

**RECORD VERSION**

**STATEMENT BY**

**LIEUTENANT GENERAL LARRY J. DODGEN, USA**

**COMMANDING GENERAL,  
U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND  
AND  
U.S. ARMY FORCES STRATEGIC COMMAND**

**BEFORE THE**

**COMMITTEE ON ARMED SERVICES  
STRATEGIC FORCES SUBCOMMITTEE  
UNITED STATES HOUSE OF REPRESENTATIVES**

**FIRST SESSION, 109<sup>TH</sup> CONGRESS**

**MARCH 9, 2005**

**NOT FOR PUBLICATION  
UNTIL RELEASED BY THE  
COMMITTEE ON ARMED SERVICES**

**Lieutenant General Larry J. Dodgen, USA  
Commanding General  
U.S. Army Space and Missile Defense Command  
and  
U.S. Army Forces Strategic Command**

**Introduction**

Mr. Chairman, Congressman Reyes and distinguished Members of the Committee, it is my distinct honor to appear before you today to discuss the Army's use of space as a key enabler to accomplish its missions and objectives both now and into the era of the Future Force. I express my sincere appreciation to this Committee for your continuing support of the many endeavors of our Army and particularly today's topic—the Army's continued efforts and progress in space. The Army is a full member of the Joint Team and we appreciate the opportunity to be included in the ranks with Secretary Teets, General Lord, Vice Admiral Sestack and Brigadier General Benes as joint advocates of the space planning process and continued advances in our Nation's ability to operate in space. The Army is committed to working closely with the other Services, the Executive Agent for Space, the Joint Staff, and the Office of the Secretary of Defense as space is absolutely critical to Army transformation. The Army will increasingly rely on space-based capabilities that must be responsive, timely, and assured to joint warfighters.

**Space Support—A Core Warfighting Competency**

During the past decade, the global security environment has changed a great deal. Today, many nation-states are no longer constrained by spheres of

influence as in the Cold War. The dispersion of power and widespread instability combined with the direct threat to our homeland and worldwide interests, present new challenges for the Army, the Joint community, and our Nation. The enemies we face today are not necessarily a nation-state. They can also be a terrorist cell, able to strike almost anywhere and nearly any time. Our response to these challenges continues to be seen in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). These operations continue to reinforce the critical importance of space capabilities to the Army, the other Defense services and agencies, and the joint warfighter.

As recently stated by our Secretary of Defense, “space and information are not only enablers, but core warfighting competencies”. Space support to military operations is not a recent development. For more than 30 years, the Army has tapped the unparalleled potential offered by space-based systems to the modern battlefield. In the 1970’s, the Army exploited the tactical applicability of national space systems at the corps level to improve our battlefield intelligence capabilities. The Tactical Exploitation of National Capabilities (TENCAP) program is a longstanding success story of the Army leveraging the intelligence community space investments for tactical military benefits. Throughout the early years, exploitation of space-based assets fell to TENCAP and communication communities while national systems remained focused on strategic issues. Although Army TENCAP made tremendous strides in leveraging national systems for the tactical user, it was not until Operation Desert Storm (ODS) that key leadership realized the extraordinary value of space-based, beyond line-of-

sight intelligence and satellite communications (SATCOM), as a combat multiplier. The use of the Global Positioning System, near-real-time missile warning, tactical weather information, unclassified imagery, and long haul communication satellites truly brought space directly to the battlefield. Today, as we have for the past 30 years, the Army continues to strive to normalize space-based capabilities into our traditional warfighting concepts to achieve seamless support to combat operations.

Since ODS, space –based capabilities have become more entwined in the fabric of Army warfighting. Ongoing combat operations in Afghanistan and Iraq are demonstrating the operational importance of space to the joint warfighter. Making space relevant to tactical forces has gained primary emphasis along with providing and expediting the delivery of space-based capabilities, products, and services to warfighters. Space systems extend the range and capabilities of communications and enhance situational awareness beyond any terrestrial capability. It literally allows us to “do more with less” as we better use our forces in modular formations to cover larger areas than in the past. This is especially critical in asymmetric formations such as Iraq. Space systems continue to provide better intelligence and synchronization in combat operations by enabling collection of new types of data and information. In ODS, command echelons of division and above were the only ones that could access space-based TENCAP and INSCOM capabilities. Now we can provide support to our joint warfighters at the tactical level. Army space support teams now have the tactical capability to leverage satellite communications, commercial imagery, and enhanced

situational awareness in support of deployed forces. Direct links now provide timely and assured data from national agencies and ground stations to the battalion level. Future work is needed to ensure these links are survivable in tomorrow's operational environment.

As our reliance on responsive, timely and assured access to space-based capabilities increases, so does our vulnerability to attack and disruption. The ground segments of our space systems are especially vulnerable to a conventional attack. It is absolutely essential that both space-based and ground segment capabilities are protected against our future adversaries' attempts to attack these capabilities and to deny us our technological advantage. Space situational awareness is an important step to protecting our space assets from attack and in denying space-based products to our adversaries.

The global growth of commercial space systems provides state and non-state actors access to products and services that begin to approach those of our own. These potential adversaries are seeking to lessen the advantages we enjoy by accessing space-based communications and imagery offered by third-party entities. In order to retain our advantage, we may choose to deny an adversary access to these space-based services.

### **The Army's Organizational Space Structure and Key Operational Support**

Within our Army, the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) is the specified proponent for space. In addition to the Title 10 Army responsibilities,

this Command also serves as the Army Service Component Command to the U.S. Strategic Command (USSTRATCOM). Tasked as the service space proponent and working in coordination with other members of the joint community, USASMDC/ARSTRAT is at the forefront--supplying vital space capabilities to our joint warfighters. In addition to delivering and integrating space products and trained professionals into joint warfighter operations, USASMDC/ARSTRAT also conducts an extensive variety of space mission related research and development activities. This capability is one complement to the organic TENCAP equipped Army intelligence and tactical signal force structures.

Soldiers and civilians serving with USASMDC/ARSTRAT's 1<sup>st</sup> Space Brigade (Provisional), the Army's first and only space brigade, provide access to products and services that are absolutely essential in all phases of combat operations. The brigade's three battalions—the 1<sup>st</sup> Satellite Control Battalion, the 1<sup>st</sup> Space Battalion, and the 193<sup>rd</sup> Space Support Battalion, Colorado Army National Guard, support combatant commanders by providing satellite communications and force enhancements. During the ongoing OEF and OIF campaigns, the USASMDC/ARSTRAT's Army Space Support Teams (ARSSTs) supported the Coalition Force Land Component Commander, an Army Corps and Division, a Marine Expeditionary Force, and the Coalition Provisional Authority. The ARSSTs are on-the-ground space experts, pulling down key and critical commercial imagery, forecasting the impact of space weather on satellite communications, position, navigation and timing, and radio intercepts, and

providing responsive space support to their units. This responsiveness and on-the-ground expertise were invaluable to combatant commanders and their planning staffs. TENCAP and INSCOM have increased their support from space-based assets by providing enhanced systems and more direct interface to the tactical level.

The USASMDC/ARSTRAT Operations Center, located in Colorado Springs, Colorado, supports space experts deployed throughout the operational force and reduces our forward deployed footprint. This center maintains constant situational awareness of deployed elements, continuously responds to requests for information, and provides the essential reach-back system of connectivity with technical subject matter experts. Regional Satellite Communications Support Centers and Defense Satellite Communications Systems Operations Centers located in several locations in the U.S. and overseas, provide reliable and responsive SATCOM support. In addition to ensuring space-based force enhancement, USASMDC/ARSTRAT also provides space-based ballistic missile early warning and missile defense support from within the theater or region. The 1<sup>st</sup> Space Brigade's Joint Tactical Ground Stations Detachments, operated by Army and Navy personnel, monitor enemy missile launch activity and other infrared events of interest and share the information with members of the air and missile defense and operational communities. Presently, an array of space-based and missile defense resources including forward-deployed Soldiers, civilians, and equipment, continue to support our joint warfighters in Afghanistan

and Iraq. Space capabilities have become and will continue to be inextricably linked to warfighting.

### **The Army's Space Successes**

As I appear before this distinguished committee today, Army professionals are using the ultimate high ground of space to provide products and services that are significantly more capable, abundant, and tightly integrated into all phases of combat operations. I would like to highlight a few of the Army's fielded operational systems and personnel that are providing essential space support to the combatant commanders and warfighters.

*Joint Blue Force Situational Awareness (JBFSA).* Space capabilities save lives by providing critical linkages within the current and future JBFSA architectures. Situational awareness is particularly vital given the challenges of conducting operations in urban areas, as is currently the case in Iraq. The Army is the lead service for JBFSA and has the greatest number of soldiers and systems to track on the battlefield. JBFSA assets, such as the Force XXI Battle Command Brigade and Below, the Movement Tracking System, and the Grenadier Beyond Line-of-Sight Reporting and Tracking System, help deliver timely situational awareness and have gained broad endorsements from tactical units for helping to prevent friendly fire incidents. The Army is currently devoting considerable effort to fully incorporate the role of blue force tracking (BFT) in identifying friendly forces during combat. We have also successfully demonstrated the capability to integrate the various JBSFA systems, space-



based and line-of-sight, to develop a common operating picture into one enterprise system. This achievement, especially important until an integrated set of JBFSA systems is developed, is a meaningful step to support enhanced situational awareness.

*Mission Management Center (MMC).* The MMC facilitates the dissemination of near-real-time space-based data in support of JBFSA. The USASMDC/ARSTRAT MMC, located in Colorado Springs, serves as the critical link between warfighters, national agencies, and a variety of dissemination architectures.

*Spectral Operations Resource Center (SORC).* The quality of image resolution and speed of its delivery has improved substantially over the years. During ODS, commercial resolution was approximately ten meters and filling requests took days or weeks. During OIF, USASMDC's SORC (Forward) was able to provide its customers with downlinked commercial imagery of approximately one-meter resolution within hours of receiving a request. Manned by both Army and Air Force personnel, the SORC (Forward) facilitated the downlink of commercial imagery, providing the joint warfighter detailed spectral products to make crucial operational decisions.

*Tactical Exploitation System (TES).* The Army's TES as a forerunner to the Distributed Common Ground Station-Army (DCGS-A) provides tactical and joint warfighters the ability to receive, process, and exploit signals and imagery intelligence data from selected national, theater, and tactical sensors. Using TES, the time required to gain access to theater and national imagery has been

substantially reduced. As a result, an integrated multi-source intelligence picture from “space-to-mud” is organic to all corps and divisions and is moving to the brigade level, with the DCGS-A which enables combatant commanders to gain improved situational awareness and enhance their ability to shape the battlefield. Elements of the TES are deployed in OIF and OEF in the Stryker brigades and selected reserve units called to active duty.

*USASMDC/ARSTRAT’s Reagan Test Site (RTS)/U.S. Army Kwajalein Atoll (USAKA).* RTS is a unique contributor to the national space control mission through its space situational awareness data. RTS is one of only four DOD radar sites that provide unique capabilities to monitor objects in deep space.

Additionally, RTS is the sole contributor of radar metrics on approximately one-third of the satellites in the geosynchronous belt. The collection of timely and accurate metric data is critical to the space control mission. The RTS maintains a vigilant 15-minute recall, 24 hours a day, for providing critical radar metric and imagery data on new foreign launches from Asia. Due to its geographic location, RTS has first visibility on most launches from Asia.

These systems, assets, and their operators as well as other initiatives leveraging U.S. space capabilities are key contributors in both holding and improving the asymmetric advantages that exploiting space brings to the joint fight.

## **Realizing the Potential of Space—People**

Of course, without well-trained and motivated Army professionals, space superiority cannot be realized. As I stated earlier, the successful conclusion of the first phases of OIF was supported by well trained space professionals serving in Army units around the globe who used the superior technology at their disposal to provide vital and timely operational support to combatant commanders.

As outlined before this Committee in July 2004, combat operations are no longer limited to land, sea and air. It is clear that we will increasingly rely on the “high ground” of space as an essential capabilities integrator. Today, the Army considers space to be a vertical extension of the battlefield essential to joint warfighting. Technology in the hands of capable professionals, who are trained to harvest the potential of space, has superseded the necessity to mass against an enemy force. Instead, space-based capabilities enable us to mass the combat power of our forces at the time and place of our choosing. As a result, an understanding of space systems and capabilities is becoming an increasingly important part of the professional Soldier’s skill set across all Army mission areas.

The Army recognized this need in 1998 when it created Functional Area (FA) 40—Space Operations within our commissioned officer corps. USASMDC/ARSTRAT is the Army’s personnel proponent for FA 40 officers. There are more than 150 FA 40s in the Army today, serving in 29 different Army and Joint commands and DoD organizations across tactical, operational, and strategic echelons. These space professionals are today’s Army space cadre

and form the core for the future cadre. They are trained, educated, and gaining experience every day. They are performing remarkably as indicated by continuous praise from our warfighting commanders.

Promotion rates for space cadre lieutenant colonels and colonels during fiscal year 2004 are above the Army average. FA 40s are encouraged to complete advanced degrees and 70 percent of our officers have done so—60 percent of the advanced degrees are in space related fields of study. We currently have 14 FA 40s that have graduated from space programs at the Naval Post Graduate School (NPS) or the Air Force Institute of Technology. Today, seven FA 40s are enrolled at NPS. Once sufficiently trained through the 11-week Army Space Officer's Operations course, FA 40 officers are responsible for formulating policy, developing operational concepts, developing technologies, and planning, evaluating and implementing the tactics and techniques for the operational use of space systems.

The Army's Space Cadre is supporting the fight in both OEF and OIF. Twenty-six FA 40s have deployed to the two theaters with six currently serving from the Division to Theater command level. In addition to the outstanding support they provide today, the Army is realizing future benefits as we integrate and institutionalize the lessons our FA 40s learn regarding how to best integrate space for tactical commanders.

As our Army transforms, our space concepts and organizations are transforming as well, requiring significant increases in authorizations for FA 40s in our tactical echelons. Over the past few years, we have developed organic

Army Space Support Elements (SSEs) which we will be embedding within Army Divisions/Units of Employment (UEX). The 3<sup>rd</sup> Infantry Division was our first Division to transform and stood up the initial SSE in June 2004. Over the next few years, all ten Divisions (UEX) are being embedded with SSEs as the Army continues to transform. The Army Space Cadre will be the means to bring dedicated space expertise to UEX Divisions. In total, the Army could be adding up to 80 FA 40 authorizations as a result of the ongoing Army transformation.

### **Space FORMAL Update**

In July 2004, before this distinguished Committee, I informed you that the Army was commencing Phase I of IV in the Cadre Force Management Analysis (FORMAL) which will define how other officers, our non-commissioned officer and enlisted force, and Army civilians will be addressed as part of our future Space Cadre. FORMAL completion is scheduled for August 2005 and we have progressed to Phase III, which is scheduled for completion this May. To recap, Phase I developed the Army unique Space Cadre definitions. Phase II identified 1,546 potential Army Space Cadre positions based on the definition developed during Phase I. During Phase III, we will refine the cadre and develop a comprehensive Army policy that incorporates the five personnel life cycle functions envisioned for the Space Cadre. The five life cycle functions are accessing, training, professional development, structuring, and sustaining. During the final phase, necessary combat enhancement elements such as

doctrine, organizational structure, training, and leadership development will be finalized and implemented.

For both present and future members of the Space Cadre, formal education and training continues to evolve. Students are trained in the planning of space operations, analyzing friendly and enemy force space capabilities and limitations, and determining the impact of space weather on satellites; communications; position, navigation and timing; and intelligence, surveillance, and reconnaissance in support of a joint force commander. The demand for training brought the Air Force and Army together to offer better training opportunities to the Space Cadre of both services.

### **Future Army Space Requirements**

Now and in the future, the Army's primary interest in space will be the role that space serves as an enabler of 21<sup>st</sup> century land warfare. Continued technological advances and new capabilities in space systems will enable the information dominance essential to the transformed Army land force envisioned for the future. The task ahead is to hold and improve the asymmetrical advantages space capabilities bring to the joint fight. The most important space-based capabilities the Army needs to leverage to maintain dominance with respect to ground operations relate to intelligence, reconnaissance and surveillance, satellite communications, JBFSA, weather, terrain and environmental monitoring, position, navigation and timing, missile warning, and

space control. These capabilities enhance the paradigm of full spectrum dominance that is the cornerstone of future joint warfighting.

To meet these vital requirements, it is essential that space systems, currently planned for fielding under the purview of the DOD Executive Agent for Space, become reality. The Army needs enabling technologies which enhance situational awareness off the ramp, allow us to look deep, and communicate rich situational awareness while on the move. Planned space based assets such as Space Radar and Transformational Satellite communication systems, if developed to be tactically relevant, will revolutionize how we use space in support of ground operations. The Army needs a space capability designed and developed from the onset that significantly improves the situational awareness, lethality, and survivability of the tactical warfighter by providing responsive, timely, and assured persistent surveillance and communications. These systems must be dynamically taskable and have the ability to provide actionable intelligence to the warfighter at multiple locations.

Tactically responsive capabilities with persistent surveillance and enhanced protected wideband communications will improve the situational awareness, lethality, survivability, and operations tempo of the Army's Future Force. The Army continues to work closely with the DOD Executive Agent for Space to ensure transformational capabilities such as theater downlink and dynamic tasking in support of the theater warfighter are fulfilled.

## **Conclusion**

The Army knows the value that space capabilities bring to the battlefield—Space is the ultimate high ground. In future conflicts, the Army envisions that as an interdependent member of the space community, we will rely on space products and services provided by DOD, other government agencies, our allies and coalition partners, and commercial space systems to enhance situational awareness and joint battle command. We will also contribute Army capabilities, technologies, and trained and ready personnel to this joint effort. The resulting fully integrated joint capability will provide depth, persistence, and responsive capabilities for commanders at the strategic, operational, and tactical levels. There is no doubt that space systems and well-trained and experienced space professionals give us an information environment advantage over our adversaries. While we have done much thus far, we must continue to increase and improve our space capabilities to serve the needs of the future.

Thank you for the opportunity to appear before the Committee and for your interest and support of our Army's space programs and their current and future requirements.