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BY THE HOUSE ARMED SERVICES  
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  
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## **INTRODUCTION**

The Airmen of the United States Air Force, along with our partners at the National Nuclear Security Administration (NNSA) remain committed to accomplishing the nuclear mission each and every day. Our nuclear force serves as the foundation of the National Defense Strategy—backstopping all U.S. military operations across the globe, while continuing to deter the escalation of conflict between great powers. Deterring nuclear and non-nuclear strategic attack against the United States and our allies remains the highest priority of the Department of the Air Force. The office of the Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration (AF/A10) continues to monitor and provide oversight of the safety, security, reliability, effectiveness, and credibility of the nuclear deterrence mission in accordance with United States law<sup>1</sup>. Over the last year, the Department of the Air Force has continued to work toward full implementation of the recommendations made in the 2014 Nuclear Enterprise Review and 2018 Nuclear Posture Review, while providing updates to the Secretary and Chief of Staff of the Air Force to ensure senior leaders are up to date on developments across the nuclear enterprise. These and many other efforts ensure the Department of the Air Force continues to be a responsible steward of our national nuclear capabilities, while building an integrated approach that addresses the strategic security environment at hand.

## **THREAT**

Long-term strategic competitions with Russia and China are the principal priorities for the Department of Defense. These priorities require increased, sustained investment because of the magnitude of the threats they pose to U.S. security and prosperity today and the potential for those threats to increase in the future<sup>2</sup>. Additionally, rogue states like Iran and North Korea continue to remain a concern for nuclear proliferation.

Throughout the last year, potential adversaries have continued to expand their strategic and non-strategic capabilities, creating modern and exotic weapons that, in some cases, remain unchecked in today's arms control regime. As a result of their efforts, great power competitors now believe they have an advantage over the rest of the world, evidenced in President Putin's January 15<sup>th</sup> address to the Russian Federal Assembly, in which he touted Russian progress in weapons development by saying that "[F]or the first time in the history of nuclear weapons, we are not catching up with anyone, but, on the contrary, other leading states have yet to create the weapons that Russia already possesses. The country's defense capability is ensured for decades to come, but we cannot rest on our laurels and do nothing. We must keep moving forward, carefully observing and analyzing the developments in this area across the world and create next-generation combat systems and complexes. This is what we are doing today<sup>3</sup>."

Russia continues to engage in a disinformation campaign designed to influence everything from democratic elections to the general opinions and actions of everyday Americans. As they seek to disrupt the rules-based international order and re-establish a position of power, they have also focused on modernization of their nuclear stockpile, which is nearly complete. Upgrades to their

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<sup>1</sup> 10 U.S. Code § 9040 directs the Deputy Chief of Staff to carry out the following duties; (1) Provide direction, guidance, integration, and advocacy regarding the nuclear deterrence mission of the Air Force; (2) Conduct monitoring and oversight activities regarding the safety, security, reliability, effectiveness, and credibility of the nuclear deterrence mission of the Air Force; (3) Conduct periodic comprehensive assessments of all aspects of the nuclear deterrence mission and provide such assessments to the Secretary and Chief of Staff of the Air Force.

<sup>2</sup> 2018 National Defense Strategy

<sup>3</sup> Address to Russian Federal Assembly, 15 Jan 2020

strategic forces include updating the Tu-95MS BEAR strategic bombers and the Kh-101 & 102 long-range, air-launched cruise missiles; building and deploying the DOLGORUKIY-class SSBN platform for the BULAVA SS-N-32 SLBM; and replacing silo-based and mobile ICBMs with newer systems and increased warhead capacity. In addition to modernizing its existing capabilities, Russia is embracing new and exotic weapons like the TSIRKON hypersonic anti-ship missile, the BELGOROD nuclear capable submarine and the complimentary POSEIDON nuclear capable, unmanned underwater vehicle, the KINZHAL nuclear-capable air-launched ballistic missile, and the BUREVESTNIK nuclear powered, nuclear capable intercontinental cruise missile. Illustrating the danger of Russia's destabilizing efforts, a test of the BURVESTNIK in August, 2019, resulted in a nuclear explosion that killed seven Russian scientists and spread radiation into the environment. In December 2019, the Russian Defense Minister announced the first deployment of the AVANGARD Hypersonic Missile System, adding it to the list of strategic, nuclear capable weapons in the Russian inventory. Finally, Russia continues to build its arsenal of non-strategic nuclear weapons, while developing the doctrine to employ them in concert with other military forces, a capability that many believe will grow significantly over the next decade.

China's actions, with regard to nuclear weapons, reflect a notable desire to achieve regional hegemony, while expanding Chinese influence beyond the Indo-Pacific. Although China continues to maintain a "No First Use" policy, their lack of transparency regarding their nuclear weapons modernization leaves us to question their motives and intent. During the 70th Anniversary Parade in October 2019, the People's Liberation Army (PLA) unveiled new strategic nuclear systems, including the H-6N BADGER bomber, the DF-41 intercontinental ballistic missile (ICBM), and the DF-17 medium-range ballistic missile (MRBM). China has also taken steps to accelerate nuclear weapons modernization by fast-tracking its Sea-Launched Ballistic Missile (SLBM) program. In December, it took actions to separate the development program for its next generation SLBM (JL-3) from the next generation Ballistic Missile Submarine program. This change will allow China to complete testing of the JL-3 missile faster, while also expanding the capability to deploy the modern missile earlier on its current ballistic missile submarine. Once fielded, this will extend the reach of Chinese SLBMs and increase their ability to threaten the U.S. homeland.

Iran, after an extended period of pressuring France, Germany, and the UK, as well as the European Union, for relief from U.S. sanctions, has announced that it will no longer adhere to commitments under the Joint Comprehensive Plan of Action that limited its nuclear program, and is now once again building up its uranium enrichment program. Iran's past pursuit of nuclear weapons, and its efforts to preserve and conceal information from its prior nuclear weapons work, heightens the already great seriousness with which we must view these new developments. Combined with Iranian ballistic missile technology, a capability that was recently demonstrated against Al Assad and Irbil Air Bases in Iraq, the Iranian regime remains a regional concern. The United States must remain vigilant in this respect.

Finally, North Korea continues to bolster its strategic rocket forces amid diplomatic efforts to denuclearize while ending its self-imposed nuclear weapons test moratorium. Despite U.S. attempts to engage North Korea in working-level negotiations, North Korea has not demonstrated a sincere desire to enter into such negotiations. The United States continues to take steps to ensure the window for diplomacy remains open, but a major North Korean provocation may end this generational window for diplomacy.

## **STRATEGY**

The 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 a culture of performance that will generate decisive and sustained U.S. military advantages for the 21st Century<sup>4</sup>. U.S. nuclear weapons are the foundation and backstop for U.S. military operations around the world and continue to play an effective and significant role in this strategic approach by; (1) deterring nuclear and non-nuclear strategic attack; (2) assuring allies and partners; (3) providing a capability to achieve U.S. objectives if deterrence fails; and (4) hedging against an uncertain future. Accomplishing these objectives is a complex and never-ending task that requires a tailored approach to each ally, partner, and adversary, all of whom are both assured and deterred only as long as we remain capable of denying the adversary the advantages they seek through the development and proliferation of weapons of mass destruction (WMD). Denying these advantages, while ensuring the capability to respond decisively, raises the adversaries' threshold for nuclear escalation and bolsters U.S. deterrence. To accomplish this, we must not only ensure our strategic nuclear forces are credible and capable, but we must also ensure our conventional forces are prepared to execute their role in theater nuclear deterrence by being able to effectively operate in, around, and through a nuclear environment while delivering integrated effects across the spectrum of conflict.

Furthermore, we must address the needs of today while continuing to look to the future with a wider aperture than we have for the last three decades. This means rebuilding our strategic industrial base to ensure access to the materials and technologies we need, while maintaining control over the supply chain. It means ensuring the industries we rebuild today to support modernization of the nuclear enterprise are sustained for the next generation so they can respond to the strategic threats of the future. It means protecting the intellectual property that gives us a competitive advantage, and it means partnering with industry and academia to develop experts in science and technology, while ensuring national security jobs are competitive and appealing in the fast-paced, lucrative technology and private sector industries.

## **NUCLEAR TRIAD**

Working with our Navy partners, the nuclear triad has been the choice of every Presidential administration for 60 years to provide the backbone of our national security. At the center of our strategic capability is the Nuclear Command, Control, and Communications (NC3) network and the three legs of the nuclear triad consisting of the Intercontinental Ballistic Missile (ICBM) force, nuclear-capable bomber fleet, and the ballistic missile submarine fleet. The Department of the Air Force operates two-thirds of the strategic triad, and retains ownership of seventy-five percent of the nation's NC3 capability. Complementary to the nuclear triad, the NATO alliance has provided for the common security of our European Allies since 1949, and U.S. Air Force F-15E dual-capable aircraft, along with our allies' dual-capable aircraft, continue to contribute to NATO's overall deterrence and defense posture.

NC3 is the central nervous system of the nuclear triad that links national leaders to the forces all day, every day, under all conditions. Failure to fully modernize NC3 in parallel with the rest of the

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<sup>4</sup> 2018 National Defense Strategy

triad and other command and control (C2) architecture severely reduces the effectiveness and credibility of U.S. strategic deterrence, while adversely impacting our future ability to integrate sensors, enable deliberate decisions in response to adversary actions, ensure adaptive planning, and connect our national leaders to the forces with resilient communications.

The ICBM leg continues to be a ready response force to deter nuclear strategic attack while greatly complicating the targeting calculus of any potential adversary. Through their combination of high yield, 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, and greatly complicates the adversary's decision process.

The air leg, consisting of nuclear capable bombers, standoff, and stand-in weapons continues to provide the flexible response demanded by our functional and geographic combatant commanders around the world, while meeting the modern demands of a regional and tailored deterrent. The bomber force provides a visible message that is capable of employing the full range of combat power across the entire spectrum of conflict, giving combatant commanders the flexibility and reach necessary, if deterrence fails.

## **REQUIREMENTS**

Due to previous deferrals, the Department of Defense is now forced to modernize and recapitalize our NC3 architecture and all three legs of the nuclear triad simultaneously, while balancing overall Air Force modernization to remain ahead of adversary capabilities across all domains. Despite these difficult choices, modernization and recapitalization of the NC3 architecture and the nuclear triad remains the number one priority of the Department of Defense and is both necessary and affordable.

The Minuteman III (MMIII) is currently 39 years beyond its intended design life, and another life extension would be both costly and fiscally irresponsible. The strategic industrial base, supportability of several aging components, and increasingly lethal defenses make modernization of the weapon system necessary to ensure the credibility and effectiveness of our strategic deterrent in the future. The Air Launched Cruise Missile (ALCM), which is operating 26 years past its design life, faces similar challenges and must also be modernized.

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 little margin for delay with every new program delivering just in time for its legacy counterpart to be retired. The Air Force maintains that 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. However, the Department of the Air Force remains postured to provide operational and programmatic options to hedge against unforeseen roadblocks, while we continue to aggressively execute the programs of record to meet the demands of the combatant commanders.

## **MODERNIZATION AND RECAPITALIZATION**

The Department of the Air Force continues to maintain a strong, mutually supportive partnership with the Department of Energy's National Nuclear Security Administration (NNSA) and our National Labs, which are operating at full throttle 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 the next decade. To that end, in the Fiscal Year (FY) 2021 President's Budget request, the Department of the Air Force is investing \$12.8 billion dollars in the sustainment, modernization, and recapitalization of the nuclear enterprise—an 8.3% increase over the FY20 President's Budget request and in line with Air Force budget estimates.

Additionally, the FY21 budget request fully funds sustainment efforts for MMIII, ALCM, UH-1 helicopter, and nuclear-capable bombers. All major recapitalization programs, including B-21, Ground Based Strategic Deterrent (GBSD), Long Range Standoff Weapon (LRSO), and the MH-139 helicopter are robustly funded. The Air Force is also addressing critical manpower requirements; funding 1,444 civilian positions in our nuclear recapitalization and sustainment workforce within this Fiscal Year Defense Plan (FYDP) to keep our current programs on time and within budget.

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

The Department of the Air Force continues to invest approximately \$3 billion dollars annually in NC3 programs so our national leaders and senior commanders can detect threats, decide on actions, and direct forces. The FY21 President's Budget request fully funds multiple high priority NC3 programs to ensure a robust and resilient architecture integrated through space, aerial, and terrestrial network layers. The Next-Generation Overhead Persistent Infrared (OPIR) system constitutes a survivable next generation missile warning constellation. With Congressional support, the Next Generation OPIR program is currently on track to meet a 2025 requirement date, a program timeline far faster than historical norms due to streamlined acquisition, competitive prototyping, and extensive reuse of mature satellite and sensor technologies. The Department is also investing in recapitalization efforts for platforms like the E-4B National Airborne Operations Center (NAOC), while perusing enhancements to critical Satellite Communications (SATCOM) constellations, emergency conferencing systems for senior decision-makers, fielding radios and satellite terminals for our strike platforms and command posts, upgrading nuclear planning and decision support systems, and modernizing our aging terrestrial networks. With the continued Congressional support to provide stable funding, the Department of the Air Force will be able to maintain momentum toward NC3 modernization for the near term, and for the next generation beyond 2030.

## **INTERCONTINENTAL BALLISTIC MISSILES**

The Minuteman III remains an indispensable part of the nuclear triad; however, the Air Force is losing the ability to cost-effectively sustain it. The first MMIII missile was deployed in 1970 and more than twenty modernization and sustainment programs are required to keep it until replaced by GBSD beginning in FY27. The MMIII Depot Maintenance Program was started to sustain the legacy weapon system up through the deployment of the GBSD. The Air Force continues to work

across multiple lines of effort to ensure the legacy ICBM force remains safe, secure, reliable, and effective for as long as possible. However, the MMIII sustainment efforts cannot change the reality that the legacy platform will not meet the future strategic requirements. As a result, the Air Force is committed to delivering the GBSD on time and on budget as a national imperative for the capability and credibility of the ground leg of the nuclear triad beyond the next decade.

In FY21, the Department of the Air Force plans to invest \$1.5 billion dollars into the GBSD program as it begins the first full fiscal year of the Engineering and Manufacturing Design (EMD) phase, where we will complete full system integration, develop affordable and executable manufacturing processes, complete system fabrication, and test & evaluate the system. Despite any perception of high costs, the GBSD weapon system will provide a cost-effective solution that adds increased capabilities, maintainability, and the ability to evolve with the future threat that is required for deterrence through 2075.

### **BOMBERS AND DUAL CAPABLE AIRCRAFT**

The nuclear-capable bomber force represents the most flexible leg of the nuclear triad. Our future bomber, the B-21 Raider, is fully executing in the Engineering and Manufacturing Design phase and the Air Force is closely monitoring the build of the initial test aircraft. Over the last year, the B-21 completed the first round of software development and continues to progress on schedule. Combined with the LRSO, investments in the B-21 and B-52 will maintain America's capability to deter adversary aggression, assure allies, and project combat power across the full spectrum of conflict.

To make this all a reality, the Department of the Air Force is employing cutting-edge techniques during the design and manufacturing of these weapon systems, including model-based systems engineering (MBSE) and modern software design strategies. The LRSO, GBSD, and B-21 programs fully exploit modern software development methods and industry best practices that enable us to meet rapidly changing threat environments today and in the future. Those methodologies inform the Air Force's software development focus areas by employing techniques that include; (1) full digitalization of the design, manufacturing, test and sustainment process via the Digital Design, Digital Twin, and Digital Thread processes, allowing us to replicate the manufacturing process and identify gaps before we ever bend the first piece of metal, saving time and money; (2) utilizing government owned and managed advanced open system architecture down to the component level that will allow the system to cost effectively evolve to meet unforeseen security challenges; and (3) using continuous secure software development via the Development, Security, and Operations (DevSecOps) process, allowing the Department to deploy automated tools, services, and standards that enable us to develop, secure, deploy, and operate applications in a secure, flexible and interoperable way that maximizes the benefits of iterative development, while reducing schedule risk, preserving or offsetting costs, and driving down other risks across the lifecycle of these weapon systems.

## **CONCLUSION**

Our deterrence relies on the credible capability to hold targets at risk and to deny a potential adversary's ability to do the same. The United States must remain prudent, on behalf of ourselves and our allies, to ensure there is no advantage to be gained by our adversaries in their pursuit or employment of WMD. To accomplish this, the Department of the Air Force, along with the National Nuclear Security Administration and the National Laboratories, will continue to aggressively execute the programs of record that sustain, modernize and recapitalize our nuclear deterrent. The Air Force is committed to providing stable requirements and funding for the current programs across the enterprise as we have in the FY21 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 Department of Defense and National Nuclear Security Administration enterprises as the surest way to avoid gaps in our national strategic deterrent.