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COMMITTEE STRATEGIC FORCES  
SUBCOMMITTEE

STATEMENT  
OF  
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BEFORE THE  
SUBCOMMITTEE ON STRATEGIC FORCES  
OF THE  
HOUSE ARMED SERVICES COMMITTEE  
ON  
PRIORITIES FOR  
DEPARTMENT OF DEFENSE NUCLEAR FORCES  
JUNE 10, 2021

## **INTRODUCTION**

Thank you for the opportunity to testify and provide a 2021 status update on the United States Air Force (USAF) nuclear enterprise. I also want to acknowledge and thank our industry and government partners who integrate across the spectrum to ensure the U.S. nuclear enterprise remains the most credible in the world. Finally, a special thank you to the Airmen who work tirelessly day in and day out to ensure the U.S. maintains the safe, secure, reliable, and credible nuclear deterrent the nation demands. They are trusted with safeguarding the credibility of the U.S. nuclear deterrent every single day while expertly operating, maintaining, and defending our systems, most of which are 30 years older than they are.

I am happy to report over the last year, the Department of the Air Force (DAF) has achieved many key nuclear goals including significant milestones in the Ground Based Strategic Deterrent (GBSD) program, Long Range Standoff missile (LRSO), B-21 Raider, as well as Nuclear Command, Control, and Communications (NC3). In September 2020, the GBSD program completed Milestone B leading to the Air Force awarding the \$13.3B Engineering and Manufacturing Development (EMD) contract to Northrop Grumman. GBSD is the next generation Intercontinental Ballistic Missile (ICBM) incorporating increased safety, security, and reliability features that will replace the aging Minuteman III (MMIII). The GBSD will be capable of addressing the rapidly growing threat posed by Russia, the People's Republic of China (PRC), and North Korea. The Air Force is also on the brink of completing Milestone B for the LRSO, which will replace the Air Launched Cruise Missile (ALCM) fielded in 1982. The LRSO's capabilities are critical to deterrence, as they will complicate the adversary's defense calculus by leveraging stealth and standoff range, while providing the primary hedge for the other two legs of the triad. Finally, the B-21 Raider program is on schedule and on budget, with the first two test aircraft in production now.

Among their many other achievements over the last year, the current bomber, ICBM, and airborne NC3 force maintained the high standards for nuclear readiness during the COVID-19 pandemic. The unwavering professionalism of the men and women of the DAF who operate these systems continue to ensure the foundation of our national security remains strong. Despite the recent successes, there is a constant reminder we must continue to move forward on modernization and recapitalization of the nuclear enterprise. Our potential adversaries and pacing threats present the most technologically advanced military capabilities the U.S. has ever faced, yet we are competing with outdated systems that have never been older.

## **THE THREAT**

Long-term strategic competition with Russia and the PRC are the primary challenges for the Department of Defense (DoD). As stated in President Biden's Interim National Security Strategic Guidance, both Russia and the PRC have invested heavily in their capabilities with the intent to check U.S. strengths and prevent the U.S. from defending its interests and allies around the world. For the first time in our Nation's history, we are on a trajectory to face two nuclear capable, strategic peer adversaries.

Russia continues to modernize both its nuclear and conventional forces and is leading the world in the development and deployment of hypersonic weapons. Russia has not only modernized every leg of its triad, but is expanding its nuclear stockpile to include novel strategic systems. In addition, Russia has multiple types of non-strategic nuclear weapons (NSNW) deployed or in research and development—including, short- and close-range ballistic missiles, cruise missiles, and anti-ship

missiles. Three of Russia's novel strategic systems and its NSNW are not subject to the New START Treaty's limits and verification regime.

The PRC represents the largest long-term threat to the U.S. as it increases its offensive and defensive warfighting capabilities at an alarming and unprecedented rate; striving to quickly complete its nuclear triad. Their nuclear stockpile is advancing technologically, and is projected to at least double this decade. The PRC's nuclear forces are expected to significantly evolve over the next decade as it modernizes, diversifies, and increases the number of its nuclear delivery platforms. In addition to the land- and sea-based capabilities, the PRC announced its development of a new nuclear-capable strategic stealth bomber. This increase in capability, combined with improvements in the readiness of its nuclear forces and advancement of the airborne leg of its triad, could significantly increase the responsiveness, survivability, and lethality of the PRC's nuclear deterrent.

Meanwhile, North Korea and Iran are pursuing destabilizing capabilities and technologies. North Korea continues its ballistic missile development and testing, threatening regional stability in the Pacific. Iran's posture continues to show they are willing to challenge U.S. regional operations by harassing or engaging our forces on land, sea, and air.

At a time when our nuclear-armed adversaries are becoming their strongest, it becomes increasingly challenging to maintain and sustain nuclear deterrence weapon systems and infrastructure from the Cold War. The multiple challenges to the international order requires increased and sustained investment across the spectrum of military capabilities to compete with our adversaries at levels below armed conflict while continuing to deter, and if necessary, dominate escalation in a crisis. We must hedge against what our adversaries are capable of accomplishing based on their technical knowledge and industrial capacity. Therein lies the challenge we face as we develop defense priorities to account for the totality of the global strategic environment.

## **STRATEGY & THE NUCLEAR TRIAD**

The current National Defense Strategy seeks to *compete, deter, and win* by building a more lethal force, strengthening alliances and partnerships, encouraging American technological innovation, and developing multi-domain capabilities enabling decisive, sustained advantages for the 21st Century.<sup>1</sup> The Interim National Security Strategic Guidance provides the way forward to strengthen alliances, amplify U.S. power, and ensure threats never reach our shores. While this guidance notes that we will take steps to reduce the role of nuclear weapons in our national security strategy, it also highlights the need to ensure that our strategic deterrent remains safe, secure, and effective while ensuring our extended deterrence commitments to our allies remain strong and credible.<sup>2</sup> Modernization of our Cold War-era systems enables the U.S. to meet the above objectives.

The triad has been the cornerstone of U.S. defense strategy for decades. The triad, two-thirds of which the Air Force operates, brings together the capabilities of the bomber, ICBM, and submarine-launched ballistic missile (SLBM) forces. Each leg of the triad provides unique and mutually supportive attributes that hedge against unexpected technological problems or operational vulnerabilities. The triad's very nature allows U.S. planners to not rely on one specific weapon system thus reducing risk. Along with our U.S. Navy and the Department of Energy's National Nuclear Security Administration

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<sup>1</sup> 2018 National Defense Strategy

<sup>2</sup> 2021 Interim National Security Guidance

(NNSA) partners, the triad and the NC3 enterprise has stood the test of time since the 1960s.

The triad is also a key part of our allies' defense strategy through U.S. extended deterrence assurances. Our allies and partners watch what we say and do as much as our adversaries do. The U.S. does not only deter potential adversaries from aggression against the homeland; extended deterrence assures our allies and encourages non-proliferation. The North Atlantic Treaty Organization (NATO) alliance has provided for the common security of our European Allies since 1949, and Air Force and NATO dual-capable aircraft are integral to NATO's overall deterrence and defense posture. Additionally, in the Indo-Pacific, U.S. nuclear capabilities play a vital role in maintaining peace and stability.

### **REQUIREMENTS, MODERNIZATION, AND RECAPITALIZATION**

The DAF continues to maintain a strong, mutually supportive partnership with the NNSA to ensure our modernization and recapitalization programs remain on time and on budget. It is critical that each of these programs deliver on schedule to reduce the risk of capability gaps in our nuclear deterrent near the end of this decade and into the next. To that end, the Fiscal Year (FY) 2022 President's Budget request supports sustainment efforts for MMIII, ALCM, UH-1N helicopter, and nuclear-capable bombers. All major recapitalization programs, including the B-21, GBSD, LRSO, and the MH-139 helicopter are also supported. The goal of our nuclear enterprise programs continues to focus on ensuring an effective and credible deterrent while remaining on budget and on time to meet Combatant Command requirements as directed by Presidential policy.

### **GROUND LEG - INTERCONTINENTAL BALLISTIC MISSILES**

The ICBM force remains a ready, responsive force to deter strategic attack while greatly complicating the targeting calculus of any potential adversary. Through the combination of accuracy and short response time, an adversary must consider our ICBM force in any decision to act aggressively with nuclear weapons. Additionally, the quantity and dispersion of the ICBM force make it a nearly insurmountable targeting problem.

*Minuteman III*: The MM III remains an indispensable part of the nuclear triad. However, the Air Force is quickly losing the ability to cost-effectively sustain it, and emerging threats will reduce its effectiveness in the future. The Air Force deployed the first MM III missile in 1970, into launch facilities built in the 1960s. The MM III weapon system is now more than 40 years beyond its designed service life and more than 20 modernization and sustainment programs are required to keep it viable until replaced by GBSD beginning in FY27.

The MM III Depot Maintenance Program will continue sustaining this legacy weapon system throughout the deployment of its replacement. The Air Force continues to work across multiple lines of effort to ensure the legacy ICBM force remains safe, secure, and effective until the planned replacement with GBSD. We know that nuclear weapons must be as good on their last day, as they are on their first—anything less is unacceptable.

The MM III sustainment efforts cannot change the reality that this legacy platform will not be able to close capability gaps or evolve to meet future strategic requirements—we are out of time. Additionally, sustainment efforts cannot solve the increasing costs generated by persisting infrastructure issues and parts obsolescence. These issues include a lack of engineering drawings, parts manufacturing capability, corrosion, and increased challenges with water intrusion within the Launch Control Centers and Launch Facilities. A 2014 comprehensive Analysis of Alternatives, 2019 congressional reporting requirements, as well as a number of DoD- and DAF-level studies published

over the past seven years conclude that MM III life extension is not the most viable or cost-effective solution in light of the challenges listed above.

***Ground Based Strategic Deterrent:*** The GBSD is the replacement program for the entire MM III weapon system and has met every major milestone for the past five years. In September 2020, a \$13.3B EMD contract was awarded to Northrop Grumman to continue this model program. The GBSD program includes the recapitalization of the legacy MM III Launch Control and Missile Alert Facilities. Replacing the 1960s-era infrastructure, which is suffering from shortcomings in several areas to include blast door resilience, water intrusion, and cabling degradation, is equally critical to the replacement of the missile itself. Digital engineering, modularity, and open mission system architecture, along with government ownership of data rights, will allow GBSD to remain viable against emerging threats and more easily integrate future NC3 systems. Just as important is the increase in safety, security, reliability, and cyber resiliency that is being incorporated from the start.

As a critical national security priority, continued funding remains essential to ensure the time-certain delivery of the GBSD system. The GBSD program will begin fielding in 2027 to meet full operational capability (FOC) in 2036. The system will initially utilize the W87 and Mk21 until the W87-1 and Mk21A are fielded. This deployment schedule will maintain minimal margin between the required transition from the MM III and the fielding of the GBSD, while meeting the on-alert requirements of the Commander, United States Strategic Command. In FY22 the DAF plans to invest \$2.65 billion dollars into the GBSD program as it continues the EMD phase. These investments will allow the program to continue to mature critical weapon system technologies and software while developing Vandenberg SFB test capabilities and infrastructure. The GBSD program remains on schedule for Initial Operating Capability (IOC) in FY29 and FOC in FY36.

## **AIR LEG – BOMBERS AND ASSOCIATED NUCLEAR WEAPONS**

To deter nuclear attack while protecting the nation and our allies from nuclear coercion and blackmail, the Air Force must possess the capability to hold legitimate and valuable military targets at risk while facing 21st century threats. Consisting of nuclear capable bombers and their associated standoff and gravity weapons, the air leg provides the flexible response demanded by our Functional and Geographic Combatant Commanders in order to meet the modern demands of a regional and tailored deterrent. While the nuclear mission of the bomber force is critical, the capabilities bombers bring to conventional operational plans are no less important. This is especially true given the USAF is not only our nation's only bomber force, but also our Allies' only bomber force.

The bomber force provides visible messaging to both our Allies and adversaries. It is capable of employing the full range of combat power across the entire spectrum of conflict, giving Combatant Commanders the flexibility and necessary reach if deterrence fails. To accomplish this, the air leg requires both stand-off (i.e. LRSO) and stand-in (e.g. B-21 bombers with gravity weapons) capabilities—these are not interchangeable. The nuclear-capable bomber force consisting of the B-2 and B-52, represents the most flexible leg of the nuclear triad. Our future bomber, the B-21 Raider, is fully executing in the EMD phase and the Air Force is closely monitoring the production of the first two test aircraft, with first flight expected in 2022.

The B-2 bomber continues to serve the country well and will do so until it is replaced by the B-21. Several efforts are needed to ensure the B-2 remains relevant, including communications upgrades and integration of the B61-12 nuclear gravity weapon. The B-2 remains the only penetrating bomber able to hold any target in the world at risk. The B-21 will carry this legacy forward. Investments in

the B-21 and modernization of the B-52 maintains America's capability to deter adversary aggression, assure allies, and project combat power across the full spectrum of conflict. The B-52 is executing the most comprehensive modernization in history, to include major programs such as the commercial engine replacement program and radar modernization program, both of which remain on track. These modernization programs ensure the venerable B-52 remains relevant through the 2050s. With a future two-bomber fleet of B-21s and modernized B-52s, the ability to reach any potential target, anytime, anywhere in the world remains intact.

In the face of modern defenses, the need for a stand-off delivery capability makes LRSO essential. The LRSO provides the most survivable and sustainable means of holding heavily defended targets at risk. By being able to launch multiple weapons at once, the U.S. can complicate adversary defenses by creating an exponential number of targets that air defenses must find, fix, track, target and engage simultaneously from multiple axis of attack, thus increasing deterrence. The current stand-off missile, the ALCM, is operating 29 years past its design life, and must be sustained to remain effective until it is replaced with the LRSO.

The LRSO program, including the NNSA's W80-4 warhead life-extension program (LEP), is on track to meet the original planned IOC date in FY30 and is targeting an EMD contract award as early as June of 2021. The Air Force plans to invest \$609M in FY22 for the continued design and development of the LRSO. As the nuclear hedge for unforeseen issues in the GBSD and COLUMBIA SSBN programs, it is more critical than ever that the LRSO program remains funded and on schedule.

Over the next decade, the Air Force will be under significant pressure to ensure our triad modernization and recapitalization remains on time because there is no margin for delay. Every new program is delivering just in time for retirement of its legacy counterpart. The Air Force maintains the surest way to prevent a gap in our strategic deterrent is to ensure stability of funding and requirements for our nuclear programs as equally critical pillars of success in this intricate recapitalization environment.

## **NUCLEAR COMMAND, CONTROL, AND COMMUNICATIONS**

The DAF operates and maintains approximately seventy-five percent of the NC3 capabilities providing the President control of U.S. nuclear forces at all times, without fail. NC3 is the central nervous system of the nuclear triad linking national leaders to the forces all day, every day, under all conditions. NC3 is a system-of-systems designed to ensure senior leaders the ability to *detect* nuclear attacks, *decide* on a response, and *direct* nuclear forces. Today, the NC3 system is a legacy of the Cold War, and the DAF continues to invest heavily in order to modernize, sustain, and protect NC3 interconnected elements.

Like other legacy weapon systems designed to be resistant and resilient to Cold War era threats, the NC3 system must be modernized to remain effective against emerging threats in multiple domains. Of particular concern are expanding threats in space and cyberspace, and adversary strategies of limited nuclear escalation. Weapon system modernization is underway across the entire set of capabilities. In FY22, the Air Force plans to invest over \$1B in 32 NC3 programs, including Next Generation Overhead Persistent Infrared (OPIR), Evolved Strategic Satellite Communications (SATCOM), and Survivable Air Operations Center (SAOC) as the aging E-4B National Air Operations Center (NAOC) replacement. The SAOC ensures national leadership a highly survivable NC3 platform in the event ground command and control, and associated centers are at risk or cease to function during national emergencies. The SAOC program is anticipating acquisition strategy

approval in FY21 and Milestone B in FY23 to begin delivering aircraft in the early 2030s.

## **INFRASTRUCTURE & WEAPONS GENERATION FACILITIES**

While the modernization of the bomber and ICBM weapons systems remains critical to the nuclear enterprise, the supporting infrastructure contributes equally to the success of the missions these weapon systems support. In many cases, the facilities our nuclear forces operate from are obsolete and hinder operations. To support modernized ICBM and bomber weapon systems, transitioning from decades old Weapons Storage Areas to modern Weapons Generation Facilities (WGF) is required. The Air Force has made significant progress on evaluating requirements to account for modern weapon designs, thus driving costs down to ensure WGF affordability. This is a necessary step in further integrating safety and security into nuclear operations while allowing the bomber leg to be more responsive to Presidential direction in a crisis. The Air Force continues planning for the construction of WGFs supporting nuclear capable bombers providing the Air Force necessary dispersal capability that enhances survivability. The Air Force plans to make all B-21 WGFs fundamentally alike, providing a hardened facility to facilitate generation, maintenance, and storage functions for nuclear weapons. The first WGF is under construction at F.E. Warren AFB in support of the ICBM mission. This project received initial appropriations in FY16 and is nearly 40% complete. Planning for additional WGFs supporting the ICBM mission at Malmstrom AFB and the B-52 mission at Barksdale AFB is on-going. In the FY22 President's Budget, the DAF is requesting an initial authorization of \$272M for the WGF at Barksdale AFB, along with a corresponding appropriations request of \$40M for the first increment of this project.

## **CONCLUSION**

The U.S. nuclear triad remains the primary military means by which the DoD provides deterrence against existential threats to our homeland and allies. However, if we try to defer nuclear modernization further, we will be increasingly challenged to maintain the safety, security, and reliability of these systems to meet current and emerging requirements. We recognize that the strategic reviews will look at modernization plans and we look forward to participating in that process.

The U.S. must remain diligent to ensure there is no advantage to gain by our adversary's pursuit, employment, or proliferation of weapons of mass destruction. To accomplish this, the DAF, along with the NNSA, will continue to aggressively execute the programs of record that sustain, modernize, and recapitalize our triad. The Air Force is committed to providing stable requirements and funding for the current programs across the enterprise, as we have in the FY22 President's Budget request. However, we cannot do this alone, and we ask for the continued support of Congress to provide stable authorization and appropriation across both the DoD and NNSA enterprises. We owe these things not only to our nation but also our Airmen who are, in some cases, manning the same missiles and flying the same aircraft tail-numbers as their grandparents did. Yet, we demand, and in fact, depend, on their success in a very different world and against threats that are far more lethal and sophisticated than their grandparents could have imagined; to accomplish a mission that is vital to our nation's survival.