection, a humvee rollover and a combatives tournament to finish the competition.

Today's Soldiers must be versed in a variety of Warrior tasks outside of their primary military occupational skill. "Out of the 24 competitors, there were 19 different occupational specialties that were represented," said Sergeant Major of the Army Kenneth O. Preston. Haskins and Parsons both represented USASMDC/ARSTRAT with true class, courage and integrity throughout the week.

Haskins gave credit to her sponsor SSG Derrick Gibson. "I couldn't have done it as well without my sponsor and mentor Staff Sergeant Gibson. Most things I learned about being a good noncommissioned officer, I learned from him. He really helped me out when I needed it and prepared me very well for the competition."

At the end of the weeklong competition, SFC Aaron Beckman, U.S. Army Europe, was named the 2009 Department of the Army Noncommissioned Officer of the Year, and SPC Clancy Henderson from U.S. Army Forces Command won the 2009 Army Soldier of the Year.

"What I want to say about all the Warriors is that I am very, very proud of all of them," said Preston. "They are all winners. Now when they go back, I want them to be the subject matter experts in their units and organizations and pass all the things that they have learned on to the Soldiers who work for them."

Haskins, the only female Noncommissioned Officer competitor, said, "I decided to participate because [USA]SMDC has never won the competition before, and I thought I would give it my best try to be the first.

"I enjoyed showing that I knew how to do all the skills and tasks required of me and proving that I can do anything any other Soldier can do," she said.

The week began with the Command Sergeants Major Board appearance. The Warriors were expected to have command of their appearance and knowledge of the Army. Each competitor faced the board individually and was required to answer a variety of questions related to the Army.

The following day included distribution of equipment and safety briefings. Warriors had an opportunity to check over their equipment and make sure they had everything they needed for the week. Haskins found the issued equipment to be one of the most challenging parts of the competition.

"The gear that I was given was too large for me and therefore very heavy," she said. "My challenge was supporting all that weight for 14-hour days if not longer. It was very challenging, but I was able to do it."

Early the next morning, the competition kicked off with an Army Physical Fitness Test consisting of sit-ups, pushups and a two-mile run. Both Haskins and Parsons did exceptionally well on this portion of the competition.

The APFT was followed by a written exam. Later, the competitors gathered for the daytime urban orienteering course. The Soldiers were required to navigate on foot to various points of Fort Lee and were faced with resolving scenarios such as hostage situations. That evening, they completed the nighttime urban orienteering course.

Day four consisted of Warrior tasks, battle drills and range qualifications. The competitors were required to work through battlefield scenarios including: Individual Conduct and the Laws of War; Combat First Aid and Unexploded Ordnance.



Competitors march to their next event during the 2009 Department of the Army Best Warrior Competition at Fort Lee, Va.

## SGT PARSONS

**Unit:** Echo Company, 53rd Signal Battalion, Okinawa, Japan  
**Job:** 255 – Satellite Network Controller  
**Education:** 32 semester hours – University of Maryland  
 University College – Asia  
**Hometown:** Columbia, S.C.

**Unit:** 4th Space Company, Peterson Air Force Base, Colo.  
**Job:** 355 – Signals Analyst  
**Education:** Associate's Degree in Liberal Arts – Community College Allegheny County; pursuing Bachelor's Degree in Criminology – Colorado State University.  
**Hometown:** Howards Grove, Wis.

## SGT HASKINS



SGT Sarah Haskins



SGT Travis Parsons



A member of the Fort Lee team (center) directs competitors to a laptop for instructions on their next event. Photos by Dottie White, USASMDC/ARSTRAT

# BRING THEIR BEST TO DA

By Dottie White, USASMDC/ARSTRAT

FORT LEE, Va. – Two of U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's Warriors were among 24 who competed in the Department of the Army's Best Warrior Competition here Sept. 28 through Oct. 3.

The event, in its eighth year, pitted top noncommissioned officers and Soldiers from 12 commands against each other in the quest for the titles of Department of the Army Noncommissioned Officer and Soldier of the Year. SGT Sarah Haskins, a Signals Analyst with 4th Space Company, 1st Space Battalion out of Peterson Air Force Base, Colo., represented USASMDC/ARSTRAT as Noncommissioned Officer of the Year.

SGT Travis Parsons, a Satellite Network Controller from Echo Company, 53rd Signal Battalion in Okinawa, Japan, competed as the command's Soldier of the Year.

# PAST TO PRESENT

## WWII Marine Vets meet with Command Soldiers

By Sharon L. Hartman, USASMDC/ARSTRAT

PETERSON AIR FORCE BASE, Colo. — World War II members of Marine Fixed Wing Squadrons VMF/VMA-124 and VMF-155 enjoyed the company of U.S. Army Space and Missile Defense Command/Army Forces Strategic Command Soldiers during a luncheon on Friday. The luncheon, followed by command briefings and a short tour of Peterson Air Force Base's Building Three, served as part of the VMF/VMA-124 and VMF-155 annual reunion, conducted this year in Colorado Springs, Colo. The Marines in attendance were part of the squadrons which fought in the Pacific during WW II — both among the first to be based off aircraft carriers. VMA 124 has since become a Marine Reserve Squadron based out of the Naval Air Station in Memphis, Tenn. VMF-155 was deactivated on Oct. 15, 1945, shortly after the end of hostilities with Japan.

A Marine member of VMF/VMA-124/155 shares a story with MAJ Stephen Parrish of the 1st Space Brigade. The visiting members of the WWII squadrons spent part of their annual reunion at U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's Building Three where they had lunch with Soldiers from the command and were given a command brief and short tour of the building. Photo By Sharon L. Hartman, USASMDC/ARSTRAT



MG (ret) Bob Hollingsworth (front), USMC, facilitated the visit from the WWII Marine Squadron veterans. Hollingsworth directs attention to an unseen piece of art during a brief tour given by Peter Stauffer (far right) of the G6. Photo By Michael Kahl, USASMDC/ARSTRAT

U.S. Army Astronaut, COL Timothy Kopra speaks via videoconference to Chief of Staff of the Army, GEN George W. Casey.

# KOPRA in Space



Members of U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's Army Space Support Team 4 are providing Space Support to the

# ARSST 4 in the field

Warfighters on the ground.



Sixteen Ground-based Midcourse Defense system operators stand together before their graduation ceremony August 28. They are the newest 16 out of only 209 total graduates.



SSG Duane Ostrowski, 49th Missile Defense Battalion, receives his diploma after graduating from the Ground-based Midcourse Defense Operating Training Program August 28. To graduate from this course students must achieve a 90 percent or higher overall score.



2LT Rhett T. Kelly, 49th Missile Defense Battalion, receives the Army Achievement Medal from LTC Mark Krzeczowski, 100th Missile Defense Brigade Executive Officer, for accomplishing Honor Graduate status from the Ground-based Midcourse Defense Operators Course August 28. Kelly achieved a 99 percent overall score throughout the course.



1LT Mariano Barajas (Distinguished Honor Graduate), 2LT Rhett Kelly (Honor Graduate), 1LT Javier Barrera, SGT William Carey, LTC Mark Emmer, MAJ John Ferko, SSG Derrick Holmes, 1LT Michael Long, Mr. Donald Messmer Jr., SSG Duane Ostrowski, SGT Norman D. Perkins III, SSG Amy Rodriguez, CPT William Shanahan Jr., SFC Russell Smart III, CPL Scott Stone, 1LT Michael Tatz.

# 100th Missile Defense Brigade RECEIVES NEW DEFENDERS

By SGT Michael Cost  
100th Missile Defense  
Brigade (GMD)

List of Graduates:

Hussain's secret police. According to Tad's father Ned, "It was an extremely dangerous situation almost daily and yet he returned to Minnesota with all the men in his unit still alive."

He deployed to Basra Iraq in April 2009. In addition to his Space operations duties, Hervas, also a Military Intelligence officer, served as the G2 Current Operations Chief for the Division Operations Center throughout his most recent deployment. This time he saw progress in Iraq, and was proud that the Soldiers of the Red Bull Division were helping rebuild the country. Just days before his death, Hervas returned to Iraq from his two-week mid tour leave, where he spent time in Minnesota visiting family and friends and time in the river, trout fishing with one of his brothers.

Hervas was known for his smile, sense of humor, and the ability to make anyone laugh. According to his dad, Tad would "offer the shirt off his back and expect nothing in return." He was well respected as an officer by his Soldiers for his ability to put his rank aside and relate to all Soldiers at all levels. It was his honor to serve in the Armed Forces to protect his country and secure our freedoms. Tad's passions were family, friends, cooking, making others happy, sports, his dogs and standing in a river fly fishing. He always said "it's never a bad day when you're on the river."

On his final journey home, Hervas arrived in Minneapolis on Oct. 14, to a hero's welcome accompanied by the Patriot Guards. He was laid to rest, in his dress blues, on Oct. 17, at the Fort Snelling National Cemetery, perched above the tranquil banks of the Mississippi River, not far from the home he grew up in, in Minneapolis, Minn.

A well decorated officer, Hervas received the Bronze Star medal, as well as the Air Medal, Air Force Commendation Medal, Air Force Achievement Medal, National Defense Service Medal, Southwest Asia Service Medal, Global War on Terrorism Service Medal, Armed Forces Reserve Medal with "M" Device, the Combat Action Badge and the Iraq Campaign Medal.

Hervas is survived by his grandmothers Bertha Melby and Clara Hervas, his loving parents Ned and Barb Hervas, five siblings, nieces and nephews and his beloved dog. Hervas will be missed, but never forgotten.

34th Infantry Division's headquarters in Rosemont, Minn., helping them prepare and train for their upcoming combat deployment. He served as one of two Army Space Operations Officers in the Army's first National Guard Space Support Element.

Hervas is fondly remembered by his Space Operations Officer Qualification Course classmates. "[He was] the weekly football pool 'guru' that made sure everyone who participated on a weekly basis had their picks turned in. A very outgoing, vibrant and energetic person who absolutely loved being a Space Officer," said MAJ Todd Leitenschuh, Army Space Operations Officer and classmate.

"I remember Tad. He was quiet and a good man. I cannot believe he's gone. [Tad] really sad and a huge loss. He was so nice," recalls MAJ Jennifer Adams-Buckhouse, another Army Space Operations Officer and classmate.

Hervas was born Jan. 16, 1961, in Wisconsin and grew up in a small suburb of Minneapolis in a family of six children. During high school, as a senior and quarterback of the Coon Rapids High School Cardinals football team, he led his team to state finals in 1979. After high school he attended the University of Minnesota in Duluth during which time he earned his commission through the Air Force Reserve Officer Training Corps program.

He entered the Air Force right after college graduation. As an Air Force officer, then, Lieutenant Hervas served as a navigator for KC-135 air-refueling "tanker" planes. On his thirtieth birthday, Jan. 16, 1991, as Operation Desert Storm started, he was navigating one of his tankers high above the skies near Baghdad refueling Air Force fighters as the first day of the air campaign against Iraqi military forces began. After Desert Storm and after his initial service obligation was completed, he returned to civilian life working for a home renovation business.

After Sept. 11, Hervas returned to the military, this time with the Army. As an Army captain, he deployed to Iraq for the second time as the Battery Commander of Echo Battery, 216th Air Defense Artillery, a unit of the "Red Bull" Division. During this deployment, then CPT Hervas and his Soldiers patrolled a volatile 12-square-mile section south of Baghdad which included a critical oil refinery, earning him a Bronze Star. During this deployment his battery captured a key member of one of Saddam



## MAJ Tad Hervas

Coon Rapids, Minn.  
Deputy Space Support Element Chief  
34th ("Red Bull") Infantry Division  
Minnesota Army National Guard

# FROM BLUE, TO GREEN, TO GOD

An Army Space  
Operations Officer's  
Service and  
Ultimate Sacrifice

By Larry Mize and Bill Coffey,  
FWC DCD Training



The military Space community was deeply saddened by the untimely news that one of their own, an Army Space Professional, paid the ultimate price defending the nation.

MAJ Tad T. Hervas, 48, an Army Space Operations Officer, from Coon Rapids, Minn., died Oct. 6, 2009, of injuries sustained from a non-combat related incident at Contingency Operating Base in Basra, Iraq, while on his third wartime tour of duty. During his most recent combat tour, Hervas was assigned as the Deputy Space Support Element Chief with additional duty in direct support of G2 of the 34th ("Red Bull") Infantry Division (Minnesota Army National Guard). The 34th Infantry Division is currently serving as the United States Division – South which provides command and control of a 16,000 member multinational and Iraqi security force in nine of Iraq's eighteen provinces (an area roughly the size of his home state).

Hervas is the first Army Space Operations Officer killed in theater. He began his Space Operations career when he attended the Space Operations Officer Qualification Course in late 2007. In 2008, Hervas began working as a full time Guardsman with the



FROM LEFT TO RIGHT SFC Richard DeBlizan, Systems Integrator, 49th Missile Defense Battalion, SMA Kenneth Preston, and CSM Bradford Quigley, 49th Missile Defense Battalion Command Sergeant Major, watch as Missile Defenders from the 49th Missile Defense Battalion conduct training on the Ground-based Midcourse Defense Systems Trainer (GST). The simulation runs on the GST are designed to challenge the operators with a plethora of scenarios they may encounter during an engagement of an incoming threat missile.



SMA Kenneth Preston speaks with SGT Murray Harrison, Communications Operator Echo Crew, 49th Missile Defense Battalion, about his responsibilities in the defense of the nation from limited intercontinental ballistic missile threats. SMA Preston made his first visit to the Missile Defense Complex on July 7th during his tour of Army installations in Alaska.

SMA Kenneth Preston watches as SGT Michael Freeman, Military Police Officer, 49th Missile Defense Battalion, illustrates the complexities of the security systems used by military police officers in securing and defending the Missile Defense Complex at Fort Greely, Alaska.



# SMA VISITS 49TH MISSILE DEFENSE BATTALION

Photos by SGT Jack W. Carlson III,  
49th Missile Defense Battalion

every Soldier in this brigade to realize that they are still Soldiers ... whether your battle is fought with a pen, keyboard or a missile, you still have to realize that there is a fight going on out there so it's important to keep up on your tasks and drills."

Normally, AWT is held at each platoon's perspective training area with an occasional training day outside of the classroom throughout the year for the 100th. This is changing to a more hands-on approach for the brigade as more of these training exercises are being planned for the future.

"We'll gradually increase the focus more on actually being in the field and getting our boots dirty," said Rhodes. "We'll do land navigation among other situational training in a field environment throughout the year which will lead to a crowning event in the fourth quarter — a rigorous Situational Training Exercise."

"Overall, this was a very positive first step in bringing this unit to a very battle focused mind-set," Rhodes said.

The 100th Missile Defense Brigade is an ever-changing unit that is constantly undergoing the stresses of spiral development. They are on the forefront of some of the most advanced technology any Army unit has seen to date, which makes it easy to lose focus on basic Soldier skills. Training events like this and the prospect of expanding training in the future will ensure these Soldiers won't have blinders on their eyes if the time ever comes that they need to go downrange and utilize it in a combat zone.

see these basic Soldier skills incorporated in training as this was very beneficial for Soldiers and leaders alike," Knight said.

After lunch, the Soldiers of the 100th moved to their next station which was a paintball course intended to train them on battle drills. The Colorado Army National Guard Recruiting Command supplied the mobile paintball course for the Soldiers, which included inflatable barriers, paintball guns, CO2 cartridges, a seemingly endless amount of paintballs, and safety equipment.

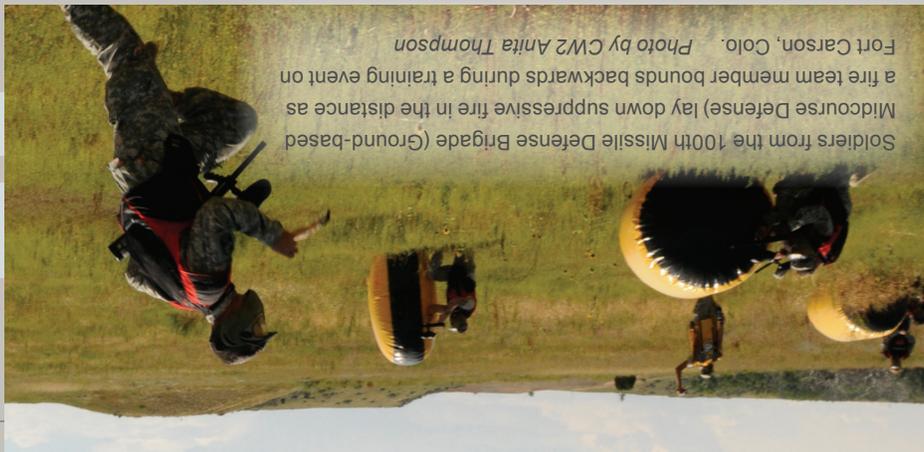
Although it sounds like fun and games, putting such equipment in the hands of trained Soldiers led to displaying a plethora of different tactics, techniques and procedures that made this a beyond the "run of the mill" game of paintball.

"It allowed us to react to contact, do 3 to 5 second buddy rushes, lay down suppressive fire ... but most of all we got to shoot each other in the face and laugh about it at the end of the day," said SGT Joseph Ten Eyck, Local Area Network Manager.

"There were complaints of welts and bruises the following Monday morning, but when you can realistically train like that and everyone goes home safely at the end, that makes the training all the more worthwhile," said Ten Eyck.

All kidding aside, this was the first time the 100th MDB got together as a whole in this type of forum and the senior leadership stressed the need for such training.

"There is a lot of importance to this training," said CSM Joseph Rhodes, 100th Missile Defense Brigade (GMD). "I want



Soldiers from the 100th Missile Defense Brigade (Ground-based Midcourse Defense) lay down suppressive fire in the distance as a fire team member bounds backwards during a training event on Fort Carson, Colo. Photo by CW2 Anita Thompson



Soldiers from the 100th Missile Defense Brigade (Ground-based Midcourse Defense) take cover behind inflatable obstacles during react to contact training using paintballs on Fort Carson, Colo. Photo by CW2 Anita Thompson

# 1st Space Company Builds STRONG BONDS

By Chaplain (MAJ) Kevin Pies and MAJ Eric Little,  
Former Commander, 1st Space Company (1TAGS)



LEFT TO RIGHT, SFC Wilfredo Cabili, SFC Charles L. Robinson III and SFC Kenneth Kamrowski of Alpha Detachment, 1st Space Company (1TAGS-Europe) laid a wreath at the Normandy National Military Cemetery.

PETERSON AIR FORCE BASE, Colo. — Soldiers and Family members know what it means to sacrifice. With the frequent moves and missions in the Army, they know what it means to pack up and leave. They know what it means for a spouse to “go to the field” or deploy for an extended period of time. They know full well what it means to separate and sacrifice.

Undoubtedly, Soldiers and their relationships are taking a beating. So the Army is now putting back into families what the demands are taking out of them.

The Strong Bonds program is a Congress supported program and provides funds to the Army to help Soldiers build stronger relationships. There are specialized programs for married and single Soldiers. There are also programs to help those Soldiers who will soon deploy, are deployed or will redeploy.

According to the Strong Bonds Web site at [www.strongbonds.org](http://www.strongbonds.org), the program “empowers Soldiers and their loved ones with relationship-building skills and connects them to community health and support resources. It is a holistic, preventive program committed to the restoration and preservation of Army families, even those near crisis. The program is initiated and led by the Army Chaplains. More than 90 percent of those who have attended the program rate it positively.”

The program typically involves an overnight off site retreat at a four or five-star facility with an excursion built in. There are also seminar-based class instruction with childcare often provided for couples so that they can focus their attention on the curriculum offered. The curriculum is selected from just some of the following topics: Laugh Your Way to a Better Marriage, How to Avoid Marrying a JERK, Marriage: Lasting Intimacy Through Nurturing, Knowledge and Skill (LINKS), Survival Skills for Healthy Families by Family Wellness, Seven Habits of Highly Effective Army Families, Couples Communication and Eight Habits of Highly Successful Marriages

Another benefit of the Strong Bonds program is that units have statistically reported that they not only bond with their loved ones but they begin to bond with other Army families, chaplains and the Army community as a whole. This in turn builds a strong unit cohesion and esprit de corps and the support system builds. And the enjoyment of serving in this demanding military can actually be a joy rather than a chore.

Over the last year, events have occurred in Colorado, Alaska, Germany, Korea and Japan. More events are planned for the coming year at various global locations. Contact your unit chaplain or chaplain assistant for information about future events.

Alpha Detachment, 1st Space Company (JTAGS-Europe) stands in front of the Belleau Wood memorial near Paris, France. The memorial commemorates a WWI Battle between U.S., British and French allied forces against Germany.



Photos courtesy Maj Eric Little and Chaplain (MAJ) Kevin Pies

### ALPHA Detachment Experience

CAEN, France — Command Chaplain (MAJ) Kevin Pies led Strong Bonds training for 20 Officers, Warrant Officers, Noncommissioned Officers and Soldiers with Alpha Detachment, 1st Space Company (JTAGS-Europe) in late August. The training was conducted Aug. 20-24 at the Holiday Inn Conference Center in Caen, France. The location of the training event gave the attendees some memorable places to visit as well. Highlights included Normandy Beach, Normandy National Military Cemetery, the Normandy American Cemetery, the Belleau Wood Memorial and the 1st Infantry Division Memorial. SFC Charles L. Robinson III, who previously deployed to Iraq with the 1st Infantry Division before being assigned to Alpha Detachment, 1st Space Company, was promoted on Normandy Beach in front of the 1st Infantry Division Memorial. Robinson, along with SFC Wilfredo Cabili and SPC Kenneth Kamrowski, reverently laid a wreath at the Normandy National Military Cemetery.

SFC Charles L. Robinson III gives his promotion speech on Normandy Beach in front of the 1st Infantry Division memorial. Robinson deployed to Iraq with the 1st Infantry Division before being assigned to Alpha Detachment, 1st Space Company (JTAGS-Europe).



CSM (ret.) Dwight Anderson provides a history lesson to the Soldiers of Alpha Detachment, 1st Space Company (JTAGS-Europe) at the Normandy American Cemetery.



# SHARPENS ARMY WARRIOR SKILLS

100th Missile Defense Brigade

## in Team Building, Leadership, and Training

By SGT Michael Cost  
100th Missile Defense  
Brigade (GMD)

FORT CARSON, Colo. — Although no tents were pitched or shower points constructed, the 100th Missile Defense Brigade (Ground-based Midcourse Defense) went to minimum manning on their city-saving consoles to conduct an Army Warrior Training exercise here August 22.

Ten tasks were completed, giving these missile defenders and staff members a chance to re-familiarize themselves with Soldier tasks not frequently practiced in such a unit. The Engagement Skills Trainer 2000 provided a focal point, enabling training on weapons seldom seen by crew members or staff.

The Engagement Skills Trainer (EST) 2000 provides initial and sustainment marksmanship training, static unit collective gunnery and tactical training, and shoot/don't shoot training. It supports the following three modes of training: marksmanship, squad/fire team collective and judgmental use of force. The system models 11 small arms and is deployable with its own system shelter. All EST 2000 training scenarios are U.S. Army Training and Doctrine Command (TRADOC) validated.

"It was an excellent opportunity for the Soldiers to work as a cohesive team rather than being segregated to their perspective sections," said SSG Andrew Knight, Intelligence Analyst, 100th Missile Defense Brigade (GMD).

"It is a rare opportunity that National Guardsmen can train on expensive and dangerous crew served weapons ... the EST 2000 allowed us to familiarize ourselves as well as work through scenarios we otherwise would not be able to experience without substantial cost and resources to the unit," said Knight.

"This exercise, although not all encompassing, paved the way for more tactical training downrange. In the future, we hope to

Soldiers from the 100th Missile Defense

Brigade (Ground-based Midcourse Defense) utilize the Engagement Skills Trainer 2000

for weapons familiarization on Fort Carson, Colo. The EST 2000 works by connecting

air hoses driven by a compressor and laser beams to simulate bullet trajectory and can

simulate dozens of different scenarios in virtual combat. Photo by SGT Joseph Ten Eyck



COL Jeffrey Farnsworth, commander of the 1st Space Brigade, leads his troops past crowds shouting "Thank You for your service," as they make their way through the intersection of Tejon Street and Colorado Avenue.



COL Jeffrey Farnsworth, and where the brigade will fall in with Brigade Commander, 1st Space Brigade's S3, discuss the route of the parade, Signal Battalion, along with SGM Marcus Campbell, from ABOVE: From left to right, CSM Timothy Czuba, 53rd



Headquarters Company guidon during Saturday's parade. ARSTRAT's Legal Office, takes her place in formation preparing to carry the brigade's Headquarters and PFC Dayna M. Croft, from the USASMDC/





# Red, White and Brave

Story and Photos By DJ Montoya, 1st Space Brigade

SGT Bertha M. Bell, supply Noncommissioned Officer in Charge, 1st Space Brigade, remarked, "I was one of several individuals leading cadence."

"I started with the brigade moving forward and did two songs hoping that others would have an opportunity to take their turn." She was excited about marching but sort of disappointed that it was over all too soon.

A crowd estimated at 40,000 came out and saluted America's warriors. More than 150 Soldiers from the brigade's three battalions — 1st Space Battalion, 53rd Signal Battalion, and 117th Space Battalion (Colorado Army National Guard) — proudly marched along with troops from Fort Carson, Peterson Air Force Base, Schriever Air Force Base and the Air Force Academy.

As members of the brigade marched past the reviewing stand on Pike's Peak Avenue and Tejon, an announcer for the parade told the crowd, "The Army's only Space Brigade has over 1,000 active, Army Reserve, and Colorado Guardsmen stationed at nine locations in the U.S., Europe, Korea and Japan."

COLORADO SPRINGS, Colo. — Soldiers from the 1st Space Brigade, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, marched in the Red White and Brave Welcome Home Parade in downtown Colorado Springs, Colo., on Aug. 29.

The brigade was one of 68 units ranging from local high school bands to historic military vehicles, from Military Vehicle Collectors of Colorado to members of the military recently returning from active duty in Iraq. These units were seen along Tejon Street beginning from St. Vrain Street all the way south to Vermijo Avenue.

SFC Nicholas J. Farrand, with USASAMDC's Legal Office, was in charge of making sure those individuals from the brigade who were scheduled to march were in place prior to their journey down Tejon Street.

"I checked them off the roster and made sure that everything was in place on their uniforms — no loose threads," said Farrand.

"I would have liked to have joined them but I was on profile," he said disappointedly.

However Farrand supported his fellow Space Soldiers by watching them in the parade and capturing a few digital snaps during this historic occasion.

“She made some samples and she said to her fellows students in her group, ‘watch this.’ She made it like I had shown her. I want you (refer- ring to her fellow classmates) to make three more and that is going to be our bridge deck. I’m going to make something else.”

“She is a born leader,” said Farnsworth. “As for the Bulldogs their assignment contin- ued with a consensus being reached in each group on which final bridge design would be utilized in an overall competition during Community Night at the school on Oct. 19.

With the command still involved in the project, 100th Missile Defense Brigade (GMD) Commander, Col. Greg Bowen and Executive Officer, Maj. Kyle Zablocki served as judges for the competition.

“Being a guest judge for the bridge com- petition was heartwarming; the kids really put a lot of effort into their work. It was a valu- able learning experience for them also, both in terms of the importance of math and science, as well as the symbolism of building bridges between people. It was a very enjoyable evening for me, and the kids had a great time,” said Col. Greg Bowen, commander 100th Missile Defense Brigade (GMD).

“This experience is definitive proof the partnership between the Galileo School of Math and Science and the command is a success story. Not only has a bridge been built between the military and the community, but this particular experience has produced a bridge that has far reaching effects around the globe.

Kelly, a volunteer with the school since March, was easily sought out by the Bulldogs as they followed their objectives of categorizing the various types of bridges: suspension, beam and arch.

Wise to the subject matter he would come back with, “That would be an arch bridge wouldn’t it?” to “Okay you guys. I’ll come back and check on you later.”

After over an hour of hands-on with the Bulldogs the Army Space Soldiers had to return to their real world mission – providing Space-based capabilities to the warfighter.

In a mini after action report walking down the school’s hallways Kelly remarked, “The last team you were working with sir, are a pretty sharp group.”

Farnsworth agreed. Kelly went on to say that one girl in particular seemed to stand out during the exercise utilizing the straws and tape.



Ning.com is a social network- ing site much like Facebook. This site is helping the Galileo school build relationships with students in Afghanistan.



Galileo School of Math and Science 6th Grade scholar Kaylee (center) blogs her counterpart in Afghanistan through Ning.com. Photo by Stacy Brisben



“I believe we must interact more closely with the population and focus on operations that bring stability, while shielding them from insurgent violence, corruption and coercion.”

GEN Stanley A. McChrystal,  
Commander, U.S. Forces – Afghanistan/International  
Security Assistance Force – Afghanistan



Photo by Navy Petty Officer 1st Class Chad J. McNeeley

The Bulldogs were tasked as part of their Science class to erect miniature bridges, each one out of 20 clear plastic drinking straws, one meter of masking tape, two stacks of books (or wood blocks), and a yardstick. Here is where Army Space Soldiers entered into the picture. On the afternoon of Oct. 15, Soldiers from the command offered their expertise to assist in the bridge building effort.

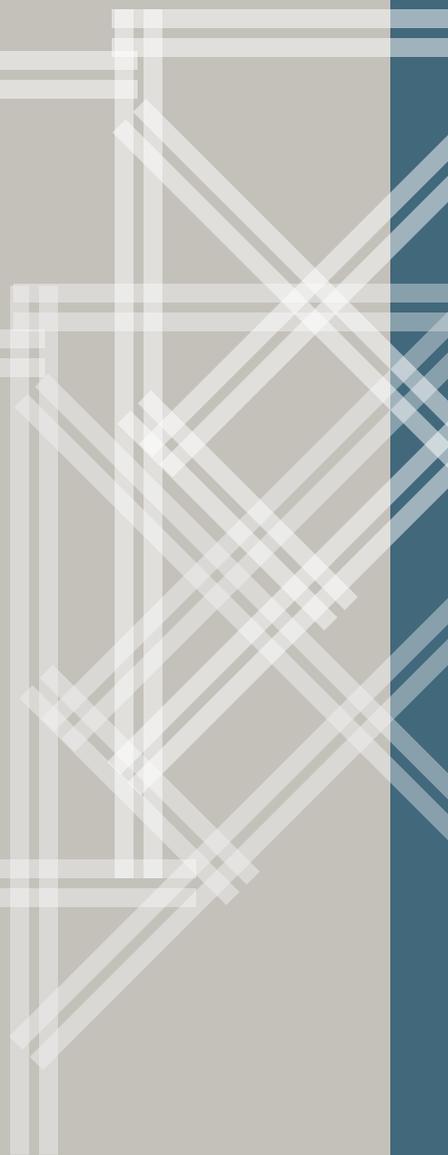
“The way we fit into the bridge building is [the students] are corresponding with children in Afghanistan,” said 1st Space Brigade’s Capt. Gary Kelly. “The Army is building bridges in Afghan villages. So as the kids build these bridges here with us, they are blogging [with] the Afghan children [about] bridges being built in their community. So they call it bridging the gap.”

Hamilton explained the students logged on as a class to [w.w.r.n.i.n.g.c.o.m](http://w.w.r.n.i.n.g.c.o.m). “This is a social networking site similar to Facebook. However, it is highly monitored and membership must be approved by the owners. Students from Jalalabad had a group already set up. I joined, spoke with the director of the school, and we decided to get our students to connect. I set up a sub-group called Cultural Bridges. We have kept it friendly and mainly discuss what students do with free time, what their schools look like, how they perceive the elders ... topics that are safe and friendly.”

Much of this falls in line with recent comments from Gen. Stanley A. McChrystal, commander, U.S. Forces – Afghanistan/International Security Assistance Force – Afghanistan. In his

Commander’s Initial Assessment to Secretary of Defense Robert M. Gates, McChrystal recommended a “change in the operational culture to connect with the people [of Afghanistan].” “I believe we must interact more closely with the population and focus on operations that bring stability, while shielding them from insurgent violence, corruption and coercion.”

The efforts of the Bulldogs only prove that we can all assist in bridging the gap between the two very different cultures. Col. Jeffrey Farnsworth, commander of the 1st Space Brigade went along with Kelly to aid some 60 students in the bridge building project. Questions from Farnsworth came precise and orderly: “So, how do you build a suspension bridge? Can I use this drawing paper and you show me how you are going to make it? Where is the buttress? Where is it going to sit? How will that work? Is it holding up the base?”



# USASMDC/ARSTRAT BUILDING BRIDGES

By Sharon L. Hartman USASMDC/ARSTRAT and  
DJ Montoya, 1st Space Brigade

COLORADO SPRINGS, Colo. – Over the past eight months, Soldiers from both the 100th Missile Defense Brigade (GMD) and the 1st Space Brigade have volunteered their time, skills, and knowledge to the future scientists and mathematicians of Galileo School of Math and Science. The association is part of a joint venture between Colorado Springs School District 11 and U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's Operational hub here. The partnership has been in effect since March of this year, and has been an effort to build a bridge between the local military and the community. Little did the students realize this year they would also be bridging a gap that spans an ocean and continent farther than they could imagine.

"The student's mission began back on Aug. 27, according to Eric Hamilton, the school's curriculum coordinator. The first quarter curriculum for the Galileo Sixth Graders, more affectionately known as the Bulldogs, centered on the theme "Change." Within core classes, various activities were undertaken to encourage students to explore ways to make positive "changes" in the world.

"We introduced the theme and the activities ... the students then blogged in their language arts classes, researched various types of bridges and structures in science, and learned the geography of Afghanistan in social studies," said Hamilton.





**Red, White and Brave**  
By DJ Montoya, 1st Space Brigade



4F

**Sharpening Army Warrior Skills**  
in Team Building, Leadership, and Training  
By SGT Michael Cost,  
100th Missile Defense Brigade (GMD)



6F

**Alpha Detachment Builds Strong Bonds**  
By MAJ Eric Little, 1st Space Brigade



8F

**From Blue, to Green, to God**  
By Larry Mize and Bill Coffey,  
FWC DCD Training



12F

**USASMD/ARSTRAT Brings Their Best To DA**  
By Dotie White, USASMD/ARSTRAT



18F

COL Jeffrey Farnsworth (center), commander of the 1st Space Brigade, works on a project with 6th Grade scholars Everardo (left) and Roberto (right) from the Galileo School of Math and Science. Photo by DJ Montoya



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USASMDC/ARSTRAT FEATURES



# BRIDGING GAPS

