



Staff Sgt. Yamil Ramirez-Lopez, a weapons operator with the 49th Missile Defense Battalion, Alaska Army National Guard, works in the Fire Direction Center at Fort Greely, Alaska, during Global Lightning 21, 8–12 March 2021. Members of U.S. Army Space and Missile Defense Command and Joint Functional Component Command for Integrated Missile Defense supported the U.S. Strategic Command and U.S. Space Command during the annual battle staff exercise designed to train Department of Defense forces and assess joint operational readiness across mission areas. (Photo by Staff Sgt. Zach Sheely, U.S. Army)

Modernizing Army Space

The Need for Enlisted Space Soldiers

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Functional Area (FA) 40 officers are the Army's subject-matter experts (SME) on movement and maneuver in and through the space domain and its use to provide timely, relevant, and feasible options to commanders and staffs for targeting, fires, collection, operations, and sustainment of the force. Space operations officers are augmented by enlisted manpower borrowed from other Army branches.

Army space-related activities are comprised of two categories: space operations and space-enabled operations. "Army space operations, duties, and responsibilities are centered on eight codified joint space capabilities: space situational awareness, PNT [position, navigation, and timing], space control, SATCOM [satellite communications], satellite operations, missile warning, environmental monitoring, and space-based intelligence, surveillance, and reconnaissance."¹ These are tasks in which soldiers actively use space-based capabilities to perform operations. Space-enabled operations "are combined, derived, or second order tasks and actions enabled by space capabilities."² The Army's Space and Missile Defense School has two requirements regarding these categories: conduct "qualification training and leader development for the Army's global space operations" and "educate soldiers and develop Army leaders in space capabilities and operations."³ The Army's institution of space has changed over the last twenty years. The Army is developing high-altitude platforms, space control capabilities, and navigation warfare technology. With these changes comes a foundational revolution to the way the Army implements space personnel. FA40s and borrowed military manpower are not enough to achieve success in the multidomain conflicts of 2030 and beyond. The Army requires a robust cadre of space professionals to perform space operations and guarantee success of space-enabled operations.

History

The Army's mission is "to deploy, fight, and win our nation's wars by providing ready, prompt, and sustained land dominance" as part of the joint force of all U.S. military.⁴ The Army is comprised of twenty-four branches and corps and supplemented by twelve FAs.⁵ An FA is "a grouping of officers by technical specialty or skills" other than an arm, service, or branch "that usually requires special education, training, and experience."⁶

The Army established FA40 in May 1998, with the first eleven FA40 officers selected in May 1999.⁷ The formation of FA40 happened in a very different world than the one in which we currently live. In the beginning, the role of an FA40 included bringing awareness of Global Positioning System capabilities and ensuring Army commanders understood satellite communications and the effects of space and terrestrial weather on tactical systems, as the concept was new for Army leaders. Now, twenty years later, the role of an Army space soldier has grown from merely awareness to implementation of our own Army space systems, and with that change came the requirement for enlisted soldiers to man those systems. Enlisted soldiers have performed space operation missions and utilized space capabilities since the late 1980s when the U.S. Army Space Command (ARSPACE) was established as a field operating agency of the Army deputy chief of staff for operations and served as the Army component command to U.S. Space Command.⁸

The relevance of the capabilities provided from and through the space domain was first demonstrated during Operation Desert Storm. Members of ARSPACE, including enlisted soldiers, provided Global Positioning System and other space-enabled devices and capabilities that helped the United States maintain tactical advantage over enemy forces.

After the conflict, ARSPACE became a subordinate command of the U.S. Army Space and Strategic Defense Command (now the U.S. Army Space and Missile Defense Command [USASMDC]). ARSPACE continued to add capabilities to its portfolio, including military satellite communications, Army space support teams (ARSST), early missile warning with the Joint Tactical Ground Station (JTAGS), space control, and the ground-based midcourse defense weapon system with associated radars.⁹ Added to ARSPACE's organizational design were the 1st Satellite Control Battalion (later redesignated the 53rd Signal Battalion), the 1st Space Brigade, a space

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battalion in the Army Reserves and National Guard; and the 100th Missile Defense Brigade, consisting of a missile defense battalion and five AN/TPY-2 (Army-Navy Transportable Radar Surveillance) forward-based radar batteries. As a result of President George W. Bush signing change two of the 2002 Unified Command Plan, USASMDC became the Army Service component command to U.S. Strategic Command and ARSPACE was redesignated as Army Forces Strategic Command, as the full command became known as the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command.¹⁰

The number of enlisted soldiers performing space operations missions has continued to rise along with an increased number of Army space operations organizations and missions. Enlisted soldiers from air defense, engineering, military intelligence, and signal contribute to successful mission accomplishment and integration of space throughout the Army.

As a result of Officer Personnel Management System XXI in 1997, the Army realized the growing operational reliance on space and established the space operations officer FA (FA40).¹¹ However, the Army did not establish a corresponding enlisted space career management field (CMF) or a space warrant officer career field. The principal issues with these two missing pieces are the training requirements and lack of ability to build experience since warrant officers and enlisted soldiers only spend one or two tours in space operations positions before rotating back to their basic branch, often never returning to space operations. These issues have resurfaced multiple times over the years.

During the conduct of the Space Force Management Analysis (FORMAL) in the early 2000s, the Army G-1 (Personnel) directed that USASMDC conduct a study examining the training of and operations performed by Army enlisted space forces to determine the “optimal mix of MOS [military occupational specialty], ASI [additional skill identifier], and SQI [special qualification identifier] for the enlisted forces documented in the Space TOEs [tables of organization and equipment].”¹² From 2002 to 2004, an L-3 Communications Holdings team conducted an *Army Space Enlisted Force Study* and focused on enlisted soldiers performing the satellite control, ARSST, and JTAGS missions.¹³ In addition to SME conferences, interviews, site visits, and job analysis surveys conducted

by the study team, the U.S. Army Human Resources Command (HRC) established personnel development skill identifiers (PDSI) for each mission area: PDSI C6B (Theater Missile Warning-JTAGS), PDSI C7C (ARSST), and PDSI C8C (satellite control) to help with data collection in Army personnel databases.¹⁴

The study team found issues with the training and management of enlisted space soldiers, specifically those soldiers performing the ARSST and JTAGS mission, and recommended the establishment of a space MOS or an ASI for each mission area, JTAGS and space operations. L-3 recommended solutions to HRC to better identify, track, and manage JTAGS- and ARSST-trained-and-qualified enlisted soldiers.¹⁵ In the long term, no space MOS was created, and only the ASI Q4 (JTAGS operator) was established.

The next effort, the Army space cadre FORMAL, was conducted in four phases from 2004 to 2005 and resulted in two categories of space cadre, space professional and space enabler. The space professional category included only FA40s, and the space enabler category included all other non-FA40 Army space operations personnel, including enlisted soldiers performing space operations missions and utilizing space capabilities. Although the L-3 team briefed the results of the *Army Space Enlisted Force Study* to the members of the Army space cadre FORMAL, the implementation plan, signed by the Army G-3/5/7 in 2008, stipulated that life-cycle management and assignment functions remain with personnel proponents and the HRC. Furthermore, the implementation plan stated that space operations-related training, other than positional qualification training, is not mandatory.¹⁶

The Army Space Personnel Development Office (ASPDO) conducted the Army Space Cadre Assessment from 2012 to 2014. Advocated by the USASMDC commanding general, one of the recommendations was to eliminate the two space cadre categories and simplify the Army space cadre definition.¹⁷ Initial drafts of the assessment indicated that a study needed to be completed to determine if a space CMF and a space warrant officer career field were needed; however, later drafts and the final version did not address them. To reinforce the importance of space-related professional development training, ASPDO also recommended ASI 3Y (Army Space Cadre) be converted to a billet and personnel ASI. This change would allow

warrant officer and enlisted soldier Army space cadre positions to utilize Army training funds for attendance at the Army Space Cadre Basic Course rather than organizational funds. ASPDO submitted a military occupational classification structure (MOCS) proposal for approval, but Army G-1 did not support the conversion of the ASI.¹⁸

Subsequently, only the name and criteria for award of the ASI were changed.

USASMDC senior leadership decided to go forward with a request to establish a space CMF in 2018, and ASPDO developed the MOCS proposal for submission. USASMDC conducted two rounds of internal coordination toward the end of the year, and ASPDO forwarded the MOCS proposal to the four affected personnel proponents in April 2019. The last concurrence was received in October 2019. Meanwhile, a space-imbalanced issue was identified for one of the proposed MOSs, and an internal determination was made to move forward with a single MOS. The momentum for an Army space branch slowed with the development of the U.S. Space Force. However, in 2022, the Army space branch initiative emerged once more to create a modular approach to a space branch by focusing on the largest obstacle first. In March 2023, the USASMDC commandant determined the enlisted space soldier as the number one priority to create and maintain lethality and superiority in the space domain.

Problem

Army space has been altered in many ways during the last twenty years. The Army focused on



Space and Missile Defense School students (from left) Spc. Philip Sechow, Pfc. Jarod Milliman, Spc. David Sheek, and Sgt. Elizabeth Hughes, all from 1st Space Battalion, 1st Space Brigade, continue critical training in Colorado Springs, Colorado, in May 2020 during the COVID-19 pandemic. (Photo by Dottie K. White, U.S. Army)

modernizing its weapon systems and capabilities by fielding JTAGS detachments, Mobile Integrated Ground Suite companies, and space control planning teams. It now needs to modernize its implementation of soldiers. Soldiers serving in space positions within the Army come from numerous career paths, including the engineering, air defense, signal, and intelligence branches. Soldiers serve a single tour within their space mission area before rotating back to their basic branch. This creates a problem where expertise is built through a three-year process before being lost as soldiers return to their basic branches. There are currently no master-gunner-level experts within Army space due to the small amount of time they spend within a mission area. There are no processes to assess talent and performance to place successful NCOs into assignments with more span of influence. The small number of soldiers who do elect to spend more than one tour within Army space do so while risking a detriment to their career, as their professional development models do not account for positions within space as career enhancing.¹⁹ The space domain's relevance is established in the Army's new operations doctrine:

Proliferation of advanced space technology provides access to space-enabled technologies

to a global audience. Some adversaries have their own space capabilities, while commercially available systems allow almost universal access to some level of space-enabled capability with military applications. ... Army forces rely on space-based capabilities to enable each warfighting function and effectively conduct operations. Commanders and staffs require an understanding of space capabilities and their effects and the ability to coordinate activities between involved agencies and organizations. Commanders cannot assume that U.S. forces will have unconstrained use of space-based capabilities, including data communications. Therefore, Army forces must be prepared to operate under the conditions of a denied, degraded, and disrupted space domain.²⁰

Weapon systems and battlefield effects utilizing the space domain will not be totally realized in warfare until a sustainable source of expertise is shaped. Many soldiers who find themselves working within a mission area in Army space desire to carry on with the field. When opportunities are unavailable, soldiers take other chances to extend their duration within space-based mission areas. Evidence of this phenomenon is seen with the ongoing exodus of soldiers to the U.S. Space Force along with the 53rd Signal Battalion's satellite communications mission and the recent transition of 1st Space Brigade's JTAGS missile warning mission.²¹ The soldiers transferring to the Space Force, along with these mission areas, are at least partly soldiers who could be retained if the opportunities existed within the Army. From the exit survey and interviews I conducted with soldiers who choose to transition to the Space Force, soldiers tend to exit the Army to remain with their preferred space mission areas by working civilian roles within the operational and institutional training units comprising the space enterprise.

Position

While the U.S. Space Force is focused on strategic-level warfare, warfighters at the tactical level require space support and effects. This is not unlike the development of the Army's aviation branch. In the wake of the U.S. Air Force's birth in 1947 from the Army Air Corps, the Army retained the requirement

for organic aviation support to Army-specific operations. Similarly, organic space operations are required to support the multidomain operations of the Army in 2030 and beyond. Col. Pete Atkinson, the space division chief of the Army Strategic Operations Directorate, emphasizes this point:

Army space professionals share two unique qualities. First, they understand the Army and large-scale ground maneuver. Second, they understand the space domain and how space-based capabilities affect the Army, and they can enable Multidomain operations ... The Space Force establishment highlights the need for more space forces and capabilities in all services, not fewer. Army space must define its unique service culture centered around its Army space professionals, who leverage and integrate space capabilities.²²

In defining its service culture, the Army must cultivate a cohort of enlisted space professionals capable of implementing space capabilities at echelon. It must empower that cohort to share their knowledge with future generations of space professionals. Finally, the Army must guarantee career progression for those who dedicate themselves to the space domain. Failing to perform any of these pillars will lead to a less professional Army space contingent that is unable to maintain its best weapon, its people.

Solution

The Army needs to establish three pillars to modernize Army space enlisted cohort. First, soldiers performing within Army space mission areas must garner professional credit for their successful assignments by awarding them with career progression. Second, the Army must establish broadening assignments within Army space similar to those within basic branches. Last, the Army has an obligation to deviate from the status quo of using Army space enlisted soldiers as borrowed military manpower. The creation of an enlisted space operator MOS is vital to the Army's success in future eras of competition.

Leaders within the operational branches of the Army charged with the completion of space mission areas must establish key developmental positions within the current Army space population branches. Key developmental billets allow soldiers to earn points

toward progressing throughout their career; these positions are normally outlined in the Department of the Army Pamphlet (DA Pam) 600-25, *U.S. Army Noncommissioned Officer Professional Development Guide*.²³ The branch-specific variant of DA Pam 600-25 outlines the knowledge, skills, and behaviors necessary for soldiers within that CMF to be successful. An example from the air defense supplement reads,

Sergeants should be the tactical and technical NCO that executes training for individuals, crews, and small teams; should work toward becoming a Subject Matter Expert (SME) of ADA Doctrine and their systems' capabilities and limitations; develop a keen understanding of Troop Leading Procedures and Army Programs that are available to Soldiers. Sergeants should manage their team's participation in the Army Maintenance Program. They should begin attaining a knowledge of planning, preparing, executing, and assessing individual and crew training.²⁴

Knowledge, skills, and behaviors are not developed for Army space soldiers due to the prevalence of these residing with basic branches. The career progression plans within DA Pam 600-25 also outline the duty positions that are required to progress to subsequent ranks.²⁵ For example, the DA Pam 600-25 signal supplement outlines the required assignments required for a favorable look during promotion. For example, satellite communication systems operator-maintainer staff sergeants should utilize the following models to be prepared for promotion to sergeants first class:

- ♦ **Institutional training.** Senior Leader Course and Battle Staff NCO Course. Successful graduation with honors from these courses may be a significant promotion factor.
- ♦ **Operational assignments.** NCOs should focus on continued development and refinement of their skills with assignments that develop leadership skills, hone technical expertise, and lay



Master space badge (Photo courtesy of the U.S. Army Space and Missile Defense Command)

a foundation of tactical knowledge during this phase of their career. NCOs should seek positions to gain leadership experience such as SATCOM system supervisor, SATCOM operations NCO, circuit control supervisor, SATCOM maintenance supervisor, Military Strategic and Tactical Relay team chief, and platoon sergeant at every opportunity. Likewise, NCOs should seek positions that broaden the force such as drill sergeant, recruiter, instructor, developer, or Advanced Leader Course small group leader while avoiding consecutive assignments outside of their MOS.

- ♦ **Special assignments.** Drill sergeant, platoon sergeant, White House Communications Agency, Advanced Leader Course small group leader, instructor/writer, security forces advisory brigade, and detailed recruiter.²⁶

The first step to creating a professional enlisted space cohort is codifying the developmental positions within the space domain as “career enhancing” via DA Pam 600-25 edits. Each proponent involved in space mission areas would need to update their supplement to allow for credit toward promotion while also prioritizing follow-on assignments within Army space to better utilize expertise developed in those positions.

To elaborate on the follow-on assignments, the Army needs to establish codified key developmental leadership positions within Army space. Titles like platoon sergeant, first sergeant, and command sergeant

Table. Space MOS Using Billets Performing Space Mission Areas

	Army Space Requirement	Percentage of Branch Population Affected
Air Defense	250 personnel	7.8%
Signal	121 personnel	3.6%
Military Intelligence	54 personnel	.6%

(Table by author)

major resonate with members of the promotions board. Many Army space manning documents utilize non-standard Army vernacular for duty positions; notably, a FBM (forward-based mode radar) operations sergeant describes what is, in practicality, a detachment sergeant, or systems evaluator instead of the known term, “master gunner.” Army space soldiers are boarded for promotion alongside their basic branch peers, while branch sergeants major acting as members for proceedings do not understand what these positions entail. This falls into an overarching objective to normalize Army space. The normalization process includes everything from duty positions to the space lexicon. Army space effects must be translated to warfighting terminology to enable division commanders to apply them as warfighting effects. Similarly, Army space duty positions should reflect their common Army verbiage to prevent confusion when implementing both effects and manpower. In addition to recoding current Army space billets, there is a need to grow the Army space institutional and support elements. The Army Space and Missile Defense School hosts twenty-two courses. When the JTAGS mission area transitions to Space Force, the remaining twenty-one courses will not have a single enlisted instructor position to sculpt the initial qualification training of Army Space 2030 and beyond. The Army must add military instructors throughout the Space and Missile Defense School to reinject expertise at the institutional level. Division, corps, and combatant command staffs currently have no enlisted personnel to plan and employ layered space effects on the battlefield. Creating an enlisted space military occupational specialty would enable precision implementation of Army space assets, capabilities, and effects at various echelons to produce additional kinetic and nonkinetic pathways to success.

Based on a 2023 analysis from the Army Space Personnel Development Office, creating a space MOS (internally called 40D) using the billets currently performing space mission areas would require 425 active-duty billets (see the table).²⁷

If FA40D were established using a grade structure of E5–E9, the MOS would allow initial-term soldiers to switch to a new career path, allowing a degree of control within their professional progression and positively affecting retention numbers. This transition would allow for more Army retention of personnel interested in space domain mission areas by following the functional area format of selecting applicants from a wide talent pool (in this case any MOS could apply) to take their existing skillset and shape their expertise toward the space domain. Under this plan, artillery soldiers could take their skills with targeting and specialize into space by assisting with the future development of space control capabilities. Soldiers could merge their intelligence knowledge with space-based reconnaissance or surveillance. FA40D would act as an evolution to enlisted career progression, allowing soldiers to not simply move into a new career field, but instead merge spheres of knowledge enabling new ways of problem-solving.

Conclusion

The Army is delivering the force of 2030 and designing the force for 2040. Multidomain operations are the playbook by which our Nation will overcome all states along the competition continuum. The personnel carrying out those plays are the enlisted members conducting space operations. To fully empower those soldiers, the Army must redefine the manpower utilization of Army space. Senior Army leaders must ensure soldiers performing within Army

space mission areas garner professional credit for their assignments. The Army must emphasize the institutional avenue of Army space by establishing broadening assignments in line with basic branches. The Army has an obligation to the enlisted space soldiers to stop using them as borrowed military manpower. The culmination of evolution within the Army space human dimension is the creation of an enlisted space operator MOS. FA40D would be an Army-trained SME in all levels of completion through the lens of the space domain.

Land, maritime, and air operations need to be nested with space effects while countering enemy space capabilities able to halt or slow progress on those operations. Just as Army land component units utilize enlisted expertise in each warfighting function, they also need enlisted personnel specialized in delivering domain applications to the fight. In doing so, the U.S. Army must adapt a professional enlisted space cohort in the form of a space operations sergeant to use basic branch mission awareness coupled with Army space implications to revolutionize the battlefield of 2030 and beyond. ■

Notes

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