

The Need for a Strong U.S. Nuclear Deterrent In the 21st Century

A White Paper By Franklin C. Miller



THE SUBMARINE INDUSTRIAL BASE COUNCIL

About the Author

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About the SIBC

The Submarine Industrial Base Council (SIBC) represents the more than 5,000 businesses across all 50 states that provide critical materials and services to the U.S. submarine programs. The SIBC's mission is to educate policymakers and the public on the need to preserve the strength of the U.S. submarine force and promote the value of the submarine industrial base as a vital part of our national security structure.

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Summary

Nuclear weapons will continue to have a significant influence on international security for the foreseeable future. Except in the United States and the United Kingdom, the idea of eliminating nuclear weapons has not been proposed and seriously considered in the capitals of any of the nuclear weapons states. France, Russia, China, India, Pakistan, and North Korea have shown no inclination to accept the goal of eliminating nuclear weapons. Indeed, Russia, China, India, and Pakistan are all embarked on major nuclear weapons modernization programs. In such a world, the United States will continue to need a viable and effective nuclear deterrent to prevent nuclear attack or nuclear blackmail against the United States or our allies.



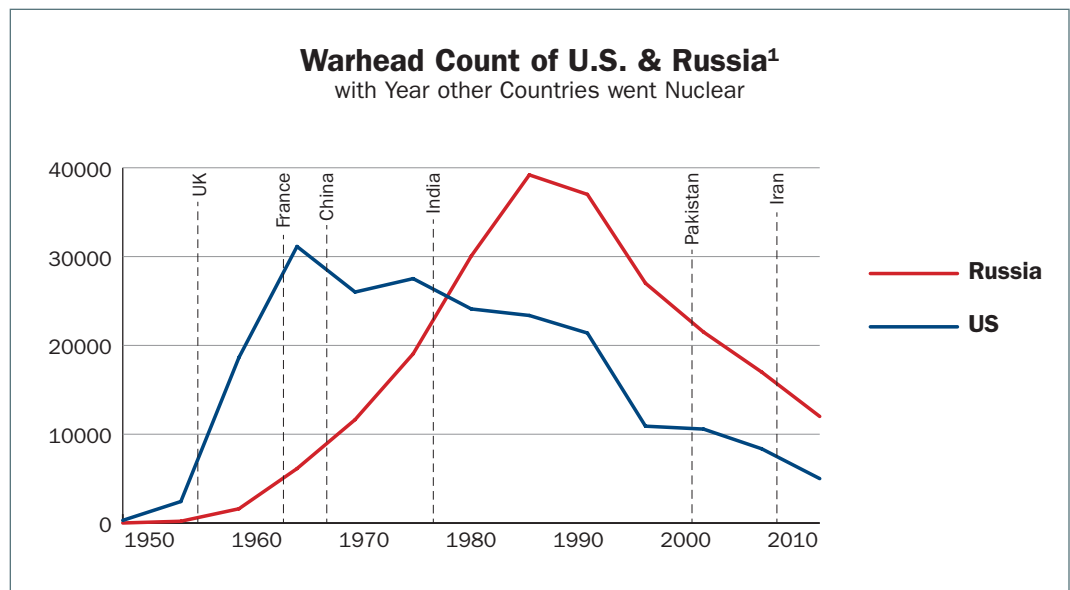
Global Nuclear Modernization

While the United States has deferred nuclear weapons modernization, other nations are moving forward.

- Among the so-called P5 nuclear weapons states, Russia is deploying a new generation of inter-continental ballistic missiles (ICBMs), and is contemplating building a second new type—a giant Cold War throwback in the “heavy” ICBM class. Russia is also deploying two new types of submarine-launched ballistic missiles (SLBMs), and is deploying a new class of strategic ballistic missile submarines (SSBNs). China is deploying two new types of ICBMs, developing a new SLBM and building a new class of SSBNs. China is the only one of the so-called P-5 nuclear weapons states which continues to increase the size of its nuclear missile force. France is completing a long-standing modernization of its SLBM force.
- Since 2009, India and Pakistan have accelerated their sub-continent nuclear arms race. Both countries are building and testing longer range land-based missiles. India is moving rapidly towards deployment of an SSBN and the achievement of a strategic triad, and Pakistan is doubling its fissile material production capability and has deployed a new generation of tactical nuclear weapons. North Korea continues to try to develop ICBM-class missiles.
- In contrast to all of this, the United Kingdom has postponed, until after the next Parliamentary elections in 2015, a final decision to replace its aging SSBNs with new ships (although preliminary design work on a new SSBN is proceeding). The United States has deferred any major efforts to modernize the three legs of the U.S. nuclear Triad and the nuclear weapons infrastructure.

It should be clear that the often-repeated aspirational statement made by the nuclear disarmament and non-proliferation lobbies that the United States and United Kingdom could “lead by example” by reducing their nuclear arsenals and other nuclear powers will follow suit, is demonstrably false. In fact, during the past twenty years, (a period of dramatic nuclear reductions by the U.S. and Russia and significant reductions by the U.K. and France), Indian and Pakistani nuclear arsenals have continued to grow, North Korea became a nuclear weapons state, Syria began a clandestine nuclear weapons program, and Iran is on the verge of beginning a nuclear weapons program. The two charts below amply illustrate this:

1 Global Nuclear Weapons Inventories, 1945–2010; Robert S. Norris and Hans M. Kristensen; Bulletin of the Atomic Scientists 2010



Furthermore, in the same period over the past several years that the United States and United Kingdom administrations have been reducing the role of nuclear weapons in their respective national strategies, the Russian government has placed nuclear weapons at the very heart of its national security strategy. Additionally, the Kremlin:

- publicly threatened nuclear weapons use against Russia's neighbors over the past three to four years, including an exercise in the fall of 2009 which simulated nuclear weapons attacks against Poland;
- authorized Russian strategic bombers to undertake repeated highly provocative flights near and into U.K., U.S., and other NATO airspace; and
- published a "Military Doctrine" which named NATO as a military threat and threatened preemptive strikes against NATO ballistic missile defense (BMD) sites.

Consequently, in a world where nuclear-armed states use their nuclear weapons for coercion and intimidation, the United States must maintain a capable, secure and credible nuclear deterrent.

Elements of a Capable, Secure and Credible Deterrent

An effective nuclear deterrent consists of five key pillars:

- **A clear-eyed determination of what the deterrent is designed to ward off** (i.e., an attack on a country's homeland, an attack on the homeland and allies, or an attack on other critical assets, such as reconnaissance systems?);
- **An understanding of what constitutes the potential aggressor's vital assets**, the loss of which, through nuclear retaliation would negate any benefits which aggression might hope to achieve;
- **A deterrent force structure which is manifestly capable of delivering a devastating attack against the aggressor's most valued assets;**
- **A deterrent force structure which cannot be destroyed or fatally weakened by a pre-emptive attack; and**
- **A declaratory policy which is credible** in the mind of the potential aggressor's leadership and which creates no doubt that certain forms of aggression will draw a nuclear response.

WHAT IS ITS PURPOSE?

For the most part, national nuclear deterrents in the twenty-first century were intended to deter either direct conventional or nuclear attack on the possessor's homeland or to prevent nuclear blackmail. The policy of the United States makes clear that our nuclear weapons serve not only to deter attack on our homeland, but to protect our allies' security as well. The U.S. has "extended" its deterrent to cover NATO, Japan, the Republic of Korea, and Australia. This places additional demands on our force structure and strategic flexibility.

WHAT DOES THE ADVERSARY LEADERSHIP VALUE?

Understanding what a potential adversary's leadership values is fundamental to having a credible deterrent policy. Democracies are fairly transparent, and it is relatively easy for a potential aggressor to determine what types of nuclear threats might be used to intimidate freely elected governments. Deterring authoritarian states, however, is more difficult. Authoritarian regimes usually do not share the values which democratic ones do. They tend to focus on preserving the mechanisms they use to control their society and ways to maintain those societies even in time of war. The worst mistake U.S. policy makers can commit in this regard is to "mirror image"—that is, to impute their own value structure to a potential enemy's leadership. Academic literature on deterrence often suggests that deterrence can be accomplished in two ways: "deterrence by denial" or "deterrence by punishment." This distinction misunderstands the reality of the nuclear deterrent. "Deterrence by denial" suggests that an effective defense can blunt the aggressor's attack, causing him to recognize eventually that the planned aggression will not succeed. By extension, this suggests that a superb conventional defense, augmented by a highly effective missile defense, is a substitute for nuclear deterrence and that alone such a conventional deterrent is sufficient to prevent aggression, even against an aggressor armed with weapons of mass destruction (WMD)². But this plays into the fallacy of a stand-alone conventional deterrent—a determined enemy will work to find a way to negate the conventional defenses and missile defenses and, having done so, can then attack. What distinguishes nuclear deterrence is the inevitability of a devastating response, even if the victim is about to be defeated on the battlefield.

MANIFEST CAPABILITY

A deterrent force must be seen to be capable by potential adversaries. While it is important that a possessor government be confident its deterrent can carry out its intended mission even *in extremis*, this is a necessary but not sufficient condition of deterrence. The potential enemy government must recognize this as well. This requires conducting sufficient exercises, including test-firings where appropriate, to ensure that the force's technical capability, as well as the launch/air crew's operational proficiency, is widely perceived as equal to the task. Former U.S. Defense Secretary Robert McNamara (who while serving in office, strongly supported nuclear deterrence but later recanted his views and obfuscated his government record) probably summed this up best when he told the U.S. Senate Armed Services Committee in 1963: "...any force that has such characteristics that it cannot be thought of as an operating force cannot serve as a deterrent, and therefore, unless one has a force that has capabilities for actual operations and a force for which one has an operational plan, one, in my opinion, does not have a credible deterrent."

SURVIVABILITY

A nuclear force which an enemy can destroy preemptively is a target and an invitation to surprise attack, not a deterrent. A true deterrent must have at least one force element which is capable of surviving a pre-emptive attack and retaliating effectively. In today's world, the

² To be clear, ballistic missile defenses play a key role in U.S. and allied security by complicating an aggressor's risk calculus, successfully defending against small-scale attacks and by limiting damage should an attack occur. The point here is that such defenses are a complement to, not a substitute for, nuclear deterrence.

safest means of doing this is deploying a portion of—or in some nation's case, the entire—force, on submarines, at least one of which is continuously at sea. Having multiple types of deterrent forces increases the overall survivability of a deterrent.

A CREDIBLE DECLARATORY POLICY

A credible policy is one which ties the protection afforded by the nuclear deterrent to a believable set of objectives, in the eyes of one's own people, allies, and potential enemies. Nuclear weapons are not, and never were intended to be, all-purpose deterrents. It would not be credible, for example, to threaten nuclear retaliation in response to a proxy guerilla war in some foreign territory, a lamentable but small-scale conventional attack on one's own forces, or even the loss of one or several orbiting satellites. Recall, for example, the North Korean seizure of the USS Pueblo or the Iraqi attack on the USS Stark. Nuclear responses are credible when linked directly to the defense of a nation's vital interests and territorial integrity and, where undergirded by treaties and decades of demonstrated commitment, to the defense of allies' vital interests and territorial integrity. A potential adversary who comes to believe that a deterrent has been linked to the defense of something which is not worth risking national survival through the military employment of nuclear weapons is likely to test that proposition.

The Nuclear Triad: A Deterrent Force Which Has Stood The Test of Time

The U.S. nuclear triad of land-based ICBMs, submarine-based SLBMs and heavy bombers is a deterrent force which for decades has provided a survivable and manifestly-capable deterrent. While its birth was unintentional (it was the product of inter-service rivalry), the triad has shown, in its combination of basing modes, delivery systems, and warhead types, an overall capability which ensures that no enemy attack could prevent effective U.S. retaliation. In essence, the triad has been modernized twice, in the early 1960s by the Kennedy Administration and in the 1980s by the Reagan Administration. As discussed below, all of the systems will require significant modernization or replacement in the next two decades.

ICBM FACTS

- The very first Minuteman missile, the Minuteman I, was deployed in 1963. The current system, the Minuteman III, was first deployed in 1970. Currently 450 Minuteman IIIs are deployed at three ICBM bases: F. E. Warren (Wyoming), Minot (North Dakota) and Malmstrom (Montana).
- The Minuteman III has received several generations of sustainment and modernization, most recently focusing on propulsion replacement, guidance replacement, and Mk-21 fuze refurbishment. These last three are designed to support Minuteman III service life through 2030.
- The Air Force has embarked on a "Ground-based Strategic Deterrent Analysis of Alternatives" to determine future ICBM needs; this will support the decision for MM III SLEP or new ICBM development in the 2015 timeframe.

SLBM FACTS

- Trident D5 SLBMs are carried aboard 14 Ohio Class SSBNs, 12 of which are operational. About half the force is at sea on any given day. Currently, 241 Trident D5 SLBMs are deployed. Each missile is estimated to carry four warheads, either the W76 or the larger, more modern W88.
- There is a Life Extension Program (LEP) for the W-76 which is slated to be completed by 2018. Approximately 1200 W76 warheads are expected to be refurbished.
- The Trident D5 SLBM also is being refurbished, with an LEP that will modernize guidance systems and missile electronics and will also build additional D5 missiles.
- The Ohio class submarines are also undergoing cycles of refurbishment and modernization to maintain them for several more decades.
- As currently envisioned, the Ohio class SSBNs will be replaced by 12 new Ohio Replacement Program (ORP) submarines with 16 launch tubes each. The first of the new submarines was originally slated to go into service in 2029, and the last of the original Ohio class submarines is to be retired by 2040. The FY2013 budget request proposes delaying delivery of the first of the new SSBNs by two years. This will cause the number of operational SSBNs to fall to ten in the 2030s.

BOMBER FACTS

- The U.S. has two bombers assigned to nuclear missions—the B-2 stealth bomber and the venerable B-52H, the most “modern” of which was built in 1962.
 - ◆ The B2s, first deployed in 1997, carry nuclear gravity bombs.
 - ◆ B-52s carry the AGM-86 B air launched cruise missiles first deployed in 1980.
- The 2010 Nuclear Posture Review stated that a study was examining alternatives for a new long-range bomber. More recent statements by the Air Force leadership state the plane may or may not have a nuclear mission.

“How Much is Enough?”

One of the classic questions confronting defense analysts and military planners is: how large is a nuclear stockpile required to be for an effective deterrent? The discussion frequently ends up in a false dichotomy of what is needed to hold at risk so-called “war-fighting” or “counter-force targets” (e.g. military forces, leadership sites, and war supporting industry) versus what is required to hold at risk “counter-value” targets (e.g. cities). Some even believe, mistakenly, that U.S. policy in the 1960s was “counter-value” oriented. The simple fact is that deterrence is a highly complex policy which rests on convincing any potential aggressor that the devastation our retaliation would create far outweighs the benefits of any aggression so that attacking us or our allies becomes unthinkable. This means, as noted above, that an effective deterrent requires holding at risk what a potential enemy’s leadership values most. Given the world we live in, U.S. deterrence requirements are driven primarily by the need to deter a future Russian leadership, should it develop hostile intent towards us or our allies, and secondarily by the need to deter a future Chinese leadership in the same circumstances. While other deterrent requirements exist, from a force structure and force sizing standpoint, these can be treated as lesser included cases.

The recently retired commander of U.S. Strategic Command, Air Force general Kevin Chilton, testified to Congress in 2010 that he was “comfortable with the force structure that we have” provided by the New START treaty as it is “adequate for the mission that we’ve been given, and is consistent with NPR.” That means a force of about 1550 *deployed* strategic nuclear weapons, which translates into about 2200–2500 actual weapons due to the treaty’s “counting rules.” While some additional reductions may be justified depending upon future positive international developments, it should also be clear that radically deep reductions to only a few hundreds of weapons would be wholly inadequate. Such a small force would fail almost all of the requirements of a capable, secure and credible deterrent discussed above for two reasons:

- It would not be able to deter direct attack on the U.S., let alone threats to and blackmail of our allies, because it would be too small to threaten retaliation against the most valued assets of a Russia or China gone bad; and
- The force would be too small to be based survivably, and most likely would have to be deployed in only a single basing mode rather than a triad. Put another way, it would be susceptible to an enemy pre-emptive first strike.

Conclusion

In the three hundred years following the emergence of the modern nation state as a result of the treaty of Westphalia in 1648, the great powers of Europe went to war with one another an average of seven times per century. Even the horrific carnage of World War I, (“the war to end all wars”), which resulted in 15 million dead and 20 million wounded and decimated a generation of European males, was insufficient to prevent World War II. But after 1945, the Great Powers in Europe and elsewhere around the world have not engaged in direct military conflict with one another. Human nature has not changed, witness the atrocities committed in the “civilized and modern” Yugoslavia once the country imploded into civil war and the unspeakable crimes committed by terrorists over the last decade. But something else did change: nuclear weapons have made war among the Great Powers too dangerous. As a result, nuclear weapons have moderated the behavior of the Great Powers toward one another. But this stability is fragile. If the United States were to reduce its nuclear deterrent to a point where it could not be extended to its allies, or even to a point where it was perceived to be unable to threaten the vital interests of potential enemy leaderships, we could see a return to the dangers of the “nuclear free world” which preceded 1945. On the other hand, a strong and modernized deterrent will allow America to continue to maintain the peace and to provide for our own and our allies’ security. We must not fail to ensure the peace. We must maintain a modern nuclear deterrent.



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