



AIR FORCE GLOBAL STRIKE COMMAND
UNITED STATES AIR FORCE

AIR FORCE STRATEGIC MISSILES:
AIR FORCE GLOBAL STRIKE COMMAND PERSPECTIVE

by

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A Presentation to the American Association of Aeronautics and Astronautics
Strategic and Tactical Missile Systems Conference
Monterey, California
January 21, 2010

INTRODUCTION

Thank you for the very kind introduction. It's a pleasure to be with you today in this biennial and highly-regarded American Institute for Aeronautics and Astronautics Strategic and Tactical Missile Systems conference.

As the program indicated, I've been invited to discuss Air Force Strategic Missiles. I'm going to do precisely that from the perspective of the Air Force's newest major Command, Air Force Global Strike Command. The Command was designed to clearly align responsibility for the Nation's intercontinental ballistic missiles and its long-range, nuclear-capable bombers. As we assume the forces, we will become ardent champions for both weapon systems -- as well as for the men and women who operate, maintain, secure and support them. Both the ICBM and the bomber legs of the strategic nuclear triad have been and, most importantly, remain essential and indispensable components of our nation's armed forces. Each makes important and unique contributions to the security of our nation, as well as to our allies and friends. For as our President and Commander in Chief stated in Prague on April 5th of last year, "As long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies."¹

¹ http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/

However, this afternoon, I'd like to focus my comments on the current status and future of the ICBM force. It's particularly fitting to do so here out west and at this time, for several reasons.

First, it's no exaggeration to say that California was the birthplace of the American ICBM, and it continues to make major contributions to its development. The greater Los Angeles area played a defining and decisive role in the development of the ICBM. Key aerospace companies, "think tanks" such as the RAND Corporation, and the Air Force's Western Development Division, under the brilliant leadership of General Bennie Schriever, were all located there.

Second, this past fall, we celebrated the 50th Anniversary of the first ICBMs being placed on alert. On September 1, 1959, the Air Force accepted the Atlas D missile. A week later—after a Strategic Air Command crew had successfully launched a training missile—the SAC commander-in-chief, General Thomas Power, declared the ICBM operational. As a result, one of the three missiles in Complex 576A at Vandenberg AFB was officially declared to be on strategic alert. Ever since then, the men and women of the nation's ICBM team have demonstrated the highest standards of technical expertise, professionalism and devotion to duty. We in the Air Force are extraordinarily proud of each and every one of them, and the contribution they make to our national security. With every alert tour, with every dispatch, with every posting, they demonstrate over and over

again that they truly are amongst the best and brightest who have ever served in the Air Force.

Finally, on December 1st, 2009 Air Force Global Strike Command assumed command over and responsibility for Twentieth Air Force, and its three missile wings, located at F.E. Warren AFB in Wyoming, Malmstrom AFB in Montana, and Minot AFB in North Dakota, as well as the 576th Flight Test Squadron at Vandenberg AFB, California.

As you already know, the Air Force established Global Strike Command as a key part of a broader roadmap developed by Secretary of the Air Force Mike Donley and Chief of Staff General Norman Schwartz to refocus our efforts on the nuclear enterprise. Under Global Strike Command the ICBM and nuclear-capable bomber and global strike forces are clearly aligned under a single chain-of-command, providing focused oversight and advocacy of the Air Force's long-range nuclear weapon systems. Since the formal activation on August 7th of last year, the Airmen of Global Strike Command have busied themselves with building a brand new model major command.

This transition was by no means a "hostile take-over" -- far from it. Many of us in Global Strike Command previously and proudly served in both command and staff positions in Air Force Space Command, and have the highest regard and

utmost respect for its mission, its vision, its people, its leadership and its enormous contributions to the ICBM force over the past 16 years. In fact, every program to sustain and modernize the ICBM that I will describe in a moment was conceived, initiated and led with great effectiveness by Air Force Space Command. Secretary Donley said it best in his remarks at the ICBM Symposium at F.E. Warren: “*Air Force Space Command has effectively sustained this mission, but this changeover will establish clear lines of authority and continue to strengthen advocacy for the mission...what remains the same is the safe, secure, and effective operation of this weapon system in support of the U.S. Strategic Command.*”

IMPORTANCE OF THE ICBM FORCE

Even though the Cold War has ended, the world remains a dangerous and uncertain place. For this reason, the traditional strategic nuclear triad continues to be the foundation of our national deterrent posture. Each one of the triad’s three legs – the intercontinental ballistic missile, the long-range bomber, and the submarine-launched ballistic missile – makes a unique and complementary contribution to our national security. As the recent report of Congressional Commission on the Strategic Posture of the United States, chaired by former Secretary of Defense William Perry, pointed out “*the resilience and flexibility of the triad have proven valuable as the number of operationally deployed strategic nuclear weapons has declined. They promise to become even more important as*

systems age and if back-up systems within each leg of the triad are reduced. If one leg of the triad were to go out of service as a result of a technical problem in the delivery system or warhead, the other two legs could still provide credible deterrence.”

Of the three legs of the strategic nuclear triad, the ICBM is the most immediately available and responsive to national leadership. Continuously on alert and deployed in 450 widely dispersed locations across America’s northern Great Plains, the size and characteristics of the overall Minuteman III force present any potential adversary with an almost insurmountable challenge should he contemplate attacking the United States. Because he cannot disarm the ICBM force without nearly exhausting or using up his own forces in the process, and at the same time, leaving himself vulnerable to our submarine-launched ballistic missiles and bombers, he has no incentive to strike in the first place. That’s the point. The ICBM thus contributes immeasurably to both long-term deterrence and stability in any emerging crisis.

ICBM FORCE SUSTAINMENT

Sustainment of a safe, secure and credible ICBM force thus remains a critical Air Force mission and responsibility and one of Global Strike Command’s top priorities. To that end, we are currently engaged in a roughly seven billion dollar,

multi-year program to refurbish or modernize practically every inch of the Minutemen III—from the top of the nose cone to the bottom of the first stage nozzles. All three rocket motors have been overhauled with new propellant; the guidance system has been updated with new electronics; the propulsion system rocket engine (or post boost vehicle) is undergoing life extension; and the newest ICBM warheads, previously used on the deactivated Peacekeeper missile, are being deployed on a portion of the Minuteman fleet.

In addition, other aspects of the overall weapon system have benefitted from substantial investment. To ensure connectivity with national leadership, we have updated our capability to receive very low frequency and MILSTAR communications, and we are poised to take advantage of the Advanced Extremely High Frequency (AEHF) satellite communications system once it comes on line. To enhance the survivability of the weapon system, we are equipping the missile alert and launch facilities with new environmental control systems, and new diesel generators, as well as new electrical equipment, new batteries and new battery chargers. These measures will not only extend the service life of the missile system to at least 2020 and possibly beyond, they will also enhance its maintainability and reduce the cost of ownership.

Equally important, the Air Force is taking significant steps to enhance security in every facet of the ICBM system. Work was recently completed on reinforcing

the protective concrete structures at every launch facility, and progress continues on deploying a modified personnel access hatch designed to “button-up” a missile silo more quickly in case of emergency or attack. Further, programs are underway to install security surveillance cameras at all the remote launch facilities as well as all of the missile alert facilities. This measure will offer an immediate visual assessment capability of any anomalous situation thus providing some situational awareness to our responding security forces. We recently completed a cryptological upgrade to the MMIII weapon system by providing current algorithmic technology to the communications stream that occurs continuously between the launch facility and the launch control center. We plan to go one additional step by leveraging this new technology to further improve system encryption with irreversible transformation and to assess the possibility of performing code change at all sites in the field remotely. If implemented, the task of changing codes will take a matter of hours as opposed to days, thereby drastically reducing the number of man-hours required to carry out this recurring task, and reducing the attendant security risks of opening up each launch facility at a known, predictable time. Additionally, we’re studying security enhancements which will incorporate additional layers of detection capability at the launch facilities. This added capability would be built into an integrated suite which would be monitored by the combat crew and the security controller. The

enhancements we are reviewing include fence sensors, buried sensors, infrared sensors, thermal and night capable video systems. These would be located at the launch facility and be integrated with the existing inner and outer zone alarm systems. Ideally, the system would go active when an intrusion is detected, by slewing cameras to the point or points of detection. Another security enhancement being explored is to place seismic sensors around the missile complex. The sound waves generated would be run through an algorithm to determine the type of vehicle that might be attempting to intrude on a LF, but before it is detected by on-site sensors.

These, of course, are significant programs that require substantial, multi-year investments. But, as any logistician will readily tell you, one area that is often overlooked and under-appreciated, and therefore not adequately funded in virtually every weapon system, is support equipment. The Minuteman is no exception. Take for example the Reentry System (or RS) Test Set. Every weapon deployed to the missile field requires a thorough checkout from this unique, one-of-kind hardware. As such, it's the long-pole in the tent for any maintenance activity involving removal and replacement of a warhead. Without it, Twentieth Air Force cannot place a single missile on alert. The RS Test Set is, quite frankly, in critical condition and on life support. So, too, are many of the specialized cables used with it. An earlier attempt to field a replacement system failed. Recent initiatives

taken by the Air Force Nuclear Weapon Center, Air Force Material Command and our industry partners promise to enhance its performance and lifespan until a new (and successful) replacement can be developed.

But, even if we resolve this particular problem, it's vitally important to keep focused, sustained attention on the remainder of the Minuteman's test equipment, handling equipment, and transportation equipment to ensure we don't find ourselves in other "life support" situations. For example, the specialized vehicles that transport warheads and boosters to and from the missile field require regular replacement; and in the case of our payload transporters, additional security enhancements are being added to the replacement vehicles. The personnel alarm system equipment that our dedicated Security Forces employ in their challenging duties is also past its expected life span, as are portions of the cryptographic devices which crewmembers, maintainers, and defenders utilize to ensure only authorized individuals can access launch facilities and missile alert facilities. These types of programs are certainly not glamorous but are nevertheless vital to the safety, security, and credibility of our ICBM force and therefore require on-going attention and funding.

The current modification programs were originally designed to sustain the Minuteman III force through the year 2020. And, in response to Congressional direction, the Air Force is currently exploring the steps necessary to sustain the

Minuteman III until 2030. Air Force Global Strike Command will continue partnering with Air Force Materiel Command and with the Air Force Nuclear Weapons Center to refine projections about the potential service life of the motors and other hardware after undergoing the current upgrade programs. However, it's probably too early to say with great confidence exactly how long the ever-reliable and always-dependable Minuteman weapon system will be serviceable. The Air Force will continue to conduct a comprehensive program to inspect missile and reentry system components for signs of aging, and to perform periodic operational tests—both in the missile field as well as unarmed test flights from Vandenberg Air Force Base, California.

I've discussed our current modification efforts and some new initiatives for security and support equipment. Even as the Minuteman continues to have operational utility out to 2030, some additional upgrades to the weapon system beyond those currently underway may be both reasonable and prudent. For example, the current guidance system uses 1960s-era technology in its gyroscopes and accelerometers, which in turn have reached their practical limits in terms of maintainability. Insertion of modern technology into the guidance system could potentially extend the mean-time-between-failure by a significant order of magnitude, and it also gives us the ability to rethink the way we perform maintenance on the missile guidance set. Both of these measures drastically

reduce maintenance costs and enhance security. Much like the B-52, the Minuteman force must take advantage of modern technologies and operational practices and continue to evolve in order to keep pace with dwindling resources and demands to support newer capabilities and missions while still maintaining the critical role in our country's deterrent forces to which it has contributed so consistently for five decades.

And we must also address future needs. While we work to sustain Minuteman to 2030, it is not too early to begin seriously considering what the next generation of intercontinental ballistic missile would look like. Advances in technology suggest the possibility of an ICBM (or ICBM-like system) of greater range and greater flexibility, while maintaining the enduring attributes of rapid response, high reliability, and assured penetration of defenses. A wide variety of possibilities exist to integrate new operational concepts into the next-generation ICBM. A recent study, conducted by AFSPC, identified and defined 72 attributes relevant to a future strategic deterrent. Examples of the primary attributes of a land-based system are that it is: safe, secure, survivable and responsive, to name a few. These attributes lead us to thinking about enablers such as stable propellant, insensitive high explosives, robust command and control, mobility, hardening, etc. In the not too distant future, we will begin a Capabilities Based Assessment, establish an Initial Capabilities Document and take all those steps necessary to ensure we have

a replacement system ready by 2030. Maintenance, security, and command and control concepts can most certainly be re-engineered to reduce overall manpower and costs, while enhancing nuclear surety and safety. The ICBM, like its bomber counterpart, has the potential in the future to fill a variety of roles. This suggests exciting possibilities, and as Secretary Donley stated, Air Force Global Strike Command was created to strengthen advocacy for the ICBM mission. For the record, that is exactly what we intend to do as our major command looks towards achieving full operating capability in September of this year.

Regardless, we cannot afford to sit idly by while the Minuteman force continues to age. To quote Frank Miller, a former member of the National Security Council staff, who has long thought about and written on this very subject, *“It is all well and good to assert that the ICBM force continues to fill a needed national mission but such statements of policy cannot ensure that the force will be available to carry out its identified mission....If there is to be an ICBM force in the future, it will exist only if efforts to design and fund a major upgrade—or a follow-on—to the Minuteman system are undertaken promptly. Over time, the failure to do so will constitute a de facto decision to permit the Minuteman system to atrophy slowly*

*without replacement. Despite the dedicated efforts of the officers and enlisted members of the force, it will inevitably waste away.”*²

That perceptive conclusion brings to mind another, equally important point: we also need to invest in our workforce -- current and future -- to ensure we bring together the right skills, experience, and leadership to create and maintain the capabilities our nation needs. With only three missile wings to draw from, we must be very deliberate in how we develop our ICBM expertise within the ranks of the military. But equally worrisome is the aging workforce and shrinking capacity of our industrial base designed to produce, test, and maintain ballistic missiles and their associated technology. Gone are the days when we rolled out a new system each decade, an approach that assured a healthy, trained and skilled workforce and industrial capacity. With the Navy’s Trident submarine-launched ballistic missile also expected to be in service for an extended period of time, what will become of the United States’ solid rocket motor skills, our inertial guidance skills, our reentry vehicle skills and so on and so on. The same question applies to the dedicated national laboratory personnel. Our Nation has great intellectual talent coming out of our universities, but what is the incentive for our young engineers to enter the strategic deterrent field? How we manage the on-going sustainment and modernization programs will be critical to maintaining the manufacturing skills

² Miller, Franklin C., “ICBMs in the Twenty First Century” in *High Frontier: The Journal for Space & Missile Professionals*, vol. 2 no. 4, August 2006.

needed for the next follow-on system. These are not easy questions but ones which the Air Force and Global Strike Command must tackle in conjunction with the Navy.

REPLACEMENT HELICOPTER

Finally, it's worth noting that Air Force Global Strike Command assumed lead command responsibilities for the venerable UH-1N helicopter that currently supports field operations and security at all three missile bases. While this helicopter remains a serviceable aircraft -- thanks to the expertise and heroic efforts of our helicopter squadron leaders and our contractor logistics support -- the UH-1N fleet is getting a little long in the tooth. Moreover, its ability to meet the post -9/11 security requirements is limited.

The requirement for a replacement platform has long been recognized, but in the Air Force's fiscally constrained environment, it has been an on-going challenge to obtain funding for a replacement helicopter. The replacement will need to have greater unrefueled range, greater speed, and the ability to carry more personnel and equipment in order to rapidly deploy a sufficient number of appropriately armed security forces anywhere in the missile complex. There is money in the FY11 budget to accelerate the replacement program and we're hopeful those dollars will remain in the final appropriation.

A replacement platform would also enhance our ability to better support our secondary mission to USNORTHCOM in a contingency situation or a national emergency. As we witnessed in 2005, our missile wing helicopters were called upon to support Joint Task Force-Katrina to aid in search, recovery and relief operations following the hurricane that devastated the Gulf Coast. More routinely, these helicopters perform search and rescue missions in the local communities and regions around the bases to which they are assigned. A platform with greater range, speed, and cargo capacity could potentially make a living-saving difference in support to civil authorities.

CLOSING THOUGHTS

In the frenzied era following the dawn of the Space Age after the Soviet Union launched Sputnik in October 1957, America struggled to forge an appropriate response. Ultimately, one of the key measures which President Dwight Eisenhower implemented was to dramatically increase funding for a family of American ballistic missiles. The truly heroic actions of General Schriever and his team at Western Development Division insured that our nation's ICBM force debuted with both quiet dignity and undisputed effectiveness. Since the first Atlas missile went on alert in 1959, ICBMs have remained a stalwart contributor to our

nation's strategic nuclear defense for 50 years, and they continue to do so today. Though the Minuteman III force is aging, the efforts of Air Force Space Command and, now, Air Force Global Strike Command, will make sure that it does so gracefully while retaining its effectiveness. Despite the fact that we live in a world very different from the Cold War, this era still requires the ICBM and its unique capabilities as a credible deterrent for the US and its allies around the world.

Recently completed and ongoing programs will give the United States the continued assurance of a ready and capable land-based ballistic missile force until at least 2020. With further modernization, the force can be extended until 2030 as required, but we must also be attentive to the needs for an effective deterrent and next generation missile fleet beyond that date.

Once again, many thanks to the American Institute of Aeronautics and Astronautics for inviting me to be with you here today. It has been both an honor and a privilege to be with so many colleagues. But before I relinquish the stage, I believe there is some time for a few questions.