# Space Operations

## 1. Introduction

*a. Purpose.* The United States Army is the largest user of Space-based capabilities in the Department of Defense (DOD). Access to these capabilities is achieved through the Warfighting functions by Soldiers and Civilians of the Army Space Cadre. At the core of the Army Space Cadre, Functional Area 40 (FA40) Space Operations Officers provide in-depth expertise and experience to leverage Space-related assets which enable the Army across all Warfighting functions down to the lowest echelon. FA40 has two distinct career paths: Space Operations Officer (FA40A) and Army Astronaut (FA40C). FA40A officers serve in operating and generating force positions supporting the Army and Joint, Interagency, Intergovernmental and Multinational (JIIM) organizations that focus on delivering Space capabilities to the Warfighter today as well as developing and integrating Space capabilities for the future. FA40A Officers are integrated into operations and planning positions at all organizational levels and in positions that influence/shape, research and develop, and acquire Space-related capabilities. Although 40% of FA40 billets reside within USASMDC/ARSTRAT, the remainder range from serving in a Special Operations Group to the Office of the Secretary of Defense (OSD) included in those billets are the Joint Interagency Combined Space Operations Center (JICSpOC), Defense Intelligence Agency (DIA) and the Department of the Army (DA) staff. FA40C provides the opportunity for officers selected by the National Aeronautics and Space Administration (NASA) to serve as astronauts for human exploration of Space.

*b. Proponent Information.* The Commander, U.S. Army Space and Missile Defense Command/U.S. Army Forces Strategic Command (USASMDC/ARSTRAT) is the Personnel Developer for FA40 Space Operations Officers. The Director, Army Space Personnel Development Office (ASPDO) is the focal point for all FA40 Space Operations Officer matters. FA40 is managed within the Operations Support functional category. Contact with the ASPDO can be made through email at: usarmy.peterson.smdc.mbx.aspdo@mail.mil or our Army Space Knowledge Management System (ASKMS) website at: https://army.deps.mil/army/sites/ASKMS/SitePages/Home.aspx (Use your CAC "Email" certificate when prompted). Additionally, you can find our FA40 Blog on Army Career Tracker (ACT) webpage at https://actnow.army.mil.

*c. Functions.*

(1) FA40A Officers serving in operating force positions deliver Space capabilities to the Warfighter. They plan and specialize in integrating space operations into the military decision-making process and the Joint Operations Planning Process. They advise commanders and their staffs concerning the availability, use and interface of Space capabilities. In addition, they synchronize, optimize and de-conflict the use of Space resources with the Commander's staff and across the Warfighting Functions. They provide commanders the Space Estimate and the Space Annex for Operations Orders. FA40As serve as the command's subject matter expert on all matters pertaining to Space to include fully understanding the highly technical tools utilized in operational planning and execution. FA40A Officers are trained to comprehend, enable and improve how the operating force uses Space capabilities, and to know the Space-based products they require and/or produce. They are also trained to understand the reliance of military units on space assets and the effects when those capabilities are unavailable, degraded or denied and know how to prevent, mitigate or work through and continue operations under such conditions

(2) FA40A Officers serving in generating or capabilities development positions have the unique ability to influence the future of Army Space operations through doctrine development, research and development, acquisition, policy development, concepts and capabilities development and training/education. In addition to positions on the Army Staff or within USASMDC/ARSTRAT, FA40A officers serve in a variety of JIIM organizations and positions.

(3) Officers selected to serve as Army Astronauts (FA40C) are detailed to NASA to support the Nation's manned Space programs. Astronaut areas of training and application are determined by the Director of Flight Crew Operations at NASA's Johnson Space Center (JSC) and include the International Space Station (ISS) and any future Space vehicle or mission. For more information on FA40C, see paragraph 4.

## 2. Officer Characteristics Required

*a. Characteristics required of all officers.* All officers are expected to possess the base characteristics that will enable them to develop into agile and adaptive leaders. Our leaders must be grounded in Army values and the Warrior Ethos, competent in their core proficiencies, and broadly experienced to operate across the full spectrum of conflict. They must be able to operate with JIIM partners and leverage capabilities beyond the Army in achieving their objectives. Our officers must be culturally astute and able to use their awareness and understanding to conduct operations innovatively and courageously to exploit opportunities in the challenges and complexities of the operational environment. Further explanation of these characteristics can be referenced in Army Doctrine Publication (ADP) 3-0*, Unified Land Operations,* Army Doctrine Reference Publication (ADRP) 3-0*, Unified Land Operations,* and in Part One of Department of the Army (DA) Pamphlet (PAM) 600-3.

*b. Unique knowledge of a Space Operations Officer (FA40A).* FA40As are required to understand how Space systems can contribute to military operations and must know how to apply Space capabilities to contribute to a wide range of military operations. FA40As must possess knowledge of military, civil and commercial Space organizations and systems to include system architecture, equipment, capabilities, limitations, software applications, tools and services. This knowledge is essential to be able to integrate space capabilities into the military decision-making process .Possession of technical and tactical skills and the understanding of strategic and operational concepts, to include Space enhanced threats, are extremely important for success. Space Operations Officers must:

(1) Remain current on organizational structure, Space doctrine (JP 3-14 and FM 3-14) and policy (AR 900-1) as well as military, civil and commercial Space activities as they relate to all levels of military operations. They must understand how Space capabilities enhance Army systems and enables all Warfighting Functions.

(2) Understand and apply the interrelationship between Space capabilities and their operational utility to the Operational environment.

(3) Provide timely and accurate advice to commanders and staffs on the operational impacts of Space events.

(4) Possess an understanding of automation technology relative to the Space operations field. In addition, they need to be aware of other branches and functional areas that have similar functions.

(5) Have a basic understanding of orbital mechanics, mathematics, physics, engineering and communications.

(6) Possess knowledge of other nation's Space capabilities; the Space structure within the DOD; and U.S. and DOD policies and strategies related to Space. Be well versed in Warfighting Functions and Space operations with JIIM partners.

(7) Have understanding of acquisition, Joint Capabilities Integration Development System (JCIDS) and capabilities development when entering shaping or capabilities development positions.

(a) Understand how the Army Staff operates and advocate for Space needs.

(b) Understand how DoD and Inter-agencies operate and advocate for Army Space needs.

(8) Understanding of International law and treaties and U.S. policy concerning:

(a) Use of Space-based capabilities.

(b) Use or application of systems which affect or specifically target Space systems.

(9) Understand the potential employment of technical Space concepts to enhance unified land operations. These include, but are not limited to:

(a) Remote sensing across the entire electromagnetic spectrum to include radio frequency, electro-optical, infra-red, multi-spectral, hyper-spectral, and radar.

(b) Geospatial sensing.

(c) Communications architecture and networks.

(d) Missile warning.

(e) Information Operations (IO) that support or require the support of Space Operations.

(f) Cyber Operations that require the support of Space Operations.

(10) Know limitations and vulnerabilities of Space systems to weather (Space and terrestrial), interference, and infrastructure failures and attack (kinetic and non-kinetic).

(11) Understand the reliance of military units on space assets and the effects when those capabilities are unavailable, degraded or denied and know how to work through and continue operations under such conditions.

(12) Integrated Joint Special Technical Operations (IJSTO): During the period of OIF/OEF, 9 percent of the FA40 population constituted 80 percent of the Army's division and corps IJSTO leadership positions, and 33 percent for the Army's total IJSTO leadership positions. These include both IJSTO Chief and Senior IJSTO Planner positions. FA40s must enhance their viability and credibility by seeking out opportunities to serve in space-related positions such as IJSTO and alternative compensatory control measures.

*c. Unique skills of a Space Operations Officer (FA40A).* FA40As bring Space capabilities to the warfighter. The Army requires Space officers that are technically trained and tactically experienced in the integration and defense of all Space capabilities for Joint land component operations. FA40As must:

(1) Utilize and integrate Space capabilities with terrestrial, air, sea and high-altitude based systems owned and operated by DOD, the Intelligence Community, Civil Agencies and commercial partners to provide integrated and timely capabilities to the warfighter. Capabilities within the five Space Mission Areas include (as defined in JP 3-14 and FM 3-14):

(a) Space Force Enhancement. Operations Support actions to improve the effectiveness of military forces as well as support other intelligence, civil and commercial users. This mission area includes:

1. Intelligence, Surveillance and Reconnaissance (ISR)
2. Missile Warning
3. Environmental Monitoring
4. Satellite Communications
5. Space-based Positioning, Navigation and Timing (PNT)

(b) Space Control. Maneuver, Operations Support and Force Sustainment operations ensuring freedom of action in Space for friendly forces. When necessary, it is used to defeat adversary efforts that interfere with or attack U.S. or allied space systems and negate adversary space capabilities in Space. It includes the following functional areas:

1. Offensive Space Control (OSC)
2. Defensive Space control (DSC)

(c) Space Support. Force Sustainment operations to deploy and sustain military and intelligence systems in Space.

(d) Space Force Application. Combat operations in, through and from Space to influence the course and outcome of conflict by holding terrestrial targets at risk. This includes ballistic missile defense and force projection capabilities such as intercontinental ballistic missiles.

(e) Space Situational Awareness (SSA). It is the requisite current and predictive knowledge of the space environment and the operating environment upon which space operations depend. SSA involves characterizing, as completely as necessary, the space capabilities operating within the terrestrial environment and the space domain. SSA is dependent on integrating space surveillance, collection, and processing; environmental monitoring, processing and analysis; status of US and cooperative satellite systems; collection of US and multinational space readiness; and analysis of the space domain. It also incorporates the use of intelligence sources to provide insight into adversary use of space capabilities and their threats to our space capabilities while in turn contributing to the JFC's ability to understand adversary intent.

(2) Provide expert Space analysis to support Army and JIIM partners' plans and operations.

(3) Coordinate with staffs to integrate space capabilities that enable and support Inform and Influence Activities (IIA), IO and cyber activities.

(4) Be proficient in Space Control operations to include OSC and DSC.

(5) Possess the expertise in both Space systems and unified land operations in order to serve in high-level positions (Army and JIIM partners) with minimal guidance and close interaction with senior-level decision makers.

(6) Conduct force and crisis intervention planning and operations as related to Space.

(7) Know Space procedures and infrastructure for tasking, posting, processing and utilization of Space products and telemetry, tracking and command of Space systems.

(8) Have the ability to translate complex Space concepts and systems into terms which have meaning to the warfighter and systems developer.

(9) Leverage current and future Space-based technologies in non-traditional ways to solve new and emerging military issues.

(10) Use modeling, simulation, analysis and other tools in the development and use of Space capabilities.

(11) Be involved with the development and integration of policy, concepts, requirements, and acquisition for Space capabilities.

(12) Be capable of clearly and accurately communicate technical information and concepts. All Space Operations Officers will be called upon to:

(a) Write and present in-depth briefings at all levels.

(b) Educate and train others about Space in accordance with the Army Space Training Strategy (ASTS).

(c) Systematically analyze problems and develop alternative solutions.

(d) Implement plans and orders.

(e) Be adept at organizing workload, assigning tasks and mentoring civilian and military subordinates.

(f) Identify and utilize Space Cadre members within their organization.

*d. Accession into FA40A.* The FA40A community is comprised of a mix of officers from all branches and other functional areas. This wide range of experience has helped make this a healthy functional area. Officers looking for accession into FA40 (via the Voluntary Transfer Incentive Program (VTIP)) should consider the following:

(1) Proven Performance. The best indicator of success for this functional area is previous performance.

(2) Demonstrated technical knowledge. Although a technical degree is not a requirement, the job is technical in nature. Officers need to be capable of clearly and accurately communicating technical information and concepts. Additionally, this is a highly educated specialty; over 70% of FA40 field grade officers have an advanced degrees.

(3) Space-related training and/or related experience. Numerous online and resident courses are available. Also, an SI 3Y (Space Cadre) is offered for those that qualify.

(4) Security clearance requirements. Officers must be able to obtain and maintain a Top Secret/Sensitive Compartmentalized Information (TS/SCI) security clearance. Due to the time requirements to gain this clearance, Officers that do not have a TS/SCI clearance should submit their request prior to VTIP.

(5) Captains Career Course completion. If not complete, officers are sent to a Combat Arms course.

(6) An officer cannot assess into FA40C; those officers are selected by a NASA Selection Board.

*e. Core Competency.* The FA40 goal is to provide an array of opportunities in assignments, education and experience to develop a well-rounded officer at each grade and throughout the officer's career. This approach is intended to develop the officer's skills, broaden their experience base and prepare them for higher levels of responsibility. Core Competencies for FA40As at each grade are as follows:

(1) *Captains*.

(a) Exercise initiative and effective leadership of assigned personnel.

(b) Demonstrate effectiveness and competency in assigned Space responsibilities.

(c) Manage employment of assigned capabilities/equipment.

(d) Understand Space capabilities and how they are employed in military operations.

(e) Effectively communicate and contribute to the Military Decision Making Process (MDMP).

(f) Be familiar with the fundamentals of the Planning, Programming, Budgeting and Execution System (PPBES), requirements development and acquisition.

(g) Train staff and subordinate units on space capabilities and contested space operational environments.

(2) *Majors*.

(a) Demonstrate effective organizational leadership in a Space Key Developmental (KD) position and high potential for senior leadership.

(b) Demonstrate understanding and application of capabilities across multiple Space mission areas.

(c) Effectively advise the Supported Commander on all aspects of Space operations.

(d) Effectively plan/integrate and ensure proper employment of Space capabilities in military operations.

(e) Leads and supports the MDMP planning effort.

(f) Demonstrates understanding of PPBES, requirements development and acquisition processes.

(g) Train staff and subordinate units on space capabilities and contested space operational environments.

(3) *Lieutenant Colonels.*

(a) Demonstrate high performance in Space KD positions and high potential for senior leadership.

(b) Demonstrate breadth of experience and competency across multiple Space mission areas.

(c) Operates effectively at the Strategic, Operational and Tactical levels.

(d) Effectively integrates and ensures innovative employment of current and emerging Space capabilities in joint, interagency, intergovernmental and multiple operating environments.

(e) Leads and supports the MDMP and Joint planning effort.

(f) Effectively advocates and influences Service and Joint policy, budget, requirements and acquisition processes.

(g) Train staff and subordinate units on space capabilities and contested space operational environments.

(4) *Colonels.*

(a) Highly functioning senior leader providing effective strategic direction.

(b) Demonstrates breadth of experience and competence in the operating and generating force with appropriate Joint experience.

(c) Advises senior leaders at Strategic and Operational levels.

(d) Sets the conditions to optimize the employment of current capabilities and shapes the direction of future capabilities to enhance service, joint, interagency, intergovernmental and multinational operations.

(e) Assesses and orchestrates overall planning effort, allocates resources and set priorities for planning and operations.

(f) Effectively shapes and guides Service and Joint policy, budget, requirements and acquisition processes to achieve desired outcomes.

(g) Train staff and subordinate units on space capabilities and contested space operational environments.

f. *Special qualifications.* All FA40s MUST maintain a TS/SCI security clearance.

**3. Officer Development**

*a. Officer Development Model.* The Officer Development Model is focused more on the quality and range of experience, rather than the specific gates or assignments required to progress.

(1) Initial entry officers gain branch technical and tactical skills to develop a Warrior Ethos and gain important leadership experience in company grade assignments.

(2) Throughout an officer‘s career, the model highlights the need to gain JIIM experience and exposure.

(3) All functional area transfers are handled by VTIP. This panel standardizes functional transfers, meets dynamic functional area/branch requirements, and empowers officers to make informed career decisions by providing flexible and viable career paths.

(4) Lifelong learning, supported by both civilian and military education, provides critical opportunities to develop both Joint and Army competencies.

(5) Broadening assignments, education or experiences expand a leader’s capabilities by exposing them to different organizational cultures and environments. The binning concept groups assignments into distinctive broadening opportunities (defined in Part One of DA PAM 600-3). Officers should weave through the different bins during their career. This broadens the officer by providing different experiences and perspectives. It also develops future leaders with valuable and varied skills while developing a bench of senior strategic leaders with diverse talents and perspectives to the Army. A balanced mix of assignments offers the best path to development of strategic level thinkers and leaders. The four bins are:

(a) *Institutional and Functional Assignments* - MTOE unit; Brigade and below assignments, Div/Corps/SF Group Space Support Element; TDA unit; USASMDC/ARSTRAT, HQDA G-3/5/7, 704th MI BDE.

(b) *Joint and Multi-National Assignment* – Joint Staff, Principle DoD Space Advisor (PDSA), USEUCOM, USAFRICOM, USSOCOM, USSTRATCOM, US Cyber Command, JFCC-Space, Joint Navigational Warfare Center (JNWC), North American Aerospace Defense Command (NORAD), North Atlantic Treaty Organization (NATO).

(c*) Inter-Agency and Inter-Governmental Assignments* - Office of the Secretary of Defense (OSD), National Reconnaissance Office (NRO), Defense Information Systems Agency (DISA), Defense Intelligence Agency (DIA), Joint Interagency Combine Space Operations Center (JICSpOC)

(d) *Civilian Enterprise and Academia Assignments* - Advanced Civil Schooling (ACS), Training with Industry (TWI), instructor positions at the Naval Postgraduate School (NPS), United States Military Academy (USMA), Air War College (AWC) and Combined Arms Center (CAC), and Army Scholarship/Fellowship/Internship program.

(6) The Army Career Tracker (ACT) is the Army's online professional development application. FA40s now have an online tool they can use to map their careers, assignments and training opportunities. ACT integrates training, assignment history, formal and informal education information from 15 databases and systems into one interactive and easy-to-use interface. ACT does not replace Army training, education, and assignment systems and programs. Instead, it brings them all together in one place, with the goal of making systems and programs more convenient to access and easier to use. FA40s can monitor their career development and history, search education and training resources, and receive personalized career planning and goal setting advice from leaders and mentors. It is also a tool to aid in mentorship. Used properly, this tool facilitates structured mentorship and can be utilized and revised by successive mentors as an officer progresses in experience. Login at https://actnow.army.mil

(7) Army Space Knowledge Management System (ASKMS). ASKMS is an enterprise SharePoint website on both NIPRNET and SIPRNET that provides a communication and collaboration tool for Army Space Cadre and supports Army space interests worldwide. ASKMS capabilities include classified and unclassified sites, secure access through common access card authentication, discussion boards, space web links, lists, document libraries, records archives, surveys, sites and workspaces. ASPDO utilizes ASKMS for space badge and 3Y SI/ASI/and S1A PDSI processing, space education and training, FA40 career management, and Army Civilian Schooling/Training with Industry programs. ASKMS can be accessed through the following URLs:
NIPR: https://army.deps.mil/army/sites/ASKMS/SitePages/Home.aspx
SIPR: https://intelshare.intelink.sgov.gov/sites/askms

*b. FA40 Functional Area Development.* FA40s have certain requirements to ensure they are developed and well-grounded in Army and unified action partners operations. Success will depend not on the number or type of positions held, but rather on the quality of duty performance in every assignment.

(1) *Initial selection through VTIP*. Upon notification of selection, Officers should contact the FA40 Assignments Officer at U.S. Army Human Resources Command (AHRC) to discuss assignment expectations. Officers assessing into FA40 that have not completed the Captains Career Course (CCC) will be scheduled to attend a combat arms CCC if available.

(2) *Space Operations Officer Qualification Course (SOOQC*). All FA40 officers must complete SOOQC to be credentialed as an FA40. **Completion of SOOQC is required prior to the initial FA 40 assignment**. Officers that have not completed SOOQC will not be considered for ACS and TWI. SOOQC is a two part course, taught up to three times per year. The first part of this course is Space 200 taught at the National Security Space Institute (NSSI); part two is taught by the USASMDC/ARSTRAT Directorate of Training and Doctrine (DOTD); both schoolhouses are located in Colorado Springs, CO. Although these two parts can be taken separately, the goal is to be taken together. Space 200 MUST be completed before the second part of SOOQC. This course is designed to ensure the new FA40 understands the five space mission areas: Space Control, Space Force Enhancement, Space Support, Space Force Application and Space Situational Awareness. Specifically, the course covers space organizations, space environment; space systems and architectures; space-based assets and their capabilities, limitations and vulnerabilities; space asset application and employment; tactics, techniques and procedures, space systems acquisition and emerging Army space capabilities, and more importantly how to integrate those systems into Army operations.

(3) *Initial Assignment*. All new FA40s will be assigned to a developmental position supported by a senior FA40 mentor.

(4) *Follow-on Assignments.* There are two assignment cycles each year: Summer (April-September) and Winter (October-March).

(a) Each cycle, ASPDO will develop a prioritized list of assignments using the HQDA Manning Guidance. This list is provided to the FA40 Assignments Officer at HRC to begin the assignments process. IAW Army Manning Guidance, organizations with the highest fill priority take precedence in filling. Normally,

an officer without a high priority assignment will be slotted against such a billet before being considered for a lower priority billet. Officers must serve in geographically different locations. Repetitive assignments in the same location, organization or job types (Joint, SSE, etc.) do not facilitate broadening or professional development.

(b) Other considerations include Exceptional Family Member Program (EFMP), Married Army Couples Program (MACP), past assignments, dwell time, length of deployments, manner of performance, and by-name-requests. While the FA40 Assignments Officer attempts to match these factors with the Officer's personal preferences, a "satisfactory" result is contingent upon the Officer making realistic preference selections. The FA40 Assignments Officer attempts to match talent and performance to the right job.

(c) Individual officers need to be involved in the process. The binning concepts described in paragraph 3 a.(5), helps officers realistically manage their career; do not limit your development/broadening by staying in any bin too long. Look for other opportunities at increasing levels of responsibility. The Army is developing leadership with a broad range of experience.

(d) To be considered functional area qualified, FA40 officers will have completed the SOOQC and served in a Captain-level developmental assignment and/or a Major or higher-level KD assignment.

(5) *Professional Military Education (PME).* Officers should plan on attending required PME TDY enroute to their next assignment, when eligible.

(a) Captains Career Course (CCC). CCC prepares company grade officers to command at the company, troop or battery level, and to serve as staff officers at battalion and brigade levels. If not complete prior to accession, officers are sent to a Combat Arms course.

(b) Intermediate Level Education (ILE). ILE is the formal education program for Majors. All FA40s will attend ILE following selection to Major but not later than the start of their 15th year of commissioned service. ILE common core is required to attend JPME Phase II or Senior Service College (SSC). An HRC selection board determines the method of attendance. FA40s can be selected to attend in one of three ways: (1) 10-month Residence; (2) Satellite course or (3) Advanced Distance learning plus SOOQC. The 14 week Common Core course is taught at various locations. This course plus SOOQC makes the officer ILE complete.

(c) Senior Service College (SSC). SSC provides senior-level PME and leader development training. An HRC board selects senior O-5s or O-6s to attend either in residence or distance learning. Refer to associated MILPER message for eligibility requirements.

(6) *Joint Assignments.* Space operations are inherently Joint in nature. As such, FA40 has numerous billets on the Joint Duty Assignment List (JDAL). FA40 Majors and above will be considered for Joint duty assignments worldwide. Officers assigned to a Joint billet should plan on Joint Professional Military Education Phase II (JPME II) TDY enroute. Officers assigned to JDAL positions will meet all JPME requirements. These assignments are controlled, normally 36 months in length. Officers assigned to these billets will receive the joint officer specialty skill identifier (3A) upon successful joint tour completion. Upon completion of a joint tour and JPME II, the Joint Policy Branch at AHRC will assess the officer’s file and grant the fully joint qualified ASI (3L).

(7) *Other Broadening Opportunities.*

(a) Advanced Civil Schooling (ACS)/Training with Industry (TWI). Experienced FA40s may be called on to serve in the research and development field for future space capabilities during assignments at such places as the military related research labs (Naval Postgraduate School (NPS), USASMDC Battle Lab, the Capabilities Development and Integration Directorate (CDID) or Technical Center). The nature of these assignments requires advanced academic training (graduate or PhD) to ensure Army Space needs are adequately addressed. To be able to support the requirements of these positions, the FA40 community leverages both the ACS and TWI programs. FA40s, who have completed at least one Space operating force assignment, have the opportunity to attend ACS or TWI. Each year, ASPDO conducts an ACS/TWI Panel to competitively select individuals to attend these programs. This panel develops an order-of-merit (OML) list for all individuals that apply. When allocations come available, ASPDO will work down the OML to fill all allocations. Officers who participate in these programs will serve in ASPDO designated utilization tours as well as incur appropriate Active Duty Service Obligations (ADSO).

(b) Fellowships/Internships/Scholarships. FA40s must serve at least one operating force assignment prior to competing for an Army-sponsored fellowship. Interested officers undergo a rigorous selection process to ensure the best qualified officers are picked. Upon successful completion, the officer

incurs a 3-year ADSO. Officers interested in competing must meet the requirements outlined in AR 621–7. Acceptable programs are listed on our ASKMS site.

(c) School of Advanced Military Studies (SAMS) or sister-service equivalent. FA40 Officers may compete to be selected to attend SAMS at the U.S. Army and Combined Arms Center, Fort Leavenworth, KS or sister-service equivalent. Upon completion of school, the officer will be assigned to a utilization assignment by the Plans Branch at HRC. Assignment may or may not be to an FA40 billet. Officers interested in pursuing SAMS should coordinate with the FA40 Assignments Officer.

(8*) Professional Development Education.*

(a) The NSSI Space 300 course must be completed prior to promotion to Colonel. Seats for this course are nominative. The ASPDO manages all Army seat allocations and an OML for this course. Although Lieutenant Colonels have the priority in the course, Majors and Senior Captains may be required to attend based on their assignment.

(b) The Senior Space Leader Seminar (SSLS) is highly desired for senior Lieutenant Colonels and Colonels going into key strategic level assignments. This course is nominative. ASPDO manages the FA40 roster to this course.

(9) *1st Space Battalion/Brigade Command*. Both commander positions are centrally selected by the CSL board. Officers selected to fill these positions should expect to command for 24 months or as needed due to operational requirements. These are opt-in boards. See the appropriate MILPER message for eligibility requirements.

(10) *Self Development.* Officers must commit to a lifetime of professional and personal growth to stay at the cutting edge of the Space profession. All FA40s are encouraged to pursue educational opportunities as part of life-long learning and to enhance their professional competence and personal development including self-structured readings and study of current and emerging space capabilities. All officers are encouraged to pursue graduate-level degrees in space-related or technical fields to improve performance and contributions to the area of space-based operations. Officers should take advantage of the Army's Multi-Source Assessment and Feedback or 360 degree Assessment tool. This tool is designed to raise self-awareness and better shape the officers' self-development efforts

*c. FA40 Career Life Cycle.*

(1) Lieutenant and Captain Development (still in Basic Branch). There are no lieutenant positions within FA40 and officers at this rank cannot transfer into the FA until in a promotable status. Those officers looking to transfer as captains should focus on job performance and gaining experience during basic branch assignments as they serve as the foundation for future effectiveness. For those officers looking to transfer, the following training opportunities are open to all: Army Space Cadre Basic Course, The Advanced Space Operations School's (ASOpS) (https://halfway.peterson.af.mil/asops/ceset/asops/index.htm) Space Operations Course and Introduction to Space Course Distance Learning course. Additionally, obtaining an advanced degree in a space-related or technical field would be beneficial.

(2) Captain Development (FA40).

(a) Education: CCC, Space 200, SOOQC, Special Technical Operations Planner course

(b) Key Developmental Assignments: To be Functional Area Qualified, FA40 Officers must have completed Space 200, SOOQC, and served in Captain-level developmental assignment for 24 months. Captains must be Functional Area Qualified to serve in the following billets: JNWC Exercise and Training Officer, NRO Space Integration Officer, Fires Brigade Space Operations Officer, Division IJSTO Chief/Plans Officer (Ideally, a Captain will serve as the SSE Space Control Operations Officer during the first part of their assignment and move to the IJSTO Chief/Plans officer at the end of their tour), AWG IJSTO Planner, JICSpOC positions, SF Group Space Operations Officer, USASMDC/ARSTRAT HHC Commander and the USASMDC/ARSTRAT DCG-O XO. The ASPDO determines if any emerging Captain positions need to have Functional Area Qualified Captains.

(c) Developmental and Broadening Assignments: Any O3 FA40 assignment, ACS/TWI followed by Space-related utilization tour, Fellowship/Internships, O1A assignment.

(d) Self Development: Tactical Space Operations Course (TSOC) for those selected for a Space Support Element (SSE) or Army Space Support Team (ARSST) (TSOC normally follows the ASCBC, SOOQC or an equivalent pre-requisite training course), ASOpS Distance Learning, an Advanced degree in Space-related field or technical discipline, Defense Acquisition University (DAU) online courses.

(e) Desired experience: A Space operating force assignment and demonstrated core competencies defined in paragraph 2.

(3) Major Development.

(a) Education: ILE, Space 200, SOOQC, SAMS, JPME II, Special Technical Operations Planner course, Space 300.

(b) Key Developmental Assignments: Any Joint duty assignment (JDAL), Division SSE Chief, SF Group, 1st Space Battalion XO/S2/3, HQDA G3/5/7, Signal Center Networks and Services Assistant TCM, USASMDC/ARSTRAT G3 Ch, Space Evaluations, USASMDC Technical Center, Aide-de-Camp to the CDR USASMDC/ARSTRAT, USASMDC/ARSTRAT SGS, 1st Space BN Co/Det Commander positions, Army Space Support Team (ARSST) Team Leader, Corps IJSTO Chief, IJSTO Instructor, FA40 Assignments Officer, NTC Space Ops Planner, MCTP Scenario Planner and 704th MI BDE positions. The ASPDO designates any emerging Major positions as KD or developmental.

(c) Developmental and Broadening Assignments: Officers should build on their knowledge, experiences and opportunities at increasing levels of responsibility. The binning concept defined in paragraph 3a. (5) defines how officers should weave through the different bins.

(d) Self Development: Advanced degree in Space-related field or technical discipline, ASOpS Distance Learning, TSOC for those selected for a Space Support Element (SSE), the Defense Strategy Course (DL), and Defense Acquisition University (DAU) online courses.

(e) Desired experience: Majors should demonstrate the core competencies defined in paragraph 2.

(4) Lieutenant Colonel Development.

(a) Education: Space 200, SOOQC, JPME II, Space 300, Space Senior Leader Seminar (SSLS), SSC.

(b) Key Billets: Any Joint duty assignment (JDAL),1st Space Battalion Commander, 1st Space Brigade S3, Theater/Corps SSE Chief positions, HQDA G3/5/7, Designated Deputy Director of Space Forces (DDS4), USASMDC/ARSTRAT G3 Ch, Certification and Evaluation Branch, CAC Instructor, XO to the CDR USASMDC/ARSTRAT and if selected to fill an O-6 position. The ASPDO designates any emerging Lieutenant Colonel positions as KD or developmental.

(c) Developmental and Broadening Assignments: Consider the binning concept described in paragraph 3a. (5). Officers should weave through the different bins. Officers need to build on their knowledge and experiences. Look for opportunities at increasing levels of responsibility.

(d) Self Development: Advanced degree in Space-related field or technical discipline, TSOC for those selected for a Space Support Element (SSE), Defense Strategy Course (DL), DAU online courses, Director for Space Forces (DS4) Course, Army Force Management School.

(e) Desired experience: Lieutenant Colonels should demonstrate the core competencies defined in paragraph 2.

(5) Colonel Development.

(a) Education: SSC, Space Senior Leader Seminar (SSLS).

(b) Key Billets: All O6 billets, to include O1A, are designated KD.

(c) Developmental and Broadening Assignments: Any O6 FA40 assignment, O1A assignment, Fellowships.

(d) Self Development: Post-Graduate degree in Space/Technical discipline, SSLS.

(e) Desired experience: Colonels should demonstrate the core competencies defined in paragraph 2.

**4. Army Astronauts (FA40C).**

a. *Purpose.* Army Astronauts (FA40C) are detailed to NASA to support the Nation‘s manned space programs in accordance with the current Memorandum of Understanding (MOU) between the Department of Defense, the Army, the Navy, the Air Force and NASA concerning the detailing of military personnel for service as spacecraft crew members and the MOU between NASA and the Department of the Army regarding assignment of Army personnel to NASA, dated June 17, 1987. FA40C officers perform space flight related duties as directed by NASA; International Space Station (ISS) Commander, or Flight Engineer; Ground support of spacecraft crews - Capsule Communicator (CAPCOM), Crew Support Astronaut, Kennedy Space Center Support Astronaut or other technical jobs assigned by the astronaut office.

b. *Unique knowledge and skills*. Astronauts are well-versed and trained in all aspects of human space exploration and development in accordance with requirements specified by NASA. They must:

(1) Possess detailed knowledge of spacecraft systems, operational characteristics, mission requirements and objectives.

(2) Possess detailed knowledge of supporting systems and equipment for each experiment on their assigned missions.

(3) Be proficient in on-orbit operations such as extravehicular activity, robotic operations, experiment operations, and onboard maintenance.

(4) Have a functional understanding of orbital mechanics, mathematics and physics as well as an aptitude for engineering and communications.

(5) Understand, acquire and apply the complex technical skills specified and required by NASA.

c. *Eligibility.* NASA selects Astronaut Candidates on an as needed basis. Officers cannot assess into FA40C. Additionally, being a FA40A is not a prerequisite to being a FA40C. Eligibility requirements do change from board to board. For the most up to date criteria, refer to the NASA website at http://www.nasajobs.nasa.gov/astronauts/default.htm. Currently, Soldiers who meet the following criteria are eligible for consideration for selection:

(1) Must have a bachelor's or higher degree from an accredited institution in engineering, biological science, physical science or mathematics. Quality of academic preparation is important.

(2) Flying experience is not a requirement. The Astronaut Candidate Program requires a qualifying degree followed by at least three years of related, progressively responsible, professional experience, or at least 1,000 hours pilot-in-command time in jet aircraft. An advanced degree is desirable and may be substituted for part or the entire experience requirement (master's degree = 1 year of experience, doctoral degree = 3 years of experience).

(3) The following degree fields, while related to engineering and the sciences are not considered qualifying:

(a) Degrees in technology (engineering technology, aviation technology, medical technology, etc.).

(b) Degrees in psychology (except for clinical psychology, physiological psychology, or experimental psychology which are qualifying).

(c) Degrees in nursing

(d) Degrees in exercise physiology or similar fields.

(e) Degrees in social science (geography, anthropology, archaeology, etc.)

(f) Degrees in aviation, aviation management, or similar fields.

(4) Applicants must pass a NASA Class II space physical (similar to Army Class II flight physical). Ability to pass the NASA long-duration space flight physical, which includes the following specific requirements (these prerequisites are not waiverable):

(a) Distant and near visual acuity must be correctable to 20/20, each eye. (note: the refractive surgical procedures of the eye, PRK and LASIK, are allowed, providing at least 1 year has passed since the date of the procedure with no permanent adverse after effects).

(b) Hearing loss not to exceed ISO standards, blood pressure not to exceed 140/90, and be between 62 and 75 inches tall.

(5) Applicant must be a United States citizen.

d. *Selection.* NASA selects Astronaut Candidates on an as needed basis. Boards are normally held every 2-5 years. NASA selects astronauts from a diverse pool of applicants with a wide variety of backgrounds. From the thousands of applications received, only a few are chosen for the intensive Astronaut Candidate training program. Including the “Original Seven”, only 330 astronauts have been selected to date.

(1) Process begins when NASA notifies ASPDO on the need for a board. ASPDO confirms the selection process, dates/milestones and eligibility requirements. ASPDO will draft the MILPER and ALARACT messages and will coordinate their release detailing the application procedures. All information will be posted on the NASA website (http://www.nasajobs.nasa.gov/astronauts/default.htm) and the Army Space Knowledge Management System (ASKMS) site (https://cmdnet.smdc.army.mil/askms/SitePages/Home.aspx).

(2) Once the application deadline has passed, the Army Astronaut Candidate Screening Board convenes to review all Army applicants. Those applicants meeting designed requirements will be forwarded to the NASA Board.

(3) Following the preliminary screening of applications, additional information may be requested from some applicants, and individuals listed in the application as supervisors and references may be contacted. Applicants who are being considered as finalists for interviews may be required to obtain a NASA Class II space physical.

(4) A week-long process of personal interviews, medical screening, and orientation will be required for both civilian and military applicants under final consideration. Further interviews and a complete medical evaluation will be conducted prior to selection. Once final selections have been made, all applicants will be notified of the outcome of the process. Complete background investigations will be performed on those selected.

(5) Upon selection by NASA, Army Astronaut Candidates are assigned to NASA Johnson Space Center (JSC) in Houston, Texas per the DoD and Army MOU with NASA. Astronaut Candidates complete 18-24 months of technical NASA-specified training and education. After completion of the Candidate Course of Instruction, they are automatically functionally designated 40C and are eligible for assignment to space missions. As astronauts, they will perform duties as assigned by the Chief, Astronaut Office and NASA JSC. Duties will include flight assignments, training and collateral technical assignments. Although most astronaut candidates will enter the program at the grade of Major or Lieutenant Colonel, NASA's selection process is irrespective of military rank. Levels of responsibility in assignments generally increase with space flight experience and demonstrated performance.

e. *Training.*

(1) Astronaut Candidates undergo a training and evaluation period lasting approximately 2 years, during which time they will participate in the basic Astronaut Candidate training program, which is designated to develop the knowledge and skills required for formal mission training upon selection for a flight. Astronaut Candidates (with jet flight piloting backgrounds) will maintain proficiency in NASA aircraft during their candidate period.

(2) Applicants should be aware that selection as an Astronaut Candidate does not ensure selection as an astronaut. Final selection as an astronaut will depend upon satisfactory completion of the training and evaluation period. Graduation from the Astronaut Candidate Program will require successful completion of the following: International Space Station systems training, Extravehicular Activity skills training, Robotics skills training, Russian language training, and aircraft flight readiness training.

(3) Optional training could include attendance at SOOQC or Space 300

**5. WO Development**

There are currently no Warrant Officers assigned to FA40.

**6. Reserve Component Officers**

*a. General career development.* Reserve Component (RC) Space Operations Officers serve in the same or similar roles as their Active Component (AC) counterparts. The development objectives, educational requirements and training qualifications for the RC Space Operations Officer parallel those planned for their AC counterparts. Junior officers must develop a strong foundation through assignments in their basic branches before specializing in FA40. They may also establish credentials relevant to Space Operations in their civilian careers and should keep their Career Managers apprised of specific competencies with potential application to their future as Army Space Professionals. The quality and quantity of training and assignment opportunities that RC FA40s receive contribute greatly to their operational effectiveness.

*b. Functional Area development opportunities.* RC officers should strive for Space Operations assignments that yield the same developmental opportunities as their AC counterparts even though they may be limited by geographical considerations. The Citizen-Soldier's dual status role presents a unique challenge when following the AC development program. To meet professional development objectives, RC Space Operations Officers are encouraged to seek FA40 positions among the United

States Army Reserve (USAR) Troop Program Units (TPUs), the Individual Ready Reserve (IRR), the Individual Mobilization Augmentee (IMA), IRR-Augmentee, the Army Joint Reserve Element (ARE), Active Guard Reserve (AGR) programs, and the Army National Guard (ARNG).

*c. Intent.* The intent is to provide as many officers as possible the opportunity to serve with troops in FA40 leadership and staff positions. Limitations imposed by geographical considerations often necessitate frequent unit transfers. There are many specified requirements to transfer between the United States Army Reserve and United States Army National Guard which must be considered when this option is pursued. The success of an RC officer is not measured by the length of service in any one component or control group, but by the officer's breadth of experience, duty performance and completion of specific FA40 requirements. Every attempt will be made to assign RC officers to FA40 or a space-related branch positions with the 3Y Additional Skill Identifier (ASI). Unlike their AC counterparts, geographic constraints may limit the ability of RC officers to remain in FA40 positions throughout their career. Each individual officer must make assignment decisions based upon the level of hardship they can endure due to geographic constraints such as travel expenses, driving distances and training availability. If a successive assignment to an FA40 position is not feasible, then the officer should seek challenging positions in their basic branch or in related functional areas. Although Reserve Component Officers may attend either the AC or a two phased SOOQC, the two phased SOOQC is the desired course because it is specifically designed for RC Officers and allows an FA40 to complete the Space 200 training in year one and the remainder of the SOOQC in year two. RC FA40 qualification standards are as follows:

(1) Lieutenant Development. There are no lieutenant positions within RC FA40.

(2) Captain Development.

(a) Education: CCC, Space 200, RC SOOQC, Special Technical Operations Planner course

(b) Key Developmental Assignments: Company Command within Basic Branch prior to transferring, There are no Reserve Component key developmental positions at the Captain level. All Captain billets are considered developmental positions.

(c) Developmental and Broadening Assignments: Any O3 FA40 assignment, any Basic Branch, 01A Branch Immaterial or 02A Combat Arms Branch Immaterial assignment to position with 3Y Additional Skill Identifier.

(d) Self Development: ASOpS Distance Learning, an Advanced degree in Space-related field or technical discipline, Defense Acquisition University (DAU) online courses.

(e) Desired experience: A Space operating force assignment and demonstrated core competencies defined in paragraph 2. Complete an active duty CONUS tour or mobilization and deployment in an FA40 or a space operations related position.

(3) Major Development.

(a) Education: ILE, Space 200, RC SOOQC, SAMS, RC JPME II, Special Technical Operations Planner course, Space 300.

(b) Key Developmental Assignments: Company/Detachment Command within 1st Space Battalion or 117th Space Battalion (COARNG); 1st Space Brigade S3 Operations Officer (AGR), USSTRATCOM Army Reserve Element Joint Assessment Officer, 117th Space Battalion Executive Officer, 117th Space Battalion S2/3, Fires Brigade (ARNG), USAR/ARNG ARSST Team Leader and any ARNG Division SSE position,

(c) Developmental and Broadening Assignments: Any O4 FA40 assignment or any Basic Branch, 01A Branch Immaterial or 02A Combat Arms Branch Immaterial assignment with 3Y Additional Skill Identifier. Officers should build on their knowledge, experiences and opportunities at increasing levels of responsibility.

(d) Self Development: Advanced degree in Space-related field or technical discipline, ASOpS Distance Learning, the Defense Strategy Course (DL), Defense Acquisition University (DAU) online courses.

(e) Desired experience: Majors should demonstrate the core competencies defined in paragraph 2. Complete an active duty CONUS tour or mobilization and deployment in an FA40 or a space operations related position.

(4) Lieutenant Colonel Development.

(a) Education: Space 200, RC SOOQC, RC JPME II, Space 300, SSC, Space Senior Leader Seminar (SSLS), SSC.

(b) Key Billets: 117th Space Battalion Commander (COARNG), 1st Space Brigade Executive Officer (AGR), USASMDC/ARSTRAT G35 Plans Space Operations Officer (AGR), USASMDC/ARSTRAT Operations Center Chief (TPU), Sr, Space Operations Officer at DIV (SSE positions) (ARNG), .

(c) Developmental and Broadening Assignments: Any O5 FA40 assignment or any Basic Branch, 01A Branch Immaterial or 02A Combat Arms Branch Immaterial assignment with 3Y Additional Skill Identifier. Officers need to build on their knowledge and experiences. Look for opportunities at increasing levels of responsibility.

(d) Self Development: Advanced degree in Space-related field or technical discipline, Defense Strategy Course (DL), DAU online courses, Director for Space Forces (DS4) Course, Army Force Management School.

(e) Desired experience: Lieutenant Colonels should demonstrate the core competencies defined in paragraph 2. Complete an active duty CONUS tour or mobilization and deployment in an FA40 or a space operations related position.

(5) Colonel Development. There are currently no Colonel positions within RC FA 40, however, Colonels should seek out any Basic Branch, O1A or 3Y coded position. Examples include, but are not limited to the 100th Missile Defense Brigade Commander, Assistant Chief of Staff, National Guard Advisor position at USASMDC/ARSTRAT.

**7. Army Space Cadre - Skill Identifier/Additional Skill Identifier 3Y (SI/ASI 3Y)**

The Army's space cadre has served the Army well since its inception in 2006, and it has steadily grown to encompass over 4,400 billets, which includes nearly 300 active component FA40 space operations officers. As the core of the Army space cadre, FA40s provide in-depth expertise and experience to leverage space-related assets that deliver space capabilities to the Warfighter today as well as develop and integrate space capabilities for the future.

Positions are nominated for Army Space Cadre designation and when approved, annotated on Army authorization documents. Members of the Army Space Cadre serving in coded and/or approved billets receive space-related professional development training and experience. Army Space Cadre qualification levels are outlined in the Army Space Cadre Development Guide. Cadre members are eligible for recognition for attaining qualification at each level and are eligible for award of SI/ASI 3Y. The eligibility requirements for the SI/ASI 3Y can be found in DA PAM 611-21 and our ASKMS webpage. Additionally, criteria for the award of the Space Badge can also be found on our webpages.

Personnel developers/proponents are responsible for the life-cycle management functions of Army Space Cadre members within their respective career fields and functional areas. The ASPDO identifies, tracks and reports Army Space Cadre billets and personnel.

**Figure 1 FA 40 Officer Career Timeline**