



# Department of the Army ARMY SPACE TRAINING STRATEGY 2013

Warfighting Excellence for the 21<sup>st</sup> Century



Space Proponency ★ Institutional ★ Operational



Normal ★ Contested ★ Enhanced

# ARMY STRONG.





Comments regarding this document can be sent to USASMDC/ARSTRAT G31: Mr. John Abbatiello, [john.j.abbatiello2.ctr@mail.mil](mailto:john.j.abbatiello2.ctr@mail.mil), (719) 554-2178, Mr. George Stamper, [george.l.stamper.ctr@us.army.mil](mailto:george.l.stamper.ctr@us.army.mil), (719) 554-8841, or LTC Robert Mauro, [bob.maurio@us.army.mil](mailto:bob.maurio@us.army.mil), (719) 554-2156.

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**Foreword**

This strategy is directed by the Army Strategic Space Plan, 9 May 2011, signed by the Secretary of the Army and Army Chief of Staff. The Army Strategic Space Plan Implementation Memo, 14 November 2011, signed by the Under Secretary of the Army, tasked U.S. Army Training and Doctrine Command and U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, as the Army proponent for space, to analyze, design, develop, implement, and evaluate a training and leader development strategy to improve space knowledge across the Army. This strategy addresses key components of space training and education for Soldiers at every grade level and echelon, with the objective of improving our understanding and utilization of space capabilities, products, force enhancements, and protection that enable unified land operations, especially in contested operational environments. The strategy addresses institutional and operational domain space training for all Soldiers and the continued training and education of our Army's space professionals.

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## I. Purpose

- a. In accordance with the Army Strategic Space Plan and the Army Training Strategy, this Army Space Training Strategy establishes major goals, an overarching framework, and general principles to direct and guide Army training development professionals in the assessment and improvement of space education and training across the force. U.S. Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) will lead the coordination and implementation of this strategy by building and sustaining successful partnerships with HQ U.S. Forces Command (FORSCOM), HQ U.S. Army Training and Doctrine Command (TRADOC), Army Centers of Excellence (CoEs), and proponent schools.

The goals of this strategy are:

- Improve the Army's understanding and utilization of space capabilities, products, force enhancements, and protection that enable unified land operations
  - Improve operations in contested operational environments; enable Army leaders and Soldiers to initiate and maintain access to space capabilities, and counter attempts to deny, degrade, and disrupt that access and mitigate any adverse effects
  - Create **an integrated and seamless continuum of career-long space education and training** beginning at initial military training and continuing through unit-level collective training arenas and individual professional development programs
- b. The Space Training Triad, Figure 1, is the framework for achieving these goals. It incorporates the Army Training Strategy's institutional and operational training domains and adds USASMDC/ARSTRAT's space proponent mission. Coupled with the space operational environments it provides a graphical representation of the Army Space Training Strategy.

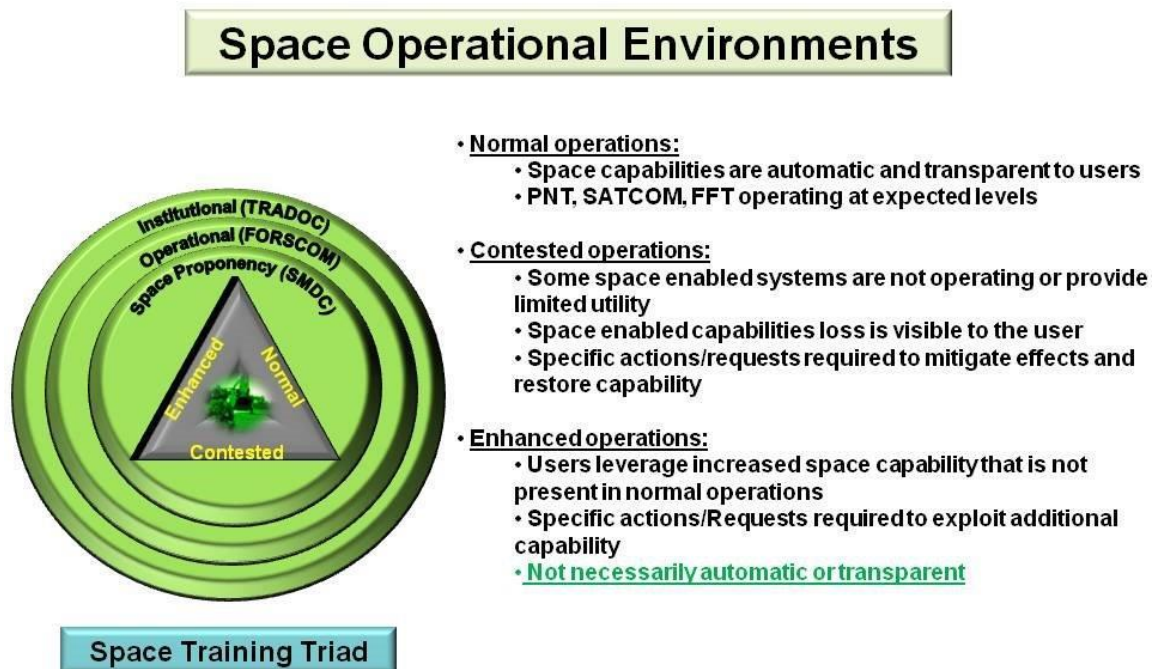
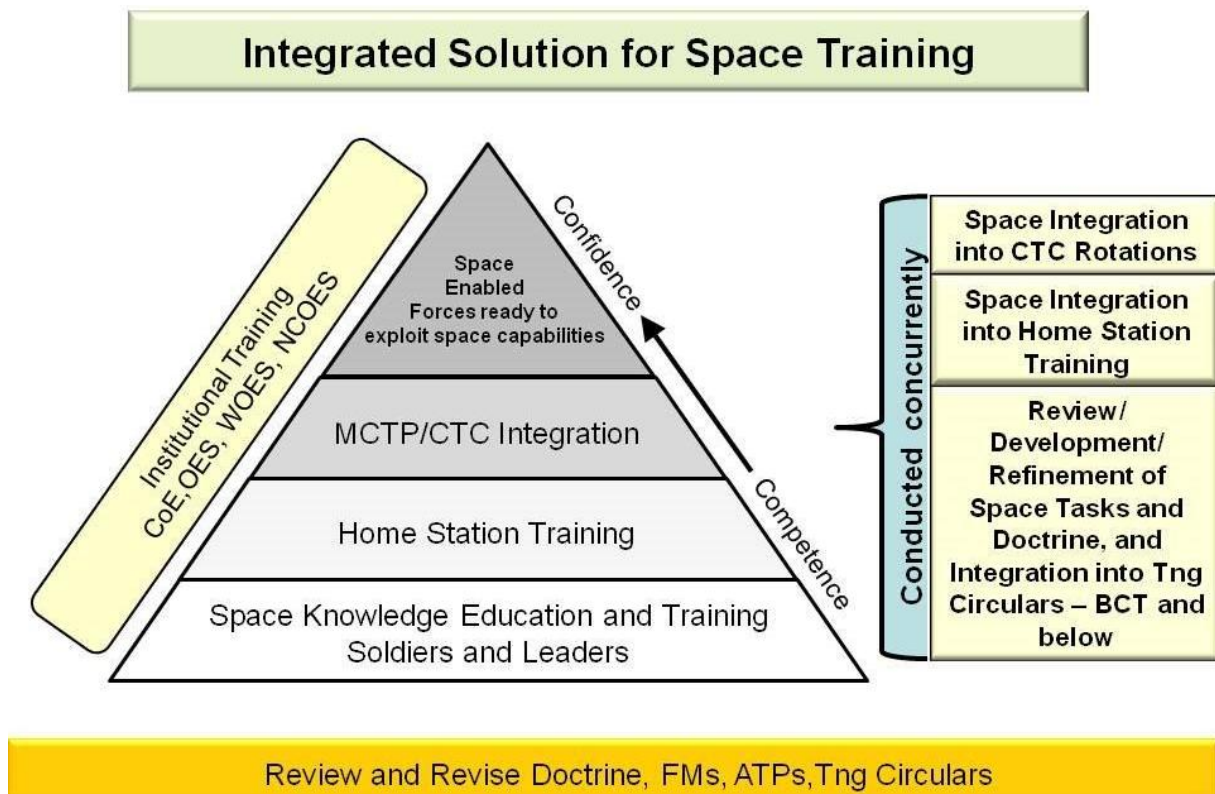


Figure 1. Space Training Triad

- c. This strategy and the resulting implementation plan will positively impact institutional and operational domain space training for all Soldiers at every grade level and echelon, and it will enhance the existing training and education of our Army’s space professionals. During implementation, Army training development professionals will validate and augment training where it exists and integrate new programs of instruction at the appropriate level where absent. Additionally, this strategy requires a Total Army (including Army Reserve and National Guard) approach and integration with cyberspace, electromagnetic spectrum, and electronic warfare operations training efforts to ensure success.
- d. The integrated solution for space training, Figure 2, is a more detailed depiction of the strategy to capture current efforts and to inform the creation of the implementation plan. Many tasks will be accomplished in parallel, synchronizing the activities of the Space Training Triad’s proponentcy, institutional, and operational domains.



**Figure 2. Integrated Solution for Space Training**

## II. Background—Space Capabilities Enabling Warfighting Functions

- a. Space-based capabilities are a critical part of our daily military, civil, and commercial activities as documented and articulated throughout National, Department of Defense (DOD) and Army policy and doctrine. The 2012 Defense Strategic Guidance places “Operate Effectively in Space” as one of the top defense mission areas, recognizing space capabilities as a critical component of an agile, responsive, tailorable force capable of responding to any

mission, anywhere, any time. The importance of space capabilities is captured in the Army Campaign Plan, Army Strategic Planning Guidance, and referenced throughout the Army Concept Framework beginning with the 2012 Army Capstone Concept, the Army Operational Concept, and the Army Functional Concepts.

- b. Our Army has evolved from a space-enabled force to a highly space-dependent force and is now one of the largest users of space-enabled capabilities within the DOD. Space-based capabilities are critical to the planning, preparation, and effective execution of unified land operations. To assist with this integration, our Space Forces, such as Army Space Support Teams and Space Support Elements, are regionally aligned and globally engaged to support Army and joint forces effectively and efficiently.
- c. Our Army depends on assured access to space-based force enhancements such as global positioning and friendly force tracking, communications, intelligence collection, weather and environmental monitoring, and missile warning. Army space capabilities are combat multipliers for all warfighting functions—mission command, movement and maneuver, intelligence, protection, fires, and sustainment—down to the lowest echelon for optimum mission execution. This critical dependence, however, is not reflected well in our education and training programs. While our Soldiers are adept at using space-enabled equipment, they are generally unaware of the means by which they receive space-based capabilities, and are therefore less able to counter degradations and less operationally effective than they should be. Our Army must be more than a passive consumer of space. We must transition from exposure to competence to confidence in employing space as an integral and transparent element in the conduct of combat operations. This requires improvement and better integration of Army space education and training programs.
- d. Moreover, our adversaries are aware of both our operational advantage and our extensive utilization of space-based capabilities. They increasingly seek to eliminate this advantage, to exploit our dependency on space capabilities, by degrading, disrupting, or denying our access to them. We must improve our combat effectiveness in contested operational environments.
- e. The Army Space White Paper published in April 2012 further defines Army space operations in the 2012-2030 timeframe. This comprehensive collection of Army space data identifies Army space needs and requirements across each warfighting function and provides a framework for Army space operations across the spectrum of operations. The White Paper was also designed to inform current and future Space Capabilities Based Assessments (CBAs).

### **III. The Army Strategic Space Plan Direction and Guidance**

- a. The Army Strategic Space Plan, signed by the Secretary of the Army and Army Chief of Staff, creates an overarching Army strategy to synchronize military service functions in support of Army missions. It simultaneously provides guidance and identifies functional lines of effort to integrate better the use of space capabilities and services in support of the Army mission. The Army Strategic Space Plan is shaped by the National Space Policy (2010), the National Security Space Strategy (2011), and the Army Space Policy. With regard to Army training activities, the ASSP directs the Army to:

- Develop a roadmap for integrating operational space environment concepts into Army, DOD, and multinational training venues
  - Ensure Army leader development inculcates space operations into institutional training at all levels
  - Ensure Army doctrine; publications; tactics, techniques, and procedures (TTP); and programs of instruction (POI) reflect degraded, denied or disrupted space environment mitigation strategies
  - Focus training on the development of plans, TTP, and mitigation strategies to prepare leaders and units to achieve operational adaptability in contested space operational environment conditions
  - Ensure units periodically train at the tactical level in operational environments where critical space capabilities are degraded, denied or disrupted; from home station to Combat Training Centers (CTC), Army Soldiers and units should maintain fundamental Soldier skills and collective tasks to overcome potential degraded space conditions
- b. Integrating space training and leader development in Army CoEs, proponent schools, home station training, exercises, and training centers reinforces the strategy to train as the Army fights by incorporating realistic impacts of using space-based capabilities through all operational environments, including degradation and disruption of those capabilities. This strategy will reinforce the Army's transition to regionally aligned forces characterized by operational adaptability, and helps transform our Army into an agile, responsive, tailorable force capable of responding to any mission, anytime, anywhere.

#### **IV. Army Space Proponency**

- a. USASMDC/ARSTRAT is the proponent for space, high altitude, and ground-based midcourse defense (GMD) activities (General Order 2006-37). USASMDC/ARSTRAT is responsible to:
- Provide Space training as outlined in AR 350-1 (Army Training and Leader Development) including: establishing training requirements; developing and conducting training programs to support proponency; and fulfilling other assigned responsibilities to FA40 (Space Operations Officer), Additional Skill Identifier 3Y (Space Enabler), GMD Operators, Joint Tactical Ground Station (JTAGS) Operators, Army Space Cadre, and other Army space and missile defense related fields
  - Support Joint space training and education programs
  - Support other TRADOC proponent schools with tailored space training and education as required

USASMDC/ARSTRAT provides training and education through its Space and Missile Defense Institution of Excellence, a TRADOC-accredited training program. Instruction includes resident courses, distributed learning courses, and mobile training teams. Courses range from foundation/basic instructional training such as the Army Space Cadre Basic Course to more advanced courses including the Space Operations Officer Qualification Course (SOOQC), and initial qualification training for the unique deployable equipment suites within the Army's 1st Space Brigade.

- b. The Army Space Personnel Development Office (ASPDO) is the Functional Area 40 (FA40) Program Executive Office and Developer. In accordance with AR 600-3, ASPDO has responsibility for the development and life cycle management of all FA40 personnel. This includes personnel attending advanced civil schooling and training with industry positions. In addition, the ASPDO ensures FA40s are programmed to attend the Space Operations Officer Qualification Course within one year of accession and the National Security Space Institute's Space 300 course, as necessary, based on individual career development path.
- c. ASPDO will explore personnel solutions where possible, though the use of USASMDC/ARSTRAT resourced mobile training teams will be the likely solution to many needs in the near and mid-term.

## **V. Institutional Domain Army Space Education, Training, and Leader Development**

- a. USASMDC/ARSTRAT Directorate of Training and Doctrine (DOTD) will lead the Army's efforts to conduct a review of Army institutional training materials and programs of instruction (POIs) in coordination with CoEs and proponent schools. CoEs and proponent schools will provide course documentation for collective review to help identify space knowledge, education, and training gaps. The focus will be on all mission areas, equipment, and Army systems enabled by space-based capabilities. The implementation of this strategy will apply the Army's institutional training development process, ADDIE (Analysis, Design, Development, Implementation, and Evaluation). A core tenet is to minimize impacts from increased training requirements levied upon Army schools. The intent is to improve training, not make it longer. Steps include:
  - Identify and analyze training for mission areas, equipment, or systems enabled by space-based capabilities (See Figure 3)
  - Identify space education and training gaps, including courses where space topics currently do not exist but should be incorporated
  - Recommend space education and training topics to integrate into current lesson materials
  - Assist CoEs and proponent school training developers in updating course materials, POIs, lesson plans, and presentation materials with relevant and current space training topics
  - Assist in preparing/training individual CoE and proponent school instructors to train space education and training topics (train the trainer)
  - Provide reach back support to space subject matter experts for CoEs and proponent schools when they require assistance on lesson material
  - Periodically review space education and training topics for relevance, currency, and accuracy
- b. TRADOC will ensure space education and training is incorporated and reinforced in doctrine and training publications.
- c. USASMDC/ARSTRAT will cultivate collaborative partnerships with CoEs and proponent schools and provide continual reach back support for space subject matter expertise and space training support across the Army. This model is already in place with several CoEs, proponents, and schools where, for the past decade, USASMDC/ARSTRAT DOTD has

worked with school training developers, instructors, and course managers to integrate relevant and current space topics into curriculum for all Officer Education System (OES), Warrant Officer Education System (WOES), Noncommissioned Officer Education System (NCOES), and functional training. These successful efforts at the Intelligence and Fires CoEs, Command and General Staff College, Intermediate Leader Education (ILE), Warrant Officer Career College, and the United States Military Academy have largely centered on branch-specific focused knowledge, education, and training. This current effort and strategy will build upon the lessons learned and success of these current efforts.

- d. To further assist in this effort, USASMDC/ARSTRAT will provide its assigned Space Operations Officers for temporary duty at select CoEs. Duties will include assisting the integration of space education and training into CoE training, and where appropriate, provide or assist with instruction of space training. Currently, Space Operations Officers are attached to the Fires, Mission Support, Maneuver, and Mission Command CoEs. USASMDC/ARSTRAT, based on availability, will continue to expand the use of Space Operations Officers to other CoEs in the future.
- e. The key elements of space training will include common knowledge, education, and training shared across all warfighting functions and focused, more detailed, knowledge, education, and training specific to each warfighting function. Initial efforts will address the common education and training existing in the OES, WOES, NCOES, Initial Military Training including the Basic Officer Leader Course (BOLC), Midgrade Learning Continuum (MLC), ILE, Army War College, U.S. Army Sergeants Major Academy, Warrant Officer Basic and Advanced Courses, Warrior Leader Course, Advanced Leader Course, and Structured Self Development distributed learning.
- f. Secondly, implementation efforts will examine areas where space training plays a unique, focused role in the mission areas for each warfighting function (See Figure 3). This effort will include tailored space topics aimed at individual courses and functional training conducted at CoEs and proponent schools: Pre Command Course Phase III; branch specific portions of BOLC, MLC, WOES, NCOES; and other CoE and MOS specific training for warfighting function mission areas and equipment enabled by space-based capabilities.
- g. Due to the structure and training audience of the Army OES, WOES, NCOES, and Initial Military Training, common space knowledge training in courses will remain largely unclassified, addressing classified topics only where needed and possible. The secondary effort involving focused training can delve into more of the classified areas of space training topics.

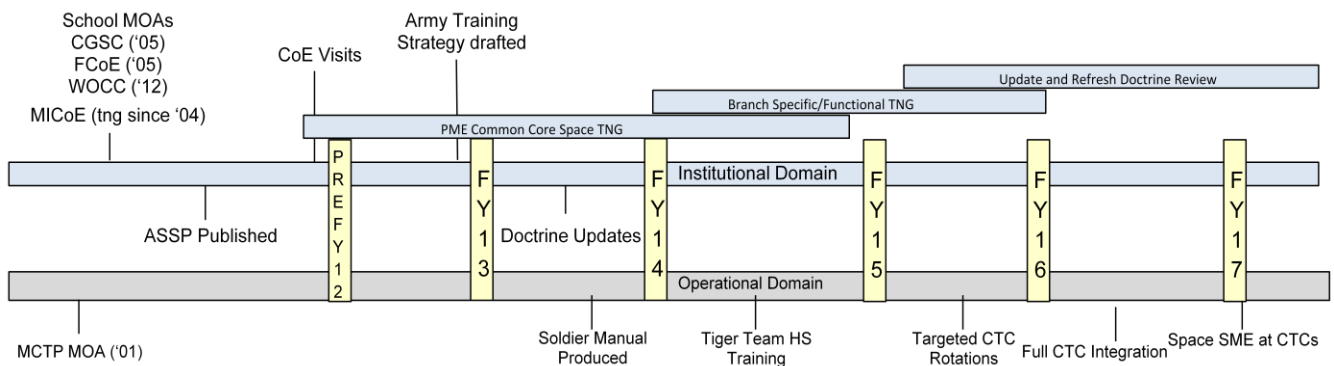
Warfighting Function						
Functional Lines of Effort	Movement & Maneuver	Fires	Intelligence	Mission Command	Protection	Sustainment
SATCOM	Beyond Line of Sight (BLOS) / Non-Line of Sight (NLOS)	BLOS/ NLOS	Reach Back/ Reach Fwd	BLOS/ NLOS Reach Back	BLOS/ NLOS	BLOS/ NLOS
Position, Navigation Timing (PNT)	Joint Friendly Force Tracking (JFFT), GPS	Precision NLOS Fires, JFFT, GPS	JFFT, GPS	JFFT, GPS	JFFT, GPS	JFFT In-transit Visibility, GPS
ISR	Geospatial Information Imagery Terrain	BDA Terrain	GEOINT, MASINT SIGINT Terrain	Geospatial Information Imagery Terrain	Geospatial Information Imagery Terrain	Geospatial Information Imagery Terrain
Missile Warning	Predicted Impact Point	Missile Launch Cueing	Overhead Persistent Infrared (OPIR) / Operational Environment Awareness	Operational Environment Awareness	Theater Ballistic Missile Warning (TBM ) Warning	
Weather, Terrain, & Environmental Monitoring	Operational Planning, Imagery for Mobility	Operational Planning	Weather	Weather	Operational Planning	Operational Planning
Space Control	Offensive / Defensive	Offensive / Defensive	Offensive / Defensive/ Situational Awareness	Offensive / Defensive/ Situational Awareness	Offensive / Defensive	Offensive / Defensive

**Figure 3. Space-Based Capability Support to Warfighting Functions**

## VI. Operational Domain Army Space Training

- a. As specified in the Army Training Strategy, space education and training must continue beyond the institutional training domain and be reinforced across the operational training domain. At the lowest echelons, individual Soldiers, units, and organizations train, integrate, execute, and reinforce collective training events putting institutional knowledge into practice. Additionally, Department of Defense Directive 3100.10, *Space Policy* (2012), directs that space missions and capabilities be integrated into all wargames, simulations, scenario development, experiments, and exercises. This training, as depicted in the Space Training Triad (Figure 1), must develop the Army’s ability to:
  - Employ effectively normal space-provided capabilities
  - Compensate for and fight through the temporary loss of our own space capabilities and restore those capabilities as quickly as possible
  - Plan for, request, and employ enhanced space capabilities
  
- b. The Army has benefitted substantially from the integration of FA40 Space Operations Officers assigned to the staffs at division, corps, and Army Service Component Command (ASCC) level. These officers have facilitated the awareness, understanding, and utilization of space at their respective staff organizations. Integration of space capabilities into combatant command exercises, division and corps-level Warfighter Exercises (WFXs) and Mission Rehearsal Exercises (MRXs) have resulted in greater effectiveness of both space operations and combat operations. This strategy seeks to employ these officers to even greater levels of effectiveness in the future.
  
- c. The integration of space operations at the brigade level and below, however, has not been as effective. The challenge for the Army, and the space community, is to expand and integrate space training to increase understanding, knowledge, and skills down to the lowest echelons and among Soldiers themselves. To meet this challenge, the Army must:
  - Review and refine required space tasks, TTP, and doctrine at the brigade and below
  - Integrate space into home station Training Support Plans (TSPs)
  - Integrate effective and comprehensive space training into the Mission Command Training Program (MCTP) and CTC rotations

Figure 4, below, establishes an initial timeline for implementation:



**Figure 4. Initial Timeline for Space Training Strategy Implementation**



- d. Mindful of current and future resource constraints and drawing upon work and analysis already completed, USASMDC/ARSTRAT, in conjunction with FORSCOM, will lead operational domain efforts on space education and training by developing a plan to integrate realistic and relevant space capabilities and vulnerabilities into home station training, exercises, and CTC rotations. This operational training progressively moves Soldiers and units from exposure to competence to confidence by leveraging space-enabled capabilities and operating effectively in contested environments. USASMDC/ARSTRAT will develop and support effective space training that provides standardized individual and home station training by leveraging operational unit Space Support Elements and space cadre/3Y personnel as subject matter experts. In operational domain training, the goal is for units to prioritize space training in unit collective home station training events, laying the foundation for unit success during exercises and CTC rotations, and ultimately to exploit space capabilities as combat multipliers in all operational environments.
- e. In support of this effort USASMDC/ARSTRAT will:
- Implement a Total Army approach to space training
  - Build on long-standing participation in Joint and Army exercises to continue the vital tasks of integrating critical space capabilities such as Army Space Support Teams (ARSST)s, Commercial Imagery Teams (CITs), and JTAGS in support of ASCC, corps, and division-level staffs and Space Support Elements
  - Develop space training support plans that prioritize and provide live, realistic conditions rather than administrative injects
  - Conduct close coordination with FORSCOM to develop and integrate space training programs of instruction into home station training
  - Work with FORSCOM to ensure that space-enabled and space-contested capabilities are integrated into home station training within its corps and division headquarters and at brigades and below
  - Leverage Space Support Elements or FA40s resident in operational units to facilitate focused, tailorable support across warfighting functions and proficiency levels
  - Led by ASPDO, work with each CTC to identify a permanent billet for long-term FA40 assignment to implement and support current and future space training integration
  - Provide reach back and mobile training team support for home station training and CTC rotations as required
  - Collect, analyze, collate, and distribute standard training that supports operations in contested operational environments
  - Promote integration of simulations that allow operational commanders and their staffs to develop and exercise TTP that allow them to fully exploit space capabilities, observe the effects of degraded space, and then build and practice TTP to keep them in the fight in those degraded conditions
  - In coordination with ARCYBER, integrate with cyberspace domain training as design processes determine is necessary
- f. The Army is currently pursuing multiple coordinated initiatives to further identify “where,” “what,” and “how” to incorporate and integrate unit-level collective space training within the operational training domain. TRADOC/ARCIC, assisted by USASMDC/ARSTRAT, leads a

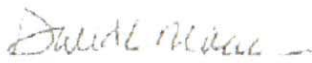
Deputy Secretary of Defense tasking to identify and evaluate materiel and non-materiel shortfalls for U.S. forces operating in a degraded space environment, culminating with a degraded space DOTMLPF review. The results of the review will assist leaders in implementing select institutional, individual, and collective TTP, and a long-term strategy to develop and apply a DOTMLPF mitigation solution. The DA G-3/5/7 sponsored Tactical Space Protection Study (TSPS) examines the space-based dependencies at the Brigade Combat Team (BCT) to identify the impacts of space-based capability degradation on tactical operations. The TSPS informs an ongoing Space CBA and a Mission Command CBA to identify specific space-related gaps associated with the warfighting functions. The results of these analyses, as well as those from other CBAs, will be incorporated into the space training implementation plan as they become available.

- g. The USASMDC/ARSTRAT Future Warfare Center continues to support Joint and Army experimentation and wargaming events including the Army Space 2020 Seminar Series to examine how new capabilities and formations enhance space support to the Army of 2020 and beyond. Additionally, USASMDC/ARSTRAT is supporting unit-level collective training for corps and division MRXs and will continue with the reintegration of Army MCTP WFXs.
- h. To meet the challenge of integrating space focused training and events into home station training, leaders at all levels must ensure space related tasks and events are incorporated into home station training objectives, leverage the expertise and proximity of division Space Support Elements, and provide space subject matter expert teams to brigades to enable and facilitate space training at home station. Many unit and collective training venues exist across the Joint and Army communities. This strategy specifically addresses the critical need to integrate space into these training opportunities, whether part of unit home station training, unit exercises, MCTP WFXs, wargames, or CTCs. Prior to CTC rotations, for example, units must identify space training requirements early in the planning cycle and incorporate them into brigade training objectives.
- i. The implementation of this training strategy will also support CTCs by assisting in the development, fielding, and utilization of space-disrupting capabilities to create a realistic space-contested operational environment that units must counter. Additionally, USASMDC/ARSTRAT subject matter experts and mobile training teams will support CTCs with the integration of space-enabled and space-contested conditions into training scenarios until Space Operations Officers can be assigned.
- j. These operational training efforts must parallel and complement the institutional training conducted at OES, WOES, NCOES, and the Centers of Excellence. The end result will be knowledgeable, confident, capable, space-enabled forces ready to exploit fully space capabilities, and function effectively when those capabilities are challenged.

## VII. Conclusion

To the lowest echelon in the Army and within each warfighting function, we are enabled by and increasingly reliant upon space-based capabilities. Our ability to plan, communicate, maneuver, fight, protect, and sustain our 21<sup>st</sup> century forces is inextricably linked to space. This Army Space Training Strategy outlines a plan to match this reliance to our education, training, and leadership development programs. The improved Army space training that this strategy envisions will ensure Soldiers are properly educated and trained to understand the capabilities, products, enhancements, and protection that space systems provide, as well as their limitations, in the execution of unified land operations in support of combatant commands. It is vital that all Army elements identified in this strategy, particularly USASMDC/ARSTRAT, TRADOC, and FORSCOM, work together and be accountable in order to forge collaborative relationships and harness the collective energy needed to effectively and efficiently meet the directives of the Secretary of the Army and Army Chief of Staff as outlined in the Army Strategic Space Plan and Army doctrine.

The end state will be an integrated and seamless continuum of career-long space education and training beginning at initial military training and continuing through unit-level collective training arenas and individual professional development programs. Army leaders and Soldiers will be able to initiate and maintain access to space capabilities and mitigate attempts to deny, degrade, and disrupt that access. The space education and training fostered in institutional training must be put into practice and reinforced in operational training domains to ensure the Army is a decisive force of action trained and ready to Prevent, Shape, and Win.




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DAVID L. MANN  
Lieutenant General, US Army  
Commanding  
Space and Missile Defense  
Command/Army Forces  
Strategic Command




---

DAVID D. HALVERSON  
Lieutenant General, US Army  
Deputy Commanding General  
US Army Training and Doctrine  
Command




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JAMES L. HUGGINS JR.  
Lieutenant General, US Army  
Deputy Chief of Staff, G-3/5/7  
Headquarters, Department of the  
Army

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