Foreword

With the bonafides of a veteran practitioner, Maj. Gen. Don Alston, USAF, Ret. enumerates for President Donald Trump and the nuclear policy community twelve points that evince the strategic importance of the ICBM — as a bulwark against enduring and expanding threats, as an incomparable leg of the Nuclear Triad, as an indispensable contributor to our conventional forces, and as a preserver of our strategic nuclear deterrent.

Nuclear weapons have deterred nuclear, chemical and biological attack on the United States and our Allies for more than seven decades. Recognition and fear of the consequences of crossing the threshold to employ nuclear weapons have immeasurably dampened the risks of military escalation. The presence of a nuclear arsenal has also contributed to the resolution of geopolitical competition at far less material cost and loss of life than before the nuclear age. The last great war before the advent of nuclear weapons killed 3% of the world’s population — on average over thirty thousand people a day for six years — if sixty-six million is a fair estimate of total deaths during World War II. Historically, the nuclear triad has been a successful means to deter world war, and the ICBM alert force, in particular, contributes to this security equation like no other nuclear or conventional force. After eliminating nearly 90% of our weapons over the past fifty years, we have begun to recapitalize our nuclear forces so that they can continue to execute their indispensable role deterring 21st century existential threats.

The challenges of nuclear proliferation and multipolarity will place complex demands on this and future Administrations. The Executive and Legislative branches of the United States government must collaborate in a bi-partisan manner to re-invest in our nuclear forces and re-energize the scientific, technological and organizational infrastructure to support them. This will take time. It will require anticipatory leadership and steadfast discipline. However, the benefits from today’s commitments not only serve to shore up and solidify current international security relationships, but will serve as the foundation of any evolving security frameworks in the decades to come. Maj. Gen. Don Alston, USAF, Ret. continues his service to our Nation herein by cogently and concisely advising a course of action that will help to preserve American interests and to protect the American people.

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Chairman of the Board
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The United States is in the early stages of recapitalizing each leg of the nuclear triad. Sustaining this decades-long effort will be challenging. There are well-funded, energetic domestic and international movements relentlessly pushing for wholesale nuclear disarmament, and regardless of how unachievable disarmament is today, the companion rhetoric rarely includes detailed representations of the risk and discounts the realities that came with the bomb. Kennedy referenced a nuclear Damocles to assert the risk of nuclear annihilation. However, that risk also secured restraint from total war for the past seven decades.

The next seven decades, however, will be more complicated, and in some ways, more dangerous than the Cold War. Expanding nuclear arsenals are increasing both in numbers and capabilities. Nuclear proliferation is more probable than not, and with proliferation comes new and different regional security challenges. Multipolarity with the prospect of nuclear weapons states aligning with other nuclear weapons states will drive unprecedented geopolitical competition and the need for new security frameworks to achieve and preserve stability. Would that it be not so, but security and stability will continue to pivot around nuclear weapons.

Despite how relatively cheap strategic forces are to operate day-to-day — historically 4% of the Department of Defense budget — procurement of the next generation of nuclear forces comes with a bill and will ultimately expose real Service and national priorities. The Navy has a program underway to field the Columbia-class SSBN submarine, the Ohio-class replacement. The Air Force has considerably more variety on its budget plate with the acquisition of the B-21 bomber, the Air Launched Cruise Missile follow-on – known today as the Long Range Standoff (LRSO) weapon,
and the Minuteman III follow-on – the Ground Based Strategic Deterrent (GBSD). The F-35, the new Dual Capable Aircraft that will underpin NATO’s nuclear delivery capability, is still moving towards nuclear certification and the weapon it will carry, the B-61, is being retooled to support the F-35, the B-2 and the NATO Alliance. The Air Force shares a portion of the cost of this program. The Air Force also has responsibility for the lion’s share of the nuclear command and control modernization. Additionally, the Air Force must continue modernizing the tanker fleet, replacing the KC-135 whose production ended in 1965. The costs associated with the concurrent nuclear modernization spread over 20 years will be an estimated $350 billion to $450 billion according to the DoD, a sum substantially below the costs promoted by opponents of these long-deferred programs.

Enduring and Expanding Threats

The threats today and for decades to come are significant and growing. As the commander of the ICBM force from 2010 to 2012, and before that as the first Assistant Chief of Staff for Strategic Deterrence and Nuclear Integration on the Air Staff, I spent a great deal of time listening to the men and women who provide the ground-based nuclear alert force for our country. Those dedicated, tuned-in professionals shared their concerns trying to reconcile the threats they saw from Russia, North Korea, Iran, and China against the largely unattenuated disarmament drumbeat. Russian and Chinese nuclear weapons modernization programs rival those of the 1950s nuclear arms race. Russia now professes a “first use doctrine,” and employed explicit nuclear coercion signals with its offensive military actions in Crimea and Ukraine. Throughout Russia's
Intervention, Putin has put on a clinic on how to successfully leverage nuclear weapons to acquire territory and achieve political objectives by rolling out a string of leaders to remind the West that Russia is a nuclear weapons heavy weight and that others should measure reaction with great care. It seems to have worked as NATO and the United States took no effective action to curb Russian behavior. Was Russia emboldened by the West’s ineffective response in Ukraine to take military action in Syria in support of the Assad regime? The West in general and the Baltic countries formerly in the Soviet Union in particular are messaged by large scale Russian exercises and by Russian military aircraft periodically making mock attack runs against US vessels that encroach on sovereign airspace and instigate reactive interceptions. If Putin’s long game is to ultimately dismantle NATO, he may be seeing progress as Alliance members weigh positions with concern for his next move. In addition to the indiscriminate threats, Russia has directly threatened Denmark, Poland, Turkey and Saudi Arabia with nuclear weapons, the shadow being cast largely by a superiority of thousands of non-strategic nuclear weapons, a class of weapons not even pursued in the New START Treaty.

China, unconstrained by nuclear arms treaties, continues to modernize its triad by creating more mobile missiles with MIRV capabilities. Additionally, China continues to improve both the range and promptness of its delivery systems.¹

North Korea’s series of provocative nuclear detonations and frequent missile launches have caused South Korea and Japan to reevaluate their respective national security options to meet this urgent threat.

Iran continues ICBM development – for what purpose other than to deliver a nuclear weapon?

In light of these facts, it is good that the United States purchased a nuclear force structure to address an adversary’s capabilities and did not roll the dice by undertaking unilateral nuclear reductions in the hope that others would follow our lead.

Some say we can trade nuclear capabilities for conventional capabilities. In fact, our conventional capabilities are unrivaled and the envy of other militaries throughout the world. That highly visible power probably led some nations to seek a nuclear equalizer. Notwithstanding this, a good friend once told me that the only case against conventional deterrence is… 4,000 years of history. World War II casualties averaged out to approximately 30,000 people a day for 6 years.

In a world with nuclear weapons, the absolute number of war deaths has decreased strikingly since 1945. Until nuclear deterrence is no longer essential to curb existential threats, nuclear weapons will remain vital to extend the unbroken string of seven decades without a hostile nuclear yield.

The Nuclear Triad and the ICBM in Context

More than a third of the nuclear age has expired since the close of the Cold War. Two more nations have joined the nuclear club. The aggregate risk of a hostile nuclear detonation today is different and greater than that risk during the Cold War. Unlike the Cold War, there are regional nuclear contexts in East Asia, South Asia, and the Middle East. There is an international nuclear terrorism context as well. What US nuclear force structure ensures our national security against potential existential threats? Can that force structure contribute to global and regional stability?

Our nation requires an answer to these existential threats. For more than 50 years, the land-based ICBM, the submarine-deployed SLBMs and the manned bomber force have presented potential adversaries a force of sufficient size and diversity that is too challenging to defeat. This triad of capabilities stands as an example of Pentagon weapons programs that have constantly achieved their designed effects since the day they were originally deployed. The balanced triad has presented overwhelming challenges to attacking forces, and it continues to be such a diverse retaliation force that there should be no doubt as to US capacity to respond if ever required. The grotesque choice is always the adversary’s to make, but for nearly 60 years of triad operations the answer has always been “not today.”

Each leg of the US triad is responsive, though
Major General Don Alston, USAF, Ret.

the ICBM is the most responsive with virtually every Minuteman III on alert — safe, secure and ready to launch.

Each leg of the triad is survivable, particularly the deployed portion of the SSBN force, and both the bomber and submarine force are even more so when fully generated and dispersed. In the remote chance of an existential attack by Russia in which Russia chooses to expend most of its nuclear weapons to hold the ICBM alert force at risk whereas day-to-day, an adversary would not need to cross the nuclear threshold to encumber two SSBN ports and a couple bomber bases. Without the ICBM alert force, the cost of holding US strategic capabilities at risk declines greatly (to arguably 2% of the cost to hold today’s force at risk) and creates opportunities for states with far less capabilities than Russia to pursue geopolitical advantage at the expense of our national security objectives.

Each leg of the triad has some flexibility, but the bomber force is acknowledged to be the most flexible, with substantial value during crisis escalation. The bomber force has a legacy as an articulate expression of our strategic capabilities and US resolve, even though it has not been on

ICBM operations crew in training. (US Air Force photo)
ICBM force reductions were dramatic between the mid-80’s and the mid-90’s – nearly fifty percent of the force was retired. During the first decade of this century another near-twenty percent were eliminated (100 missiles), to include the only squadron of 50 Peacekeeper missiles that carried ten-warheads each. Pressure continued on the Air Force for further reductions as the Obama Administration began work on the Nuclear Posture Review and the New START treaty in the spring of 2009. As the principal flag officer representing the AF in these processes, we effectively made the case that the ICBM floor had to be 400 ICBMs without incurring substantial additional national security risk given existing Russian nuclear capabilities. This was during a time when the Administration hoped to “reset” the geopolitical relationship with Russia. That optimism has long evaporated, but lest there be any lingering doubt as to the bedrock value of the ICBM force, let’s examine risk.

A potential foe must first account for the US ICBM alert force as it weighs the costs and benefits of attacking the United States with nuclear weapons. The size and credibility of the Minuteman force has ensured potential adversaries’ daily conclusion that the cost of nuclear attack would never be worth the risk. The value of deterrence, however, is not limited to inhibiting attack. Adversaries can have no incentives to pursue self-interests that would so jeopardize our vital national security interests and those of our Allies that they might be willing to risk crisis escalation to the point where the stakes can become existential.
The ICBM alert force provides our nation and our Allies a range of benefits:

- **Point #1 - The Alert Force.**
  Day-to-day, the ICBM force is the backbone of US nuclear deterrence: visible to assure friends and deter potential foes, with the most weapons immediately available to the president of any triad leg. The entire land-based leg of the triad is fully-generated with ready crews in place, but for scheduled maintenance and the occasional missile that falls off alert. Deterring Russia and others requires a complex range of capabilities and actions and among these is the unblinking ICBM alert force.

- **Point #2 - No “Hair Trigger.”**
  The first strike deterrent value of the ICBM is a consequence of its on-alert responsiveness. Though the Minuteman III can be launched within minutes of an order from the President, the missile crews must receive data authorized by the Presidential order to mechanically configure the weapon system for launch. Even after receiving the launch order, the system will not respond without synchronized actions of multiple crews who all must agree the launch order is authentic. The US warning and attack assessment capabilities include space-based sensors and ground based radars that independently process evidence of potential threats to inform national leaders whether or not an attack is underway. The process to launch a US nuclear weapon is not one set for release at the slightest pressure, i.e., “hair trigger.”

- **Point #3 - Size + Distribution = Stability.**
  A visible, homeland-based alert force of 400+ ICBMs with a single warhead each distributed over tens of thousands of miles presents arsenal-consuming targeting demands for a likewise-treaty-constrained Russian force, lest the attacker risk overwhelming US retaliation. The decision to download to a single warhead, multiplied by 400+ ICBMs has increased the value the ICBM leg of the triad contributes to stability between Russia and our country. The size of the ICBM force is the counterweight to Russia’s Strategic Rocket Forces. Any unilateral decrease in the number of distributed Minuteman ICBMs will drive increased risks to nuclear stability.

- **Point #4 - Resilient Nuclear Command and Control.**
  The ICBM alert force has the most assured, resilient and survivable nuclear command and control links, to include an airborne launch capability that can launch the Minuteman force even if the ground-based launch control centers were incapacitated. This resilience further reinforces the insurmountability of successfully attacking the ICBM force.

- **Point #5 - Enables Triad Generation.**
  The ICBM alert force enables the full generation of the SSBN and bomber legs, assuming we recognize strategic warning, have the political will to escalate, and have the time to do so. If we don’t recognize strategic warning, or lack political will to escalate, or don’t have the time to do so, then you’ve only got the entire ICBM force and the SSBNs that are available at sea.

- **Point #6 - Maximum Readiness by Design.**
  The ICBM is the only leg of the triad that is — by design — sustainable at the maximum level of readiness indefinitely.

- **Point #7 - Most Stabilizing Value of Any Triad Leg.**
  The ICBM adds significant stabilizing value from peacetime to extremis, more than the remaining two legs of the triad. Dr. Chris Yeaw, the former director of the Center for Assurance,
Deterrence, Escalation and Nonproliferation, Science and Education (CADENSE) has done some groundbreaking work examining the value of each triad leg across crisis escalation, using data generated from the US Naval War College Deterrence and Escalation Game & Review (DEGRE) war game series. He found targeting ICBMs as highly escalatory at all levels of crisis because of their high numbers and because the force is homeland-based.

**Point #8 - Stability Value During Crisis.**

The ICBM force is a vital contributor to crisis stability, a core national security concept. When crises occur, there must be means to prevent them from escalating out of control. One means is to present the adversary with the threat posed by a visible, invulnerable, immediate, overwhelmingly effective striking force. That, in turn, results in the adversary neither launching a preemptive strike nor escalating to dangerous levels that lead to war. An adversary cannot be allowed to escalate its way out of failed aggression.

**Point #9 - Assurance to Allies.**

The crisis stability provided by the ICBM force as a leg of the triad also extends to our Allies. The fear in others that the US nuclear forces could be used against them if they attacked our Allies with nuclear weapons not only reduces the risk of that happening, but again, extends to every day diplomatic exchange, and provides a credible alternative to Allies who might otherwise pursue their own nuclear backstop. To the extent US nuclear deterrence assures our Allies, nuclear weapons proliferation is less likely, increasing regional security and stability.
**Point #10 - Visible Backdrop Everyday.**
In non-crisis situations, the stabilizing effect provided by the presence of the ICBM alert force moderates potential coercive diplomatic behavior because of the length of the shadow cast by the force. Indeed, our ICBM alert force contributes to US diplomatic initiative every day by helping set conditions for conflict resolution below the nuclear threshold where our instruments of national power can drive outcomes and where our conventional capabilities, if needed, have no match. For example, did the US nuclear alert force enable the unchallenged two-day USAF airlift of 1,800 Georgian peacekeepers from Iraq to Tbilisi during the 2008 Russian invasion of Georgia?

**Point #11 - Cheapest Triad Leg.**
The ICBM alert force is the most cost-effective leg of the triad by far, costing half as much as the bomber leg to operate day-to-day, and less than one-third the cost of the submarine leg.

**Point #12 - Hedge Against Breakout.**
The Minuteman III force is also part of our hedge strategy against an adverse change in geopolitical circumstances, such as treaty abrogation by Russia or technological breakout that drives a decision to re-MIRV and upload warheads. Uploading the bomber force can be done in hours and days. It would take considerably longer, and be uniquely escalatory to upload the ICBM force; however, there is substantial capacity available for this contingency.

Given the value the ICBM brings to strategic stability, 400 - 450 first-strike deterrent alert force delivery vehicles may continue to be a sufficient overwhelming force to a potential attacker that the decision is “not today.” The operative word here is “overwhelming.” There can be no incentives for potential attackers to seriously contemplate an existential attack on the US or its Allies. Without a robust nuclear alert force to deter military engagement, the US could be compelled to turn to its war fighting conventional capabilities, always employable at lower thresholds, but in this context, trying to cover provocative nuclear force generation and driving greater national security risk as the conflict escalates.

In the decades to come, but during the life of the Ground Based Strategic Deterrent (GBSD), foreign missile defense systems may exist that could pose challenges to a system limited to the physics of ballistic flight. To ensure the President has the utmost flexible options available, thought should be given to mobile systems and/or incorporating future maneuvering reentry systems. Russia and China are developing related technologies.

Preserving the Credibility of the Strategic Deterrent

Fewer US nuclear weapons do not make the world safer and de-alerting our force in a world where our existential competitor credibly espouses the first use of nuclear weapons in a war fighting context encourages aggressive geopolitical behaviors that may require some form of escalation to unscrew. Imagine a US posture in which the entire ICBM force had to be generated to nuclear alert status, and imagine the political heavy lift required to order the mass generation action, all while the threat driving the crisis continues — a crisis that may have never materialized had deterrence remained sufficient.

As the nation moves forward with strategic force modernization, realistic, thorough risk assessment should drive the development of a deterrent force that is sized and mixed to be used everyday to ensure the unthinkable remains unthinkable.
The Potomac Foundation

Background

The Potomac Foundation was founded in 1988 by the owners of the BDM Corporation at the time of its sale to the Ford Motor Company in order to continue a tradition of public service. During its first quarter century, The Potomac Foundation made significant contributions in the areas of Post-Cold War Defense Economics, National Competitiveness and assisting the nations of Eastern Europe and the former Soviet Union to become integrated with the West through preparation and entry into NATO.

Mission

The Potomac Foundation is a non-partisan, non-profit, independent and open-source research organization dedicated to improving the quality of public dialogue and national policy formulation that is financed by an endowment, foundation grants, and corporate contributions.

Research

The Potomac Foundation’s research is currently focused in five major areas:

- Russo-Ukraine War & Implications for East European Security;
- Russian New Generation Warfare & NATO’s Need for Theater-Strategic Planning;
- Future of Asian Security & Military Rise of China;
- Public Policy Implications of Technological Innovation;
- Challenge of Multipolarity & Nuclear Instability.

The Potomac Foundation has close ties with a number of universities. It hosts the European-American Security Workshop in Florence, Italy with Georgetown University; provides advanced simulation and modeling for the Baltic Defense College; and supports the Johns Hopkins University — Philip Merrill Center for Strategic Studies’ SAIS Summer Study. The Potomac Foundation has been at the forefront of the on-site assessment of the Russo-Ukraine War and China’s activities in the South China Sea. The Potomac Foundation has conducted research for the Department of Defense, US Air Force, US Army, NATO’s Allied Rapid Reaction Corps (ARRC) and collaborated with the governments of Estonia, Latvia, Lithuania, Poland, Sweden, and Ukraine.

A major emphasis of The Potomac Foundation is preparing the next generation. In this spirit, Senior Fellows work closely with International Fellows, Visiting Fellows, Junior Fellows and Interns in a collaborative research environment.

Leadership

Dr. Joseph V. Braddock is Chairman of the Board of The Potomac Foundation and a nuclear physicist, longstanding former Member of the Defense Science Board, and former Chairman of the Army Science Board. In 2012 Dr. Phillip A. Karber became the third President of The Potomac Foundation after having helped establish the organization and serving as a Senior Fellow. He has been adjunct faculty at Georgetown University since 1978 and is currently Professor of Strategy and Praxis for the Machiavelli Seminar. He has served as staff for the Congressional Joint Committee on Atomic Energy (JCAE), and as strategy advisor to the Secretary of Defense. In the private sector, he was a corporate executive at BDM Corporation and the Chairman of JFK International Air Terminal in New York City.
Engage in the Issues

The Potomac Foundation collaborates with subject-matter experts to formulate issue-specific contributions to the national and international political leadership and policy communities. If you wish to engage further in these issues by participating in meetings, speaking engagements, conferences, or collaborative projects, please contact:

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Meet the Author

Maj. Gen. C. Donald Alston, USAF, Ret. is a Senior Fellow at The Potomac Foundation and Permanent Faculty at the Air Force Institute of Technology School of Strategic Studies. Before retiring from the US Air Force in 2012, he was Commander, 20th Air Force, Air Force Global Strike Command, and Commander, Task Force 214, U.S. Strategic Command, Francis E. Warren Air Force Base, Wyo. He was responsible for the nation’s intercontinental ballistic missile force, organized into three operational wings with more than 9,600 people.

General Alston was commissioned in 1978 following graduation from the U.S. Air Force Academy. He has commanded at the squadron, group, wing and numbered air force levels. He directed the Air Force Nuclear Task Force which conceived and developed the roadmap, “Reinvigorating the Air Force Nuclear Enterprise,” that drove sweeping institutional change, to include the stand up of the first new major command in 15 years, the large scale expansion of the Air Force Nuclear Weapons Center and a major reorganization of the air staff. He served as the first Assistant Chief of Staff for Strategic Deterrence and Nuclear Integration. He has worked as liaison officer to the U.S. House of Representatives and also performed duties as the executive assistant to the Secretary of the Air Force in Washington, D.C. General Alston also served as the Deputy Chief of Staff for Strategic Communications and spokesperson for Multi-National Force — Iraq in Baghdad.

He is a graduate of the National Security Management Course at The Maxwell School of Citizenship and Public Affairs, Syracuse University and the Senior Executives in National and International Security Program, John F. Kennedy School of Government, Harvard University.