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Compass Points

Career Tools for the Future

To paraphrase Yogi Berra, you can't get where you're going unless you know where you're headed. Human navigation is thousands of years old, and it shows this truth. People from some Pacific islands, parts of Europe and the Middle East are known to have traveled vast distances across oceans using stars, planets, weather, winds and currents as landmarks. Even in those long-ago days, people understood that you will walk around aimlessly without something guiding you.

Formal navigation tools – such as the compass – also have a long history. Greek philosophers wrote about the magnetic properties of natural iron oxide (Fe3O4), or magnetite, stones around 600 B.C. In 1175 A.D., the first printed reference to the workings of a compass occurred. The Chinese had developed a compass for navigation some years previously. Almost a century later, in 1269, Petrus Peregrinus de Marincourt, a French Crusader, described a floating compass and a compass with a pivot point.

In the same way, we can use certain tools to guide us for the future of our career field and profession. The cardinal points of a compass serve as guides while exploring the four factors involved in getting Army space ready for the challenges of the next decades: education, training, partnership and technology. The overall question during this journey is how do we bring space to the next level in the U.S. military? We space professionals need to plot our course and future deliberately so we are not drifting and losing our relevance.

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When USASMDC/ARSTRAT began offering institutional education in 2001, there was only one course presented. It is now estimated that the number of courses related to space and ground-based midcourse defense will be more than 30 by the year 2012.

This article uses excerpts from four military publications as compass points to highlight the factors of education, training, partnership and technology in the space context. It also includes a synopsis of thoughts shared at the annual Army Space Cadre Symposium by Rear Adm. Sandy Daniels, Deputy Director of the Joint Functional Component Command for Space, and Peter Marquez, former Director of Space Policy at the National Security Council. (Full interviews with Rear Adm. Daniels and Mr. Marquez appear elsewhere in this issue of the Army Space Journal.)

Education

An excellent reminder that today's educational efforts have a long-term impact comes from the first publication, The Joint Operating Environment 2010 published by U.S. Joint Forces Command.

"The future Chairmen of the Joint Chiefs of Staff of the 2030s and the Service Chiefs of Staff are already on active duty in the rank of captain or lieutenant. The Combatant Commanders and all the future flag and general officers of the U.S. military in the 2030s are currently on active duty. The Command Sergeants Major and Command Master Chiefs of the Joint Force in 2030 are in uniform. In other words, preparation of the senior military leaders of the 2030s has already begun! "

That is equally true for Army space professionals. Preparation of the future's leaders is, in fact, under way at U.S. Army Space and Missile Defense Command/Army Forces Strategic Command. The command's expanding educational programs encompass senior and junior officers, noncommissioned officers and civilians from inside and outside the Army Space Cadre, both space professionals and enablers. The Army has designated and trained Space operations officers, in FA40, for more than ten years. There are currently more than 400 FA40s on active duty, the National Guard and Army Reserve.

When USASMDC/ARSTRAT began offering institutional education in 2001, there was only one course presented. It is now estimated that the number of courses related to space and ground-based midcourse defense will be more than 30 by the year 2012. These courses include the Army Space Cadre Basic Course, Space Operations Officer Qualification Course, Sensor Manager Qualification Course and Ground-based Midcourse Defense Master Gunner Course. External education is offered through a variety of programs, including the Training With Industry program, Harvard University Program for Senior Executive Fellows and Advanced Civil School opportunities for FA40 officers to earn a master's or doctoral degree.

The importance of education provided to people at all military and civilian pay grades was demonstrated recently in USASMDC/ARSTRAT when we enhanced our "schoolhouse" in Colorado Springs, Colo. On October 1, the new Directorate of Training and Doctrine assumed responsibility for training and doctrine for space and missile defense operations within the whole Army. The directorate is part of the Future Warfare Center, which previously carried out training and doctrine duties under the Directorate of Combat Development.

Keep in mind, USASMDC/ARSTRAT has one of only a few schoolhouses in the Army administered by their own command. By creating the new directorate, training and doctrine for space and missile defense-related jobs is aligned with the U.S. Army Training and Doctrine Command's standard structure.

Colorado Springs continues to be the originating point for space and missile defense knowledge provided to Soldiers of all ranks, along with civilian space practitioners. At a strategic and intermediate education level, the Directorate of Training and Doctrine provides instructors and specialized curriculum to the Army War College, Command and General Staff College and joint space programs. It also offers space curriculum development support for Army branches and proponents, along with the fundamental instruction for all Army space, ground-based midcourse defense and high altitude systems. This includes Army officers in Functional Area 40; Army Space Support Teams and Space Support Elements at division, corps and Army levels; Army Space Cadre at the basic level; and Joint Tactical Ground Station operators, ground-based midcourse defense operators, master gunners and command launch-equipment operators, and AN/TPY-2 (FMB) sensor managers at the qualification level.

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"The success of the future Army depends on effective training, education and leader development to produce cohesive, combat effective Soldiers, units and leaders who exhibit the operational adaptability the future operating environment will require . . . in challenging and difficult missions."

– The United States Army Operating Concept, 2016-2028 (TRADOC Pamphlet 525-3-1)

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Training

With respect to training, the second publication, The United States Army Operating Concept, 2016-2028 (TRADOC Pamphlet 525-3-1), says:

"The success of the future Army depends on effective training, education and leader development to produce cohesive, combat effective Soldiers, units and leaders who exhibit the operational adaptability the future operating environment will require . . . in challenging and difficult missions."

Our command takes part in training at every level from tactical to strategic. We train and certify our space forces on their tactical team-level skills on a regular basis. This is equally true for missile warning or defense crews and Army Space Support Teams preparing to deploy in support of Operation New Dawn or Operation Enduring Freedom. We regularly support corps- and army-level training exercises along with taking part in defense support to civil disasters, all so the units will be prepared to meet the Nation's call if asked.

For example, units from the 1st Space Brigade and 100th Missile Defense Brigade (GMD) recently completed their annual field training exercises. Brigade members practiced the basic skills that all Soldiers need to have. These included land navigation using Defense Advanced GPS Receivers (DAGRs), emergency egress from a HMMWV (High Mobility Multipurpose Wheeled Vehicle) and combat assault of buildings and villages – an experience complete with "bad guys" played by the brigade's leaders.

The same month, senior uniformed and civilian leaders from the command and other military services attended the USASMDC/ARSTRAT Command Training Conference. The three-day event offered a snapshot of current capabilities and peered into the future to reveal the way ahead regarding space, cyber, ground-based midcourse defense and civilian training and education. Clearly, we are paying attention to training.

Partnership

The next compass point is partnership. A useful concept comes from the third source, The Army Capstone Concept, TRADOC Pamphlet 525-3-0. The chapter on "Meeting the Challenges" tells us that one of the six supporting ideas to enable the future forces' capability to use operational adaptability in operations is to cooperate with partners. The Army Capstone Concept goes on to say that such cooperation needs to occur between the Army and interagency, intergovernmental, multinational and private-sector partners. It is important to recognize there is special emphasis on achieving unity of effort – we must do this even in the face of the diverse cultures and interests that are found among the members of partnerships.

There are existing USASMDC/ARSTRAT partnerships in several of the specified areas. Our joint relationships and interagency partners include U.S. Northern Command, Central Command, Navy, Marine Corps and Air Force, National Reconnaissance Office and Defense Information Systems Agency. Multinational cooperators – among others – are NATO and those allied nations that are developing missile defense systems. Within the private sector, the command works with academic institutions, research organizations and manufacturers.

In her remarks at the Army Space Cadre Symposium, Rear Adm. Daniels stressed the joint nature of space and challenged Army space professionals to be ready to assume Space Coordinating Authority responsibilities over joint space operations and integrating space capabilities if and when it comes to them. Traditionally, Space Coordinating Authority has remained within the Air Force regardless of the type of operation simply because they own the majority of the space capability. Another approach to Space Coordinating Authority is from the user viewpoint – allowing the user to determine priorities of operational needs. As Rear Adm. Daniels suggests, there may be situations in which it makes sense for the Space Coordinating

Authority to remain with the leading user of space systems for a particular operation in order to optimize timing and tempo. In essence, any of the military services can perform as the lead operational space agent, or Space Coordinating Authority.

Technology

Technology is the fourth compass point. Its supporting reference, Department of the Army Space Policy, Army Regulation 900-1, specifies that USASMDC/ARSTRAT will seek and advocate space and missile defense-related technologies to meet validated capability gaps and requirements for land forces. As Mr. Marquez points out, cyber technology – and the follow-on concerns – in particular have expanded tremendously in the last 15 years. On October 1, the U.S. Army Cyber Command stood up, assuming duties that had been provisionally assigned to USASMDC/ARSTRAT.

We know that space and cyberspace are inextricably linked. Using a parallel analogy, where does the ocean meet land – at the shore or at the bottom of the sea? When it comes to space, technology provides the linkage into cyberspace. We must keep this in mind as we consider our command's ongoing technology programs that are focused on meeting Army space priorities. These include enhanced satellite communication; theater missile warning; persistent surveillance; position, velocity, navigation and timing services; and weather, terrain and environmental monitoring. Our command initiatives also include high altitude, responsive space, space data exploitation and supply chain risk management.

Programs to watch for in the near future include the Long Endurance Multi-Intelligence Vehicle, SMDC-One nanosatellite – the Army's first satellite to be designed and launched in 50 years – and Kestrel Eye nanosatellite. Each of these technologies has operational applicability, with the intent of delivering real-time, on-demand communication and intelligence, surveillance and reconnaissance products to the commanders and warfighters "on the scene," as dynamically tasked by the user.

Bring Space Forward

Returning to the initial question – how do we bring space forward – there is a good deal of opportunity for the Army space community to progress. This is particularly true in education. We must expand our number of graduates in the schools we manage. We need more civilian space enablers and enlisted and commissioned Soldiers from throughout the Army attending and completing these courses.

Now is the time to budget for such an expansion and identify by name those people who should be on the order of merit list for Army space education. There are more than 2,300 space-related billets currently identified throughout the Army. In addition to the courses from the Future Warfare Center's Directorate of Training and Doctrine, the Space 200 and Space 300 courses offered by the National Security Space Institute are also valid options for educating an expanded set of Army space practitioners.

Finally, the Army Operating Concept reminds us of the key purpose and end-state of education and training.

"Junior leaders must demonstrate technical and tactical proficiency, but they also require the maturity, judgment and confidence to develop creative solutions to ill-structured problems. Senior leaders must become masters of operational art and must be able to think seriously about the broader context of war at the national level. In addition, all Army leaders must exemplify moral and ethical conduct and demonstrate their commitment to the professional military ethic, the Warrior Ethos and Army values."

All the knowledge received through education, however, is valuable and worthwhile only if Soldiers are trained and tested through certifications and unit exercises. Those steps allow the Army to learn through the after-action review process.

Yogi Berra is said to be one of the most frequently quoted people in the world. His words of wisdom at the beginning of this article suggest a good course of action for all of us. The four publications listed are recommended to members of the Army Space Cadre – to be read in their (short) entirety – as navigational tools for today and the future. Today's warfighters, like the ancient navigators, have the advantage of landmarks to guide them in their explorations and daily tasks. Be sure to make good use of the available tools.

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