

NOT FOR PUBLICATION  
UNTIL RELEASED BY THE  
HOUSE ARMED SERVICES  
COMMITTEE STRATEGIC  
FORCES SUBCOMMITTEE

**STATEMENT OF**

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**COMMANDER, AIR FORCE SPACE COMMAND**

**BEFORE THE**

**HOUSE ARMED SERVICES COMMITTEE**

**STRATEGIC FORCES SUBCOMMITTEE**

**UNITED STATES HOUSE OF REPRESENTATIVES**

**ON**

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## INTRODUCTION

Madam Chairwoman, Representative Everett and distinguished members of the subcommittee, it is a great privilege and an honor to appear before you today representing the nearly 40,000 men and women of Air Force Space Command (AFSPC). Thank you for your interest in and continued support of our Air Force's space capabilities. Your leadership has focused resources towards maintaining the asymmetric advantage that our Airmen deliver to, through and from space to the joint fight. I am honored to share this stage with Dr. Ron Sega, our Under Secretary of the Air Force and Dr. Don Kerr, Director of the NRO, two great leaders I'm proud to join on our National Security Space team.

Today, I am pleased to report our United States Air Force's space capabilities have never been more impressive. Each day Air Force Space Command Airmen demonstrate they are the Nation's experts in operating our Air Force's space systems by providing critical support to every one of our Combatant Commanders in the form of Missile Warning; Missile Defense; Space Surveillance; Position, Navigation and Timing (PNT); Environmental Monitoring; Strategic Deterrence; Satellite Communications, Space Launch and Counterspace capabilities. As we reflect on the contributions the Airmen in Air Force Space Command delivered over the past year, it is clear we are now operating in an era where space provides an unparalleled advantage for our armed forces.

This unmatched advantage that enables our joint, interagency and coalition operations must be protected. For that reason, our Air Force has laid out a strategy to support recapitalization efforts, while assuming some risk in our operations,

maintenance and personnel accounts. Just as our Chief of Staff, General Moseley, testified, “Air Forces fail when they do not correct slowly declining relative capabilities.” Our space capabilities are too integral to the fight to let our forces down...or let an adversary eclipse our advantage. We realize the importance of investing today to get what we need for tomorrow.

This 2007 posture statement articulates our Nation’s critical reliance on space capabilities. At the birth of our Command 25 years ago, space capabilities were in their infancy. Today, Combatant Commanders depend on integrated space effects to successfully execute their missions. To keep our radar locked on meeting those growing demands, our Command developed a vision and a set of four focused priorities through which we will achieve future success.

## **VISION AND PRIORITIES**

The foundation of our Command was built by pioneers like the “Father of the Air Force Space,” General “Bennie” Schriever and the first Commander of Air Force Space Command, General James Hartinger. The long line of great leaders up through my predecessor, General (Ret) Lance W. Lord, have all contributed to the success of our Nation’s military space program today. Learning from our heritage, but with our eyes on the horizon, we crafted a vision that recognizes the important contributions of the past while also paving our path to future success. Our vision is to become the:

**Acknowledged Experts and Leaders in Fielding, Launching and Employing  
Space Power for the 21<sup>st</sup> Century**

The space effects we provide to the Combatant Commanders are second-to-none, due in large part to the bank of knowledge and spirit of innovation that keeps AFSPC on the cusp of the technological bow wave. Our Nation's and our allies' armed forces, our private citizens and millions of people around the globe, benefit today from capabilities provided by AFSPC. Every thing we do in this command is focused on enabling the joint fight, to win the war we are in today, and just as importantly, to insure we are prepared to win decisively in the future. Our active duty, Guard, Reserve, government service and contractor team are the best in their fields, and we want to leave no doubt in anyone's mind: when you have a question about America's military space and missile capabilities, the nearly 40,000 professionals of Air Force Space Command hold the answer. To help make this vision a reality, we have crafted four strategic priorities:

- 1. Preserve and Expand our Ability to Deliver Space Effects to the Joint Fight**
- 2. Provide Safe and Secure Strategic Deterrence**
- 3. Develop, Field and Sustain Dominant Space Capabilities on Time and on Cost**
- 4. Attract, Develop and Retain People with the Expertise Necessary to Meet the Challenges of the Future**

We have our sights set on these priorities. They serve to guide our focus in the way we operate today and to underpin the investments we need to make for our future.

**PRESERVE AND EXPAND OUR ABILITY TO DELIVER  
SPACE EFFECTS TO THE JOINT FIGHT**

To achieve our first priority, we must do two things. First, we must preserve our ability to deliver space effects in today's fight. This means we must properly organize our forces, train them for success, and equip them with the tools necessary to protect our asymmetric advantage in space. Second, we must expand the capabilities we provide by always looking for ways to more efficiently operate our current systems while investing in the systems we will need tomorrow.

**Preserve our Advantage in Space**

Preserving our advantage in space is a prerequisite for everything else we do. To achieve this, we first require the ability to effectively surveil the space domain with the goal of answering, in as near to real-time as possible, the questions of "who, what, when, where, how and why?" that are so vitally important to the commander responsible for operations in any domain. We refer to this as Space Situational Awareness. Breaking this down further we arrive at the key ingredients necessary to achieve the Space Situational Awareness we need. First, we must establish the right organizational command construct. Second, it is vital for us to maintain and field the correct mix of space surveillance capabilities along with the ability to rapidly fuse, analyze and display the data we collect in a fashion that will inform timely decision-making by our commanders. Next, we must be able to effectively command and control our forces. Finally, our ability to preserve our advantage in space will only succeed if we have

assured access to the domain through highly dependable and responsive launch vehicles. In 2006, Air Force Space Command made progress on all of these areas.

We solidified our support to United States Strategic Command (USSTRATCOM) with their assignment of Major General Willie Shelton, our Fourteenth Air Force Commander, as USSTRATCOM's Joint Functional Component Commander for Space. That one organizational change, coupled with the establishment of the Joint Space Operations Center (JSpOC) at Vandenberg AFB, CA, aligned warfighter functional responsibilities with Air Force space capabilities and expertise. This is a good news story in the leveraging of Air Force people and assets to lead in the joint space environment. Ultimately, this change produced unity of command in delivering joint space capabilities for the Combatant Commanders.

In the past year, this organizational construct was central to the delivery of over 18,000 mission essential products to regional Combatant Commanders supporting Operations IRAQI FREEDOM, ENDURING FREEDOM and NOBLE EAGLE. In CENTCOM alone, in the Combined Air and Space Operations Center (CAOC) in Southwest Asia, the Director of Space Forces received direct support from Maj Gen Shelton's JSpOC and the Airmen under his command operating the Defense Support Program satellite constellation. Together, they evaluated more than 2,100 infrared signatures in the CENTCOM AOR, enhancing battlespace awareness and force protection efforts for our Nation's deployed Soldiers, Sailors, Airmen and Marines.

Today, Air Force Space Command's worldwide space tracking and surveillance network provides positional data on over 15,000 space objects. Our expert team of orbital analysts used these data for satellite collision avoidance with space debris as

well as with other satellites. This analysis, in turn, helped safeguard over \$50B in US space assets which are vital to our Armed Forces, as well as interagency, coalition partners and the American economy. However, recent events like the Chinese ASAT test, which added over 1,000 new pieces of debris to our previous count of 14,000, only serve to highlight the need for us to further enhance our ability to surveil the space domain.

Today, our surveillance, analysis and data-sharing capabilities do not adequately support our future needs to rapidly identify and understand the threats to our space systems. Given that limitation, we are working hard to make the most of every dollar spent in this area to optimize our surveillance function and give the Commander, USSTRATCOM a better understanding of our space operating picture. These efforts include working in close cooperation with the Missile Defense Agency to upgrade our Early Warning Radars, examining alternatives for funding upgrades to a vital Space Surveillance Network radar at Eglin AFB, FL, and sustaining the Mid-course Space Experiment (MSX) satellite, our sole space-based space surveillance system. On the heels of MSX are the Space-Based Space Surveillance (SBSS) Block 10 (launching in FY08) and Block 20 satellites which will provide critical enhancements to our need to surveil objects beyond Low Earth Orbit. Finally, we have begun a clean sheet look at requirements for how we should best surveil the space domain in the future.

The need for Space Situational Awareness (SSA) increases exponentially as our joint forces become more dependent on space. With our Nation's dependency on our space capabilities, in the future it will be even more essential for us to definitively identify the cause of any interruption in the delivery of our space-provided or space-

enabled capabilities. Just as importantly, we must also be able to attribute who or what caused any interruption. Meeting this requirement puts our space situational awareness needs on par with the air, land and sea domains. In every one of these domains, our Combatant Commanders can obtain a solid picture of the threat, allowing them to produce, in a timely manner, a wide range of response actions. This is even more critical in the space arena where the response time can be significantly shorter for commanders to make decisions which will impact the lives of thousands of our Soldiers, Sailors, Airmen and Marines. Furthermore, these threats to our space capabilities do not just exist in the space domain. We are staying equally focused on the other two critical elements of any space system; our ground stations and the communications links between the satellite, the ground station and the user. Without high fidelity and timely Space Situational Awareness, our national leaders will not have the key information needed to determine the range of available political, economic or military options to deter or counter future threats. Providing the Commander, JFCC-SPACE with the Space Situational Awareness he requires to effectively plan, operate and fight is our top concern.

To address this concern we are driving towards several significant milestones. In FY08, we will create an Integrated Space Situational Awareness program. Part of this effort entails creating a Space High Accuracy Catalog and replacing our 1991 vintage Space Defense Operations Computer with a net-centric, services-oriented architecture that will provide the Combatant Commanders and national users with actionable information on launches, satellite breakups, maneuvering objects and reentries. Additionally, the Rapid Attack Identification and Reporting System (RAIDRS) Block 20



program will better integrate and fuse space data (space intelligence, surveillance and space environmental monitoring) enabling JFCC-SPACE to better protect and defend critical space assets and respond to new and emerging threats, whether hostile or environmental. Each of these programs will help us meet our Space Situational Awareness needs.

While Space Situational Awareness is the foundation for all operations, Space Command and Control (C2) is what links the JFCC-SPACE to the joint fight. Commanders in every domain require a basic C2 capability over their forces, and the same holds true in space. Effective Command and Control allows us to deliver flexible, agile and responsive effects to the battlespace, be it land, sea or air. To accomplish this, we are developing a suite of enhanced command and control tools to synchronize space and air effects and improve support to joint/combined forces and national partners. For example, we are working hard to develop robust space C2 applications enabling the Joint Functional Component Commander for Space to rapidly process and satisfy space support requests from the regional Combatant Commanders. Major General Shelton and his team are doing an outstanding job, but to reach their maximum capability they simply must have state of the art equipment on-par with our other Air and Space Operations Centers. The tools currently under development will give the JFCC-SPACE a better understanding of the space environment and permit continuous collaboration with joint, national and coalition partners and make us more agile and responsive to the complex environment in which our Soldiers, Sailors, Airmen and Marines operate.

The final element of preserving our ability to deliver space effects to the joint fight is safely and reliably delivering payloads into orbit. The most critical portion of any spacecraft's life is launch. Today, due to the hard work of our men and women of the Space and Missile Systems Center, 14<sup>th</sup> Air Force, our two launch wings and a second-to-none contractor team, we stand at 50 successful national security payload launches in a row and have a 100 percent record of success with our new Evolved Expendable Launch Vehicle (EELV) class of vehicles (15 for 15 operational launches). In total, 8 NASA, 7 DoD, 1 commercial and 6 Space Test Program (STP) launches lifted off from our East and West Coast Launch and Test Ranges in 2006. Our most recent launch on 8 March 2007 successfully carried the STP-1 mission with six individual spacecraft on board. The impressive list of firsts for this mission include: the first launch of an Air Force payload on an Atlas V, the first Air Force mission with six unique spacecraft, the first dedicated EELV mission for the STP and the first Atlas V to carry multiple satellites to two distinctly different low-Earth orbits. This highly successful STP mission carried satellites from the Defense Advanced Research Projects Agency, Los Alamos National Laboratory, the U.S. Naval Academy and the U.S. Air Force Academy. In 2007, we will continue this pattern of excellence, continuing to prove nobody knows Spacelift better than Air Force Space Command.

As we work towards preserving our ability to deliver space effects we also remain cognizant of the fact there is no downtime for us, as our mission and training continue 24/7, 365 days a year. Each day we maintain a laser-sharp focus on expanding our ability to deliver space effects to our Armed Forces, Nation, allies and coalition partners.

## **Expanding our Ability to Deliver Space Effects**

Expanding our ability to deliver space effects to the joint fight entails both sustaining and enhancing our on-orbit position, navigation and timing; communications, environmental monitoring, and missile warning constellations, as well as investing in new capabilities and systems to increase our responsiveness to warfighter needs.

Our current on-orbit constellations are second-to-none, including our flagship, the Global Positioning System (GPS). GPS continues to perform as the world's premier space-based positioning, navigation and timing system. GPS capabilities are integrated into nearly all facets of US military operations and give the American and coalition warfighter an unparalleled advantage. GPS is integral to numerous battlefield innovations, including the Small Diameter Bomb, the Guided Multiple Launch Rocket System and Joint Precision Air Drop System. We have also delivered nearly 100,000 advanced handheld GPS receivers to the field. US and coalition warfighters navigating with GPS across trackless deserts and employing GPS-guided munitions are testimony to the awesome effect GPS has on precision attack. Additionally, the increased accuracy of GPS-guided munitions has saved lives and reduced collateral damage.

GPS also plays a major role supporting day-to-day business activities within our global commercial economy. Our satellites enable accurate directions to any mapped location, safe and efficient air travel, navigable oceans and waterways, as well as more efficient use of maritime resources, emergency and rescue services and precise timing data for communication systems, electrical power grids, and financial networks. GPS has literally become a household name.

Efforts are well underway to sustain and modernize this global space-based navigation system, to ensure we meet the future needs of military and civilian users. We now have the first three of eight Modernized (IIR-M) GPS satellites on-orbit, a significant step towards offering new signals for military and civil users. First, the military signal (M-code) with enhanced encryption, will be transmitted on two distinct frequencies to improve anti-jam capabilities. Second, an additional civil signal will provide improved accuracy for civil, commercial, and scientific users. The next series of advanced GPS satellites (IIF), scheduled to launch in 2008, will have an extended design life of 12 years, faster processors with more memory, a new civil signal on a third frequency (L5) and increased power to reduce vulnerability to signal jamming. We are also making GPS easier to operate and maintain, by upgrading the GPS ground station control system from a mainframe system that is over 20 years old and becoming cumbersome to operate and repair, to a distributed architecture.

We just released the Request for Proposal (RFP) on the next generation GPS ground segment and look forward to releasing the GPS III space segment RFP, bringing us an improved space and ground segment intended to assure reliable and secure delivery of enhanced position, navigation, and timing signals. The GPS III Block A satellites will transmit a significantly higher-powered military signal. Other features will be a new fourth civil signal (interoperable with Europe's Galileo and Japan's Quasi-Zenith Satellite System). We are also developing next generation military GPS user equipment that will take advantage of the modernized military signal.

We have demonstrated time and time again that GPS is the world standard for PNT. No other system comes close to delivering the proven performance of the GPS constellation.

The demand for satellite communication continues to grow by leaps and bounds. Our fully operational Milstar and Defense Satellite Communications System (DSCS) constellations are the Combatant Commanders' workhorses. The increased capabilities of the Command and Control-Consolidated ground system are paying huge dividends. Engineering and contractor teams continue developing innovative tactics, techniques and procedures for maximizing bandwidth and increasing satellite life span.

Yet another capability available to the warfighter is the AFSPC-led Global Broadcast System (GBS). Via fixed and mobile injection points we provide world-wide, high-capacity, one-way transmission of classified and unclassified high-speed multimedia communications and information flow for on-the-move or garrisoned forces. GBS is used to transmit everything from near real-time UAV sensor feeds to critical intelligence data. One Army intelligence team providing support to Coalition-Joint Task Force 76 used GBS to download between 80 and 120 images of Afghanistan every day. It is akin to our very own satellite broadcast network and the reviews are phenomenal. Clearly, the joint warfighter appreciates and depends on the capabilities we provide from and through space.

Looking ahead, satellite communication (SATCOM) will continue to be an area of focus for us. In 2007, we will launch the first Wideband Global SATCOM (WGS) satellite. We are excited about this launch because this one satellite will have more bandwidth capacity than the entire Defense Satellite Communications System (DSCS)

constellation (9 satellites) currently on orbit. Adding satellites 2 and 3, both fully built and undergoing testing and integration, will further improve warfighter SATCOM capability.

The Advanced Extremely High Frequency (AEHF) Satellite Communications System is on schedule for launch in early 2008. Brigadier General Ellen Pawlikowski's joint service team at the Space and Missile Systems Center is completing the first satellite, with the second satellite scheduled for testing in July 2007 and the third satellite experiencing on-time progress as well.

Development of the Transformational Satellite Communications System (TSAT) is a high priority. Technology risk reduction efforts on the laser communications and the next generation processor router are going well. As Lt Gen Frank Klotz testified to last year, the TSAT constellation will enable "communications on the move" and will transform the Services' net-centric architectures including the Army's Future Combat System, the Navy's ForceNet, the Marine Corps' X-Net concept and the Air Force's Global Information Grid initiative. TSAT is an integral part of our Armed Force's future concept of military operations. Today, an 8"X10" image takes 2 minutes to transmit over Milstar. With TSAT, the same image will be transmitted in less than 1 second. A UAV image, which takes up to 12 minutes to send via Milstar, will be sent in less than 1 second with TSAT. We are working towards a System Design Review in April 2007 and ultimately a space segment contract award at the end of this year.

Despite this progress, MILSATCOM is an area for concern. We have reached the point in time where further schedule slips potentially affect both protected communications on the battlefield and the command and control of our strategic forces.

It is critical for us to successfully launch every satellite in the pipeline and to meet all current program timelines. Any significant reduction in resources, an AEHF or WGS launch failure or another slip to the TSAT program, could create gaps in our MILSATCOM coverage—something our Combatant Commanders cannot afford.

Another space capability entrusted to us is environmental monitoring. We launched our newest weather satellite, DMSP-17, in November 2006. DMSP-17 replaced a satellite that had been operational since 1995. What is amazing about that old satellite is that it had a design life of 3 years. Eleven years later it was still delivering critical support to the joint fight. Our dedicated professionals managed to extend the replaced satellite's lifespan by almost a decade! This is a true testament to our AFSPC/contactor design, operations and sustainment teams.

Many of our space systems have far-reaching capabilities that provide information for strategic and tactical users simultaneously. A legacy system from the Cold War, our Defense Support Program has shed its singular role in the Strategic Deterrent mission to become a critical ingredient in the Combatant Commanders' toolkit as a theater asset. With our pending final DSP launch, this constellation has exceeded all original expectations. This year we began a new era with the launch and on-orbit operational testing of the first asset of the next-generation of warning systems - the Space Based Infrared System (SBIRS). To date, SBIRs testing has exceeded all expectations and we are confident that the SBIRS constellation will be as revolutionary to missile warning as GPS has been to PNT.

It has been more than 5 years since an Air Force satellite suffered a major capability failure before reaching its intended design life. Every system in our portfolio

has exceeded its potential and provided more robust utility to the Combatant Commanders through improved and upgraded features as well as through innovations in the operation of each constellation. However, new threats and new battlefield requirements dictate our continued vigilance in preserving and expanding our ability to deliver space effects to the joint fight both today and in the future.

Along these lines, we are currently analyzing ways to develop space systems to deliver the following capabilities: 1) could rapidly augment current surveillance, reconnaissance, and communication platforms in response to the needs of a Combatant Commander; 2) could rapidly replace space assets disabled by attack or natural phenomenon, and 3) could rapidly deploy systems to support our Space Situational Awareness needs. Dubbed Operationally Responsive Space (ORS), this concept is centered on the rapid development, building, launch and activation of new and likely smaller satellite systems.

We have begun to experiment with smaller satellites with the launch of TacSat-2 on 16 December 2006. Once testing is complete, the spacecraft will be used in a series of joint demonstrations collecting data to make a recommendation of military utility. TacSat-2 will participate in Exercises TALISMAN SABER 07, EMPIRE CHALLENGE 07, VALIANT SHIELD and ULCHI FOCUS LENS 07. TacSat-2 along with TacSat-1, 3 and 4 will allow us to answer key questions on what capabilities we should focus on in the future to meet augmentation, replenishment or surveillance needs. Ultimately, any ORS system that requires the launch of a new satellite will require leadership of the integrated effort, from the booster, to the bus, to the payload, to C2 and data delivery



architectures. The Air Force and Air Force Space Command are uniquely populated with the expertise across these disciplines to develop and field these capabilities.

Providing leadership over these programs is a key responsibility of AFSPC and we are pleased to have the opportunity to currently lead vital aspects of ORS to include requirements validation, TacSat Military Utility Assessments and ORS Analysis of Alternatives (AoA) efforts. The planned standup of the ORS Office at Kirtland AFB, NM is a giant step forward in supporting future operational satellite development and procurement for this emerging mission area. The connection with our Space Development and Test Wing is also critical in the early years of the program to capitalize on best practices in emerging technologies.

### **PROVIDE SAFE AND SECURE STRATEGIC DETERRENCE**

Of all the missions with which we are entrusted, Strategic Deterrence has the least margin for error. Thankfully, this Nation has the men and women of 20<sup>th</sup> Air Force and the leadership of Major General Tom Deppe to rely on.

Providing safe and secure strategic deterrence depends on the modernization of our current force and the infrastructure which supports it. To this end we have embarked on an aggressive Minuteman III modernization program. These efforts encompass modernizing every stage of the missile, the launch silos, and the command and control centers to meet our deterrence mission beyond 2025. Additionally, we remain actively engaged in efforts to replace an aging, but vital, UH-1N helicopter fleet to support ICBM security requirements.

### **MM III Modernization**

Our AF team is modernizing the Minuteman III missile from nose to tail. The first Safety Enhanced Reentry Vehicle modification kit was installed in October 2006 enabling use of the MK 21 reentry vehicle from the deactivated Peacekeeper missile on our Minuteman III missiles. More importantly, this modern warhead provides USSTRATCOM planners with increased targeting flexibility and enhanced safety.

In the year ahead, we will continue modernization of all of our Minuteman III missiles with a sustainable schedule calling for Propulsion Replacement Program (PRP) upgrades for 96 missiles. The PRP upgrade replaces aging motors and propellant as well as environmentally unsafe materials and components. To date the program has completed 52 percent of its production run with 312 deployed in the field. In 2007, 73 Minuteman IIIs will complete Guidance Replacement Program upgrades which will replace some of the 1960s generation electronics in the guidance system, further extending the missile's operational life. This program has completed 69 percent of its production run and 442 are deployed in the field. Additionally, we have fielded more than 65 Propulsion System Rocket Engine (PSRE) upgrades across the fleet, accounting for 13 percent of the total production run. These PSRE upgrades replace components originally produced in the 1970s with a 10-year design life. Finally, we are excited about the improvements built into the future Reliable Replacement Warhead (RRW). This replacement warhead will make use of the best security technology available and allow for a credible nuclear deterrent with the smallest nuclear weapons

stockpile needed for national security purposes. While upgrades to the missile/warheads are critical, it is only one piece in a larger system.

### **Modernization of Launch Facilities**

At our launch silos we remain focused squarely on improving security. Our ICBM Security Modernization Program contains three synergistic elements. First, concrete enhancements have been completed at all but one of our ICBM squadrons, ensuring our Nation's nuclear arsenal is safe and secure. The second security upgrade (the fast-rising B-plug) enables security forces to rapidly close an open missile silo in the case of an impending security breach. We began the first installation of this technology at Minot AFB, ND, in February. Finally, 20AF is capitalizing on technology by deploying a Remote Visual Assessment (RVA) capability to enhance physical security. RVA employs a remote video camera to provide situational awareness at unmanned launch silos, enabling our Security Forces to tailor and accelerate response force actions to deny unauthorized access. In addition, this upgrade allows us to more efficiently use our most precious but limited resource, our Airmen.

### **Building on Previous Accomplishments**

In addition to the upgrades in progress, we are proud to have completed (last year) the four-year deployment of the \$114M Rapid Execution and Combat Targeting Service Life Extension Program, the heart of our ICBM command and control element. This command and control upgrade provides increased responsiveness and gives planners additional flexibility to meet rapidly changing world situations and evolving mission requirements. When combined with the previously completed Minuteman

Minimum Essential Emergency Communications Network modernization of our communications links, we have achieved a tremendous leap forward in technology and operational C2 throughout 20<sup>th</sup> Air Force.

Equally impressive is the work we have accomplished, in partnership with the Wyoming National Guard, at the Nuclear and Space Security Tactics Training Center at Camp Guernsey, WY. Not only are we providing our security force warriors, maintainers and operators a much needed place to exercise their combat skills but we are also preparing Airmen for deployment with our Air Expeditionary Forces.

When we factor in all the upgrades to the Minuteman III weapon system we will have effectively reset the force to continue to provide unmatched deterrence through the third decade of the 21<sup>st</sup> century.

### **UH-1N Helicopter Replacement**

Even with all these upgrades, we can not lose sight of one final and critical piece of the ICBM puzzle, our UH-1N helicopter fleet. This aircraft is our fastest and only way of rapidly responding to potential missile field security breaches. The Air Force is examining alternatives for replacement helicopters and we are working within the budget process to secure replacements. As we replace equipment that is war-battered from overseas deployments, it is important to recognize that our aged UH-1N fleet is flying as hard as ever, right here within our own borders.

**DEVELOP, FIELD AND SUSTAIN DOMINANT SPACE CAPABILITIES**

**ON TIME AND ON COST**

In the last year, we made great strides in acquisition and ushered in a new era with the opening of the Space and Missile Systems Center's Schriever Space Complex. Under the leadership of Lieutenant General Mike Hamel, we continue to make progress in developing, fielding and sustaining dominant space capabilities on time and on cost. Through a dynamic acquisition strategy, the sustainment of current systems, and the development of future dominant space capabilities AFSPC will achieve our goal of becoming the acquisition model for Department of Defense.

### **Acquisition Strategy**

The cornerstone of our acquisition strategy lies in our "back to basics" approach to systems development, acquisition and sustainment. We understand just how important space capabilities are to the warfighter and we know the acquisition recipe that achieves results. Our comprehensive plan to get "back to basics" is already showing results in putting programs back on track and leading to a new generation of transformation and innovation based on solid systems engineering.

We continue our commitment to risk mitigation across the entire space portfolio. As Dr. Sega has outlined, one of the key ingredients is our "walk before you run" strategy. Past acquisition failures can be traced to over-optimistic estimates of the maturity of key technologies and misunderstanding the challenges associated with system complexity. Our block development approach changes that, enabling us to gradually introduce new technology as it matures.

Holding our leaders accountable is the key to the future success of this strategy. We are entrusting our top acquisition leaders with the authority they deserve but, at the

same time, demanding results. We cut down functional stovepipes and are horizontally integrating key processes across programs by better reorganizing functions like engineering, program management, finance, logistics, developmental planning and contracting. We are excited about the year ahead, as we continue “turning the corner” in space acquisition. We have always developed, fielded and sustained dominant space capabilities and we are confident we will go beyond that by producing tomorrow’s space capabilities on time and on cost.

### **Develop, Field and Sustain Dominant Space Capabilities**

With our strategy in place we turn our attention to developing, fielding and sustaining dominant space capabilities. Our new and upgraded systems have already begun delivering transformational results. The capabilities we enable for the Combatant Commanders will only increase as these systems gain traction and momentum. Later this year, we expect to begin payload assembly, integration and testing on the first Space-Based Space Surveillance Sensor. Also vital to the joint warfighter, our Advanced Extremely High Frequency satellite program is back on track to deliver positive results in the near future. As previously stated, the first Wideband Global SATCOM will lift off this year, providing an exponential leap in bandwidth availability. Meeting these, as well as all of our program commitments, will help ensure the asymmetric advantage of space is available to future generations of joint warfighters.

One of these absolutely critical programs is SBIRS. With the launch of the SBIRS HEO-1 payload, we demonstrated the SBIRS program is on the path to success. Not only is HEO-1 on-orbit, but as stated earlier, its sensor is exceeding performance

specifications and providing truly revolutionary results. This is good news for the upcoming SBIRS GEO satellite, which shares common sensors. The first GEO satellite is undergoing integration testing for its launch in 2008. As we close out a proud chapter in our history with the last DSP launch, we will open a new chapter with the delivery of the first Space-Based Infrared System geosynchronous payload (GEO-1) for integration with its space vehicle this year.

Our GPS constellation remains healthy with 30 satellites on-orbit, but increased dependence on this system requires us to push ahead with developing and fielding improvements. In 2007, we project the completion of thermal vacuum testing on the newest block of satellite, the GPS IIF. Again, this advanced satellite will provide tremendous advances in our PNT capability, making GPS more jam-resistant on the battlefield while delivering increased accuracy for civil customers.

As was previously mentioned, in 2006 we launched a Defense Meteorological Satellite Program (DMSP) weather satellite. After a picture-perfect launch, the space vehicle was checked out and placed into operational service in record time, another true success story in developing, fielding and sustaining dominant space capabilities.

While we sustain and modernize our on-orbit assets, we also remain committed to updating an aging infrastructure. The EELV's unprecedented record of initial successes literally translates into millions of dollars in savings. We continue to aim for 100% mission success with the new United Launch Alliance (ULA) initiative while implementing the "Buy 3" contracts

Another aging piece of infrastructure, the Air Force Satellite Control Network (AFSCN), had its last major modernization in the late 1980s with the installation of 286

computers. The current system is heavily impacted by obsolete, vanishing parts and reduced numbers of vendors. Currently, AFSPC is undergoing a cost-effective modernization of the AFSCN legacy system with off-the-shelf control and status equipment and new antennas that allow a more integrated and interoperable satellite network to support US government satellite operations.

The AFSPC launch and test ranges are modernizing infrastructure to upgrade radar, telemetry and data systems for reliable and responsive access to space through our Range Standardization and Automation Program. We are taking steps toward space-based range through the use of GPS to track boosters and efforts to explore future flight termination and data relay technologies.

We are also partnering with the Missile Defense Agency (MDA) to upgrade and field missile defense capabilities and enhance the defense of our homeland and our allies against ballistic missile threats. In 2007, we will enhance capabilities at two Upgraded Early Warning Radar sites: first at Royal Air Force Fylingdales, United Kingdom, followed by Beale Air Force Base, California. The next upgrade is in coordination for Thule Air Base, Greenland, with an anticipated completion in FY10. SBIRS has already established a fully-integrated Missile Defense capability and continues to improve burn-out tracking and projected impact prediction performance. Our efforts to achieve these capabilities are conducted on a non-impact basis to our primary mission of strategic missile warning supporting our Nuclear Command and Control System as directed in National Security Presidential Directive (NSPD)-28. Additionally, we are providing significant support to many MDA flight tests and the



necessary security for the operational ground-based interceptors at Vandenberg AFB, CA.

We have shown we can get “back to basics” with our space acquisition programs, and in the near future we will be providing incredible new capabilities that will accompany every single Soldier, Sailor, Airman or Marine into battle. We have a tremendous responsibility to support our warfighters, and it’s through the amazing people of Air Force Space Command that I know we will succeed.

**ATTRACT, DEVELOP AND RETAIN PEOPLE WITH THE EXPERTISE NECESSARY  
TO MEET THE CHALLENGES OF THE FUTURE**

Our fourth and final strategic priority is to attract, develop and retain people with the expertise necessary to meet the challenges of the future. Our Air Force Chief of Staff recognized this when he made the development of world-class professionals one of his top priorities.

One of our greatest future challenges is recruiting people equipped with the right skills to succeed in a much more dynamic and technologically challenging environment. Accordingly, we have placed increased emphasis on sustaining on-going force development and voluntary off-duty degree programs at each of our bases to facilitate career-long education opportunities. In 2006, using AF tuition assistance, Airmen in AFSPC completed 22,000 college-level enrollments, earning 66,000 advanced education credits, resulting in 1049 job enhancing degrees (associates to masters). Re-investing in our human capital like this runs in parallel with recapitalization of our infrastructure. In the upcoming year, we will also increase the focus on recruiting

cadets from the Air Force Academy and the Nation's other top colleges and universities into space-related career fields within the Air Force.

Our requirement for a highly educated and technical workforce places additional demands on our professional development efforts. We must strengthen the technical foundation of our people, and match those with technical degrees against specific job requirements. The National Security Space Institute, addressed this demand by expanding education and training opportunities, further cementing itself as the go-to place for space education. In the past 18 months, we've introduced the Space Integration Course (Space 300), offering it twelve times in FY07. We also offered 19 Space Application (Space 200) Courses, and continue to meet expanding needs by developing a Distance Learning version of our Space 200 curriculum which will reach a broader group of students including our traditional Reservists. In addition, 2 NAVOPS Advanced Courses and the first-ever Missile Warning and Defense Advanced Course were taught. In anticipation of modern warfighter demands, we are developing a SATCOM Advanced Course which will have its initial offerings within 12 months. We are poised to continue to offer NAVOPS and SATCOM Advanced Courses and to answer requests for a Space Superiority Advanced Course and a Rendezvous/Proximity Operations course as funds are made available. The surging demand for these courses has been remarkable, to include interest from many of our allies. Through all of these efforts we already see the benefit of our education programs with the outstanding job our Airmen are doing both from CONUS and in theater.

One Airman who has taken full advantage of the many educational opportunities is Major Toby Doran, a graduate of Space 100, the USAF Space Weapons Instructor

Course and the Air Force Institute of technology (degree in space operations). In 2006, Major Doran deployed from AFSPC (as part of a Joint Space Support Team, Camp Fallujah, Iraq) and helped identify a required modification in the Army's Guided Multiple Launch Rocket System (GMLRS) weapon system. The problem was the GLMRS system used old GPS data under certain conditions. Major Doran ascertained that if stale ephemeris data was passed to a rocket prior to launch, it could cause an error in the rocket's impact point. Major Doran, in coordination with our GPS Operations Center (GPSOC) and Director of Space Forces, engineered procedures to ensure soldiers employing GLMRS in Iraq and Afghanistan received immediate notification of GPS outages from the JSpOC and GPSOC. This is just one example of many where AFSPC Airmen used their education, technical training and operational experience to take responsibility for the combat effects we provide through space.

To maintain our momentum, we began an extensive effort to make it easier to earn advanced technical degrees. At our ICBM Launch Control Centers, we have fielded something we call Netlink. For the first time ever, our Missile Combat Crews are able to access the internet and complete distance learning courses while on-alert, underground. We also developed a pilot, five-course academic certificate program with the Space Education Consortium through the University of Colorado at Colorado Springs to further increase the technical knowledge of our space professionals. This consortium is comprised of 10 universities and 2 institutes throughout the United States, including an international member in Strasbourg, France. In fact, the first class of the certificate program, Systems Engineering, met in January 2007 with 20 AFSPC Airmen (officers and enlisted) providing glowing feedback about the program. Most of the

course work is completed via distance learning, and the members of this initial cadre will complete a space certificate program they can apply to a Master's degree in:

- Space Operations (*Master of Engineering*),
- Systems Engineering (*Master of Engineering*),
- Engineering Management (*Master of Engineering*),
- Business Administration (*with space emphasis*).

With your support, we can expand this pilot program to make it available to all of our Airmen. The Air Force Institute of Technology and Naval Postgraduate School have also developed dynamic new certificate and degree programs aimed at the development of our Airmen. We are excited about these programs, and the additional opportunities they provide for building the next generation of space leaders. Ultimately, our young men and women will hold the keys to the future success of our Nation's "invisible force." My promise in the year ahead is to further codify our space professional development efforts and produce a more robust and challenging program for our Nation's space professionals. In addition, we will continue to work across service boundaries and with the National Reconnaissance Office to get the right person with the right expertise in the right position to lead. We know that ultimately our most important job is to grow the future air and space leaders who will step into our shoes and make the next 25 years even better than the last.

## **CONCLUSION**

This year our Air Force celebrates its 60<sup>th</sup> anniversary and AFSPC turns 25 years old. The force we built over the last 25 years is truly remarkable and the investments we made together are paying off on the battlefield. However, success in the next 25

years will require the same level of commitment. There is no doubt in our minds that our ability to operate in space is critical to our Nation, and so we must improve our investment in areas like Space Situational Awareness and C2.

Every Soldier, Sailor, Airman and Marine benefits from the capabilities provided by our space forces. Recapitalizing our space systems will ensure we have even better capabilities for our forces in the future. While you cannot see or touch many of our space capabilities, the Combatant Commanders know they are there and rely heavily upon them. The effects we deliver via the space domain will no doubt be an integral part of every future military operation. The men and women of Air Force Space Command are your “go to” experts for space, and with Congress’ support, we will deliver what this Nation needs to ensure the asymmetric advantage our space forces bring to the fight today will be even more dominant in the future.