

**DEPARTMENT OF THE AIR FORCE
PRESENTATION TO THE COMMITTEE
ON
ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES**

**SUBJECT: MILITARY ASSESSMENT OF
NUCLEAR DETERRENCE REQUIREMENTS**

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INTRODUCTION

Credible and effective nuclear deterrence capabilities remain foundational to US national security. As long as nuclear weapons exist, the United States must deter attacks against the homeland and assure our allies and partners, and maintain strategic stability. In support of this vital mission, your United States Air Force is responsible for: two-thirds of the nation's nuclear Triad, including more than 400 Intercontinental Ballistic Missiles (ICBMs), and 66 nuclear-capable bombers; approximately 75% of the nation's nuclear command, control, and communications (NC3) systems, and a force of dual capable aircraft (DCA)—fighter aircraft capable of carrying nuclear weapons. Most importantly, nearly 30,000 Airmen across the nuclear enterprise work tirelessly ensuring our nuclear capabilities remain safe, secure, effective, and ready. While our Airmen are standing watch to defend our Nation and deter potential adversaries today, Air Force nuclear capabilities must be modernized to ensure future strategic deterrence.

Today, the Air Force stands at a critical junction with regard to our ability to continue providing effective nuclear deterrence to the Nation and our allies and partners. The majority of our vital capabilities in this area—delivery platforms and weapons, NC3 systems, and the supporting infrastructure required to operate them—were last recapitalized in the 1980s and are now decades beyond their projected service lives. We are rapidly approaching a point where the series of costly and complex life extension programs we have relied on to sustain these systems will no longer be sufficient to maintain required mission capabilities. Therefore, nuclear enterprise modernization efforts are vitally important. **In other words, the stark**

choice the US faces today is not between modernizing these systems or continued life extension programs...the choice is between modernization or losing these foundational capabilities starting in as early as the late-2020s.

Air Force nuclear capabilities are vital elements of strategic deterrence. Our ICBMs, bombers, dual capable aircraft, and NC3 systems provide unique and complementary effects to deter potential adversaries and assure our allies. Our ICBM force is responsive, cost-effective, and provides stability by creating an extraordinarily high threshold and cost-imposing challenge for a large-scale conventional or nuclear attack on the US based on the size and dispersed nature of the ICBM forces. Our bomber fleet provides visible, flexible deterrent options to the President while remaining central to our long-range strike capability of holding any global target at risk within hours. Our dual-capable, forward-deployed fighter aircraft augment the strategic deterrent capability of the Triad, reassure allies, and are a core component of our NATO Alliance. Linking the nuclear enterprise together, Air Force NC3 architecture is critical to connecting the President with his senior advisors and nuclear forces.

While the Budget Control Act (BCA) and Bipartisan Budget Act of 2013 and 2015, respectively provided some relief to continue modernization efforts, the Air Force needs continued Congressional support to provide and maintain a credible nuclear deterrent well into the future, especially as we face significant modernization costs in the coming fiscal years. Providing necessary funding to maintain a safe, secure, and effective nuclear force is a national obligation. Three Congressional actions will support our efforts: 1) Congressional support to pass an appropriation, 2)

supporting a budget amendment, and 3) in FY18, repealing BCA while providing predictable future funding.

Finally, we need Congressional support to prevent a year-long continuing resolution (CR). Under a year-long CR, future NC3 manpower would receive \$500 million less than our FY 2017 request. Further, five critical nuclear modernization programs would be delayed; including necessary upgrades to B-2 and B-52 bombers, ICBM life-extension efforts, and delays to our Long Range Stand Off Weapon (LRSO) and Ground-based Strategic Deterrent (GBSD) contract process, risking that replacement weapons will not be ready prior to Air Launched Cruise Missile (ALCM) and ICBM age outs.

STRATEGIC ENVIRONMENT

Today, the United States faces an extraordinarily complex and dynamic geopolitical landscape, one that requires the nation to maintain strategic stability with both existing and emerging nuclear powers. Nuclear forces play an increasingly important role in the security strategies of other state actors, such as Russia and China, who continue to develop new systems, and modernize existing arsenals. Today, in terms of nuclear capabilities, Russia is our only peer, and will likely remain so in the coming decades. Although not nuclear peers, China and North Korea continue to significantly enhance their nuclear weapons capabilities.

Russia's continued aggression and provocations, its demonstrated willingness to violate the sovereignty of its neighbors, and its disregard for its international commitments, poses a clear threat to global stability. Russia's robust nuclear modernization programs place strong emphasis on their ICBM forces, ballistic missile

submarines, nuclear-capable strategic bombers, and nuclear cruise missiles.

Meanwhile, China continues to challenge international norms with the militarization of the South China Sea, while investing in enhanced nuclear capabilities, to include mobile ICBM systems and counter-US ballistic missile defense technology. Finally, North Korea's efforts to expand its nuclear stockpile and develop advanced ballistic missiles capable of threatening US and Allied interests, is deeply concerning.

Potential adversary technological advances pose a credible and growing threat to US nuclear effectiveness. These nations continue to prioritize investment and progression of their own nuclear enterprises. To maintain strategic stability with Russia and China, and address the growing threat from North Korea, the US must accordingly invest in its foundational and critical nuclear capabilities.

MODERNIZATION IMPERATIVE

We cannot afford to wait until tomorrow. Today, the nation must preserve our foundational nuclear capabilities vital to a credible deterrent against any future threat. Significant obsolescence and asset attrition across our nuclear weapons systems threatens operational readiness and poses a growing challenge to our ability to sustain our capabilities. Across the board, current service-life extension programs (SLEPs) will not be able to preserve required mission capabilities indefinitely.

The Air Force requires additional resources to invest in our nuclear capabilities and infrastructure. Currently, all of our weapons storage areas are operating with waivers and deviations from our high standards. Although these storage areas are safe and secure, they are decades old and the infrastructure is failing. Furthermore, their locations do not meet operational bomber requirements. We must recapitalize to

address the recommendations identified in the 2014 Nuclear Enterprise Reviews for facility and weapons sustainment.

The Minuteman ICBM force was initially fielded in the early 1960s and upgraded with the Minuteman III missile in the early 1970s. The aging Minuteman infrastructure, command and control, and flight systems must be replaced with the GBSD. While the Minuteman will be sustained beyond 2030 as the GBSD capability is deployed, it is important to realize that it cannot be sustained beyond 2036. Current Air Force plans are to field GBSD starting in 2027 and continuing through 2035; once operational, the system will provide a low risk and affordable integrated weapon system through 2075.

Meanwhile, we must continue to invest in modernization of our air-based nuclear weapons systems. On average, our bombers are 45 years old and our nuclear weapons facilities are now over 40 years old, with many facility systems operating well past their designed service life. Our flexible dual-capable bomber fleet is the most visible leg of the nuclear triad. The B-2 and B-52 require upgrades, and we must ensure one of our main acquisitions priorities, the B-21 bomber, proceeds on schedule. Accordingly, NC3 must be modernized to support accompanying nuclear capabilities, as it underpins our national nuclear employment option.

We must also make the needed investments to support our weapons, specifically the B61-12 and the Long-Range Standoff programs in conjunction with the Department of Energy's National Nuclear Security Administration. Both programs are vital to provide necessary options to the President in a range of scenarios, to deter our adversaries, and assure our allies. Though we are grateful for modest relief of

spending limitations that allowed us to address a scrutinized priority list of nuclear modernization efforts, we require additional resources to invest in foundational nuclear capabilities and infrastructure.

NUCLEAR PROGRAMS AFFORDABILITY AND PRIORITIZATION

DoD nuclear programs account for a relatively small percentage of current and projected defense spending. The DoD nuclear enterprise requires significant investment for critical modernization and recapitalization efforts: \$350B - \$450B over the next two decades for both Air Force and Navy systems. Based on OSD estimates, Triad programs (Air Force and Navy) account for an average of 3.7% of the Department of Defense budget over the approximate 20-year recapitalization timeframe. However, modernization costs represent a significant challenge to the Air Force budget under current constraints. Effective 21st Century deterrence demands properly balanced nuclear and conventional forces and current Air Force Total Obligation Authority is insufficient to accomplish both. Nuclear deterrence and conventional capabilities are both vital to national security requirements. The Air Force will continue to prioritize investment across our nuclear enterprise, investing in: ICBMs/GBSD, our bomber fleet (B-52, B-2, and B-21), weapons (B61-12 and LRSO), and NC3.

GROUND-BASED NUCLEAR DETERRENCE CAPABILITIES

We must invest in GBSD as the next major improvement to the land-based portion of our nuclear Triad. The GBSD program will reach initial capability in 2029, planned full capability by 2036, and continue to meet operational requirements through 2075. The program is comprised of three major efforts: missile flight systems,

weapon system command and control, and launch systems and will provide 400 operationally deployed missiles. Meanwhile, we are committed to investing in our aging ICBM Minuteman III systems, ensuring reliability and supportability through 2036, or until GBSD is fully operational. The Air Force is confident in its cost estimate analysis and is continually seeking innovative methods to reduce production costs throughout GBSD design and development. Ultimately, Minuteman III life-extension programs are costly—more costly than replacement—and will not meet combatant commander and national security requirements.

AIRBORNE NUCLEAR DETERRENCE CAPABILITIES

The Air Force nuclear bomber fleet, consisting of the B-52 and B-2, remains the most flexible leg of the nuclear Triad. Our 19 B-2 bombers, providing the nation's only low-observable, penetrating, multi-role capability, need multiple upgrades to remain viable into the late 2020s. Major modification programs include: an updated defensive management and threat warning system, survivable and high-bandwidth communications, weapons stores management, and logistics and maintenance improvements.

An enduring icon of American airpower, the B-52 remains a workhorse for the joint force, providing robust nuclear and conventional capability. We plan to invest in multiple B-52 major modernization programs to bring our aging technology up to par. From avionics and weapons upgrades to datalink and radar modernization, the B-52 requires significant investment, including five new-start programs in FY17. We must also explore options to replace the B-52's inefficient legacy engine. If we are to rely on the B-52 until at least 2050, these upgrades are essential.

Technology gaps between the US and potential adversaries are closing. The B-21 will support the nuclear Triad by providing an advanced and flexible deterrent capability, with the ability to penetrate modern and future air defenses. Further, the B-21 will provide flexibility across a wide range of joint military operations using long range, large mixed payloads, and survivability. Agile acquisition processes have been built into the B-21 development and procurement efforts, ensuring we deliver system capabilities for the best value, while integrating open architecture for ease of upgrade to future technology requirements.

The Air Force remains committed to B-21 affordability, with the average procurement cost of \$564 million in base year 2016 dollars. We require a fleet size that will ensure sustained dominance well into this century and intend to procure a **minimum** of 100 B-21s. Procuring **at least** 100 B-21s will also reduce lifecycle ownership costs. Further, we are continuing to study the right size of the total future bomber force. Deterrence and demonstrated combat capability remain vital instruments of power, especially as our enemies are committed to denying our attacks from the air. Only 12% of our current bomber fleet is survivable in such an environment. Therefore, the B-21 remains an absolute national defense priority and we are grateful for your continued support of this critical program going forward.

Fielded in the 1980s, the AGM-86B ALCM is over 25 years beyond its life expectancy and is involved in its third life extension program. While the ALCM remains effective today, its aging subsystems, advances in enemy defenses, and a simple lack of numbers mandate we replace it. The Air Force plans to sustain ALCMs until our Long-range Stand Off (LRSO) weapon reaches operational capability in

2030. We plan to invest in continued life-extension programs including critical telemetry, encryption, and flight termination components. Meanwhile, we continue to invest in developing and fielding the LRSO. This weapon will retain nuclear penetrating cruise missile capabilities through 2060. To meet operational, testing, and logistics requirements, the Air Force plans to acquire approximately 1,000 LRSO cruise missile bodies. This quantity will both provide spares and supply sufficient non-nuclear missile bodies throughout ongoing flight and ground testing. The number of nuclear-armed LRSO cruise missiles (i.e., mated to a nuclear warhead), is expected to be equivalent to the current ALCM nuclear force.

.Finally, the B61 family of gravity nuclear weapons support the airborne leg of the Triad and is the primary weapon supporting our NATO allies under extended deterrence. Legacy B61s require service-life extensions. The B61-12 life-extension provides required digital weapons interfaces and adds a guided tail kit assembly. This warhead life-extension, through the Department of Energy's National Nuclear Security Administration, improves reliability, safety, and security, while reducing life cycle costs and enabling us to reduce the stockpile by consolidating four weapons versions into one.

UH-1N

The Air Force is committed to replacing the UH-1N fleet, which supports two critical national missions: nuclear security in support of the ICBM force and the Continuity of Operations mission in the National Capital Region. The UH-1N platform falls short of missile field operational needs—notably with speed, range, endurance, payload, and survivability. The Air Force is pursuing a full-and-open competition to

procure 84 replacement helicopters. We plan to release the final request for proposal in summer 2017, with delivery of the first operational helicopters anticipated in FY20 to 21.

NC3

Air Force NC3 systems connect the President to his senior advisors and nuclear forces. Many of our NC3 systems are well past their lifespans. Therefore, we are investing in several programs to support this connective architecture, ranging from communications systems improvements to upgraded digital processing and display improvements. NC3 also includes the modernization of our E-4B aircraft, providing airborne nuclear command and control capability. We need support to upgrade E-4B communications and surveillance systems.

NUCLEAR ENTERPRISE REVIEW IMPLEMENTATION

In 2014, the DoD Nuclear Enterprise Reviews (NERs), along with internal Air Force assessments, served as a catalyst for major improvements within the Air Force nuclear enterprise. Since 2014, the Air Force has applied deliberate and sustained focus towards addressing the identified shortfalls. Our ongoing efforts—spanning the full-range of personnel, management, oversight, mission performance, training, testing, and investment issues—continue to produce tangible and lasting improvements throughout the nuclear enterprise. Over time, Air Force follow-on efforts have transitioned from addressing urgent mission deficiencies to longer-term initiatives. As part of this evolution, the Air Force is placing renewed emphasis on establishing effective processes to continuously assess and oversee the health of the nuclear enterprise.

CONCLUSION

The technology and capability gaps between our nation and its adversaries are closing dangerously fast...and in some cases, have closed completely. Fighting a nuclear war is an unthinkable proposition, and has been for the last 70 years, precisely because the nation has been prepared to fight one. The best way to avoid unthinkable conflict is to be prepared to fight with modern and reliable forces. To do otherwise, by delaying modernization once more, is irresponsible and invites strategic instability, potential miscalculation, and the risk of a devastating nuclear exchange. We stand at a pivotal point in history where the American people and our allies are counting on Congressional action to fund our nuclear enterprise modernization.

We remain committed to innovative and cost-saving measures to ensure weapons system and acquisitions efficiency. However, we need your support to first, pass an appropriation in FY17 and support a budget amendment. Second, we must repeal BCA in FY18 and provide predictable funding for the future. This allows us to proceed with a strategy-driven budget and not the compromising budget-driven strategy consistent with BCA. Thank you for your continued support of our Air Force and our outstanding 660,000 Total Force Airmen, who relentlessly and professionally serve our great nation by providing two-thirds of the nation's nuclear capability.