

LECTURE

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Nuclear Deterrence in the Context of the European Security Crisis and Beyond

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Abstract: *2014 was a major turning point in European history. Russia invaded and annexed Crimea and immediately engaged in an expanded “hybrid” war in Eastern Ukraine with the objective of extending Russian control. There is increasing recognition in the West that Russian aggression, linked with Russia’s nuclear capability, poses a real danger—especially in light of the fact that Russian nuclear doctrine allows for the first use of nuclear weapons in limited conventional wars. U.S. and NATO senior officials have voiced concerns about Russia’s aggressive rhetoric and actions. An enormous disparity between U.S. and Russian efforts to modernize their respective nuclear forces further exacerbates the situation. While Russia expands its nuclear forces, the U.S. continues to make reductions in its own nuclear capability. The U.S. needs to end these reductions, take a firmer line against Russian military expansion, and increase the readiness and availability of existent nuclear capabilities. These changes would cost little or nothing but would help to ensure that Russia does not obtain a substantial nuclear advantage prior to the availability of modernized U.S. nuclear forces.*

Legacy Soviet attitudes toward the West have always shaped Russian foreign and defense policy. Vladimir Putin replaced Boris Yeltsin’s stance that Russia had no enemies with the rather paranoid view that the U.S., NATO, and Japan are Russia’s enemies and that the U.S. is seeking the destruction of Russia.¹ Putin has characterized the collapse of the Soviet Union as “the greatest geopolitical catastrophe” of the 20th century.² As Russian expatriate Alexei Bayer observes, Putin’s Russia is “bursting with negative energy, hatred of the outside world and enthusiasm for confrontation.”³ Putin’s actions are aimed at, to the extent possible, reestablishing imperial

KEY POINTS

- New START is the worst arms control agreement in over 30 years. Under New START, the U.S. is making effectively unilateral reduction in the context of no significant nuclear modernization.
- While the Obama Administration has changed its views about the Russian threat, its nuclear modernization plans are essentially the same as those adopted in 2010–2011, a period in which the Administration was in denial about the seriousness of the Russian nuclear threat.
- Russia has a monopoly on battlefield nuclear weapons, naval tactical nuclear weapons, and intermediate-range ground-launched missiles. The U.S. presently has no programs to deter the use of these weapons.
- Russia’s recreation of pre-INF Treaty capabilities has direct implications for the European crisis. Russia has a ten-to-one numerical advantage and has retained all types of Cold War nuclear weapons.

This paper, in its entirety, can be found at <http://report.heritage.org/hl1266>

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domination over the former Soviet Union and former Warsaw Pact states—by force if necessary.⁴

The sovereignty of three NATO republics, Latvia, Lithuania and Estonia, is under attack by Russia.⁵ Amazingly, this is taking place while Putin is trying to end Western sanctions imposed as a result of his aggression against Ukraine. In July 2015, Russian pressure against the Baltic republics escalated to the extent that a squadron-sized unit generated threats requiring a response by NATO aircraft.⁶ (Soon after, NATO announced that it was cutting air defense interceptors protecting the Baltic republics by 50 percent.)⁷ Additionally, Russia now claims the entire Arctic Ocean and is reactivating Soviet-era Arctic military bases to enforce this claim.⁸ Russia's perceived enemies in the Arctic are NATO states with claims to portions of the Arctic Ocean. Russia has become involved in an air war in Syria aimed at keeping Bashar al-Assad in power, not fighting the so-called Islamic State.

Russia's Increased Aggression

The year 2014 was a major turning point in European history. Russia invaded and annexed Crimea and immediately engaged in an expanded “hybrid” war in Eastern Ukraine with the objective of extending Russian control and, probably, creating a land bridge to Crimea. Former Secretary of State Hillary Clinton compared Putin's actions to “what Hitler did back in the 30s,” noting that his excuse of protecting ethnic Russians was the same rationale that Hitler used with regard to Germans.⁹ Leon Aron, Director of Russian Studies at the American Enterprise Institute, has astutely observed that Putin's “language [is] eerily similar to that of the early Mussolini and Hitler[.] Russia was imagined as never wrong but perennially wronged by the Western democracies.”¹⁰

Putin has claimed that he can capture five NATO capitals by force in two days.¹¹ In 2014, Putin said that Russia could alone “strangle” all of NATO.¹² There is now a risk that Russia may attack a weak NATO state. However, while Russia can probably seize three NATO capitals in two days, it cannot hold them against a NATO counter-attack unless it uses nuclear weapons. Russia certainly cannot “strangle” NATO without using nuclear weapons. According to NATO's Secretary General, Jens Stoltenberg, “We are responding and we are doing so by implementing the biggest reinforcement of collective defence since the end of the Cold War.”¹³ While this is true, the current NATO approach to conventional defense

may not be adequate to deter Putin because it is not being forward-deployed, thus creating the opportunity for a quick territorial grab. Significantly, NATO has done nothing to enhance nuclear deterrence.¹⁴

There is increasing recognition in the West that Russian aggression, when linked with Russian nuclear capability and its views concerning the use of nuclear weapons, poses a very real danger. Russian nuclear doctrine allows for the first use of nuclear weapons in limited conventional wars.¹⁵ Russian nuclear doctrine was personally developed by Vladimir Putin when he was Secretary of the Russian National Security Council, and he signed it into law as Acting President in 2000.¹⁶ Today, he personally presides over large Russian strategic nuclear exercises.¹⁷ Putin bases his nuclear doctrine upon the theory that first use of nuclear weapons by Russia will result not in a nuclear war but in a Russian victory because NATO will back down.¹⁸ Talk of “nuclear zero” in the West encourages this view. When Russia introduced the first use of nuclear weapons into a theater conventional war exercise (Zapad [West]-1999), Russian Defense Minister Marshal Igor Sergeev said, “Our Army was forced to launch nuclear strikes first which enabled it to achieve a breakthrough in the theater situation.”¹⁹ In 2009, the Commander of the Strategic Missile Troops, Lieutenant General Andrey Shvaychenko, declared, “In a conventional war, they [Russia's nuclear ICBMs] ensure that the opponent is forced to cease hostilities, on advantageous conditions for Russia, by means of single or multiple preventive strikes against the aggressors' most important facilities.”²⁰ He is literally saying that a conventional war is one in which “single or multiple” nuclear intercontinental ballistic missile (ICBM) strikes can occur. In the next sentence General Shvaychenko defines nuclear war as “an initial massive nuclear missile strike and subsequent multiple and single nuclear missile strikes.”²¹ Also in 2009, Sergei Patrushev, Secretary of the Russian National Security Council, stated that nuclear weapons could be used “not only in large-scale wars, but also in regional or even a local one.... There is also a multiple-options provision for use of nuclear weapons depending on the situation and intentions of the potential enemy.”²² In September 2014, *Interfax* reported that former Chief of the General Staff and Deputy National Security Council Secretary General of the Army (ret.) Yury Baluyevsky stated that “conditions for pre-emptive nuclear strikes...is contained in classified policy documents.”²³

Russia has been making high-level nuclear threats since 2007, but in 2014–2015 it shifted from threats of a nuclear response (or preemptive attack) in response to “aggression” to nuclear threats in support of Russian aggression in Ukraine.²⁴ Russia also conducted a substantial number of well-publicized nuclear exercises in 2014–2015.²⁵

U.S. and NATO Reaction to Russian Aggression

U.S. and NATO senior officials have voiced concerns about Russian aggressive rhetoric and actions. For example, according to Secretary of Defense Ashton Carter, “Moscow’s nuclear sabre-rattling raises questions about Russia’s commitment to strategic stability and causes us...to wonder whether...they share the profound caution...that world leaders in the nuclear age have shown over decades to the brandishing of nuclear weapons.”²⁶ Deputy Secretary of Defense Bob Work and then-Vice Chairman of the Joint Chiefs of Staff Admiral James Winnefeld told the House Armed Services Committee, “[W]e face the hard reality that Russia and China are rapidly modernizing their already-capable nuclear arsenals, and North Korea continues to develop nuclear weapons and the means to deliver them against the continental United States.”²⁷ They also observed that the Russian view that “they can control escalation through the use of nuclear weapons is literally playing with fire.”²⁸ In his confirmation hearings for the chairmanship of the Joint Chiefs of Staff, General Joseph F. Dunford Jr. noted, “If you want to talk about a nation that could pose an existential threat to the United States, I’d have to point to Russia.”²⁹ General Paul Selva, at his confirmation hearing for the position of Vice Chairman of the Joint Chiefs of Staff, stated he “would put the threats to this nation in the following order: Russia, China, Iran, North Korea, and all of the organizations that have grown around ideology that was articulated by al Qaeda.”³⁰ NATO’s Secretary General Jens Stoltenberg recently stated:

Russia’s recent use of nuclear rhetoric, exercises and operations are deeply troubling. As are concerns regarding its compliance with the Intermediate Nuclear Forces Treaty.

President Putin’s admission that he considered putting Russia’s nuclear forces on alert while Russia was annexing Crimea is but one example.

Russia has also significantly increased the scale, number and range of provocative flights by nuclear-capable bombers across much of the globe. From Japan to Gibraltar. From Crete to California. And from the Baltic Sea to the Black Sea.

Russian officials announced plans to base modern nuclear-capable missile systems in Kaliningrad. And they claim that Russia has the right to deploy nuclear forces to Crimea.

This will fundamentally change the balance of security in Europe.

We learned during the Cold War that when it comes to nuclear weapons, caution, predictability and transparency are vital.

Russia’s nuclear sabre-rattling is unjustified, destabilizing and dangerous.³¹

This is an amazing consensus, particularly when viewed in the light of the rosy illusions about Russia that have dominated the past 20 years of U.S. and NATO defense policy. For example, the U.S. 2010 *Nuclear Posture Review Report* stated, “[T]he nature of the U.S.-Russia relationship has changed fundamentally since the days of the Cold War... Russia and the United States are no longer adversaries, and prospects for military confrontation have declined dramatically.”³²

U.S. Nuclear Deterrence Policy

There are strong indications that the Obama Administration has increased priority for nuclear deterrent forces in light of Russia’s aggressive behavior. However, there is still an enormous disparity between U.S. efforts and those of Russia and China with respect to nuclear modernization, not to mention the difference between their force expansion and U.S. reductions in nuclear capability.

The U.S. currently does not plan to replace the existing elements of the U.S. nuclear triad until they are 40–80 years of age.³³ This is dangerous because a large part of the U.S. deterrent will reach this age within 15 years. It is also uncertain whether or not all elements of the existing force can survive this long and still be effective. Between 2021 and 2035 planned modernization of U.S. strategic forces will cost “approximately 3.4% of our current, topline

defense budget.”³⁴ This level of spending is hardly appropriate for countering an “existential threat” to the U.S. Until 2021, there will be no procurement of modernized systems. This is clearly not the case in Russia, China, Iran, or North Korea.³⁵ While the Obama Administration has apparently shifted its views about the Russian threat, the actual nuclear force modernization plans are essentially the same as those adopted in 2010–2011, a period in which the Obama Administration was in complete denial about the seriousness of the Russian nuclear threat.

Financial limits, arms control policies, and ideological factors will constrain the performance of planned U.S. replacement systems despite the widespread expectation that once built, these systems will serve effectively for many decades. Moreover, planned U.S. modernization is distant and only partial. This modernization will consist of a Trident replacement submarine, a new nuclear-capable bomber, a nuclear cruise missile, and a Minuteman III replacement (apparently a 1970 vintage Minuteman III with a new first stage).³⁶ All of these systems are to enter service between 2027 and 2031. In order to reduce costs, the Trident replacement submarine will use some technology from the old Trident submarine and the current Virginia class submarine.³⁷ Additionally, there is no program yet to create a new ballistic missile for the Trident replacement submarine. The Long Range Strike Bomber (LRS-B) now planned for 2025 (nuclear capability two years later) will *not* have the same capabilities as the so-called 2018 bomber, which was terminated by the Obama Administration in 2009.³⁸ Except for nuclear effects (electromagnetic pulse or EMP) hardening and the nuclear weapons it will carry, the LRS-B will be basically a conventional bomber. The Air Force “family of systems” approach to the new bomber will depend upon the capabilities of other aircraft to allow it to perform its mission.³⁹ This does not appear to be applicable to the nuclear mission. (The other aircraft will not likely be nuclear hardened or have the necessary range to support the nuclear deterrent mission.) Under the current program, even if the U.S. actually builds the 80-100 LRS-B the Air Force is now planning, the entire U.S. bomber force is likely to eventually decline to 80–100 bombers and not all of them will be combat coded.⁴⁰ The only question is how soon this will happen. The recent Air Force statement that the LRS-B will be in production for 25 years suggests a very low production rate of 3–4 per year.

The number of ballistic missile submarines will decline to 12 (temporarily to 10)⁴¹ from a Cold War peak of about 40. This is being done at a time when the Russians are claiming to have made a substantial advance in submarine detection.⁴² The limited scope of the U.S. modernization program will likely result in general Russian technical superiority by 2030.

Russia and China clearly pose the most serious of the existing nuclear threats to the U.S. and our allies. They are now *deploying* new ICBMs, new submarine-launched ballistic missiles (SLBMs), new ballistic missile submarines, and new nuclear air-launched cruise missiles (ALCMs).⁴³ Both are *developing* still newer ICBMs, newer ballistic missile submarines, and new bombers, including new stealth bombers.⁴⁴ Russia and China are *developing and deploying* new nuclear weapons apparently with the assistance of hydronuclear testing.⁴⁵ Both have no interest in post–New START arms control reductions or, in the case of China, any nuclear reductions at all except those by the U.S. Russia and China are also modernizing their non-strategic nuclear weapons.⁴⁶ The objective of Russian nuclear modernization programs is invariably to create better and more lethal systems.

Russian and Chinese Nuclear Policies

Both Russia and China are modernizing their air defense systems and creating missile defenses.⁴⁷ The Russian programs in strategic missile defense are about ten times more ambitious than U.S. programs, and they are aimed at defending against the U.S., not rogue states.⁴⁸ China has also announced it is going to deploy missile defenses, although it has not provided details.⁴⁹ Both Russia and China have large and capable defenses against air attack.⁵⁰ The U.S. has virtually none. The U.S. is apparently doing nothing to counter Russian missile defense activities—there are certainly no announced U.S. programs for countermeasures. The nuclear weapons reductions now undertaken by the Obama Administration increase our vulnerability to advanced missile defenses. While the announced bomber force modernization program—if it really goes forward—will increase our capability against Russian and Chinese air defenses, it will not do so until after 2027.

Russia. Announced Russian strategic nuclear modernization programs now include:

- A new road-mobile and silo-based Topol-M Variant 2 (SS-27 Mod 1) ICBM.⁵¹
- A new SS-27 Mod 2 derivative with a Multiple Independently-targetable Re-entry Vehicle (MIRV) payload that the Russians call the RS-24.⁵²
- A new MIRVed (six warhead) Bulava-30 SLBM.⁵³
- A new Borey-class ballistic missile submarine (SSBN) carrying the Bulava-30.⁵⁴
- A new long-range stealthy strategic nuclear cruise missile designated the KH-102.⁵⁵
- Modernization of Blackjack (Tu-160) and Tu-95 heavy bombers.⁵⁶
- The development and deployment of the new Sarmat heavy ICBM with a mammoth 10 tons of throw-weight (which will reportedly carry 10 heavy and 15 medium nuclear warheads) in 2018-2020.⁵⁷
- Development and deployment of a new rail-mobile ICBM in 2018-2020.⁵⁸
- Development and deployment of a new “ICBM” called the RS-26 Rubezh, in reality, an intermediate-range missile, by 2015-2016.⁵⁹
- Development of a “fifth-generation” missile submarine to carry ballistic and cruise missiles.⁶⁰
- Development of a new stealthy heavy bomber (the Pac DA) which will carry cruise missiles and reportedly hypersonic missiles.⁶¹
- According to President Putin, new nuclear systems yet to be announced.⁶² One of these may be the just announced program to acquire at least 50 new versions of the Tu-160 strategic bomber.⁶³
- An unidentified second type of liquid-fuel ICBM.⁶⁴

Russia is now violating the Intermediate-Range Nuclear Forces (INF) Treaty by testing an intermediate-range cruise missile.⁶⁵ Through a combination of violations and circumventions, Russia appears to be recreating the intermediate-range

and shorter-range ground-launched missile strike capability that existed before the INF Treaty.⁶⁶ This has direct implications for the current European security crisis, particularly when viewed in light of the enormous Russian tactical nuclear capability. Russia has a ten-to-one numerical advantage and, unlike the U.S., has retained essentially all types of Cold War tactical nuclear weapons.⁶⁷

China. The 2015 Pentagon report on Chinese military power states that China “is developing and testing several new classes and variants of offensive missiles, including hypersonic glide vehicles...[and] continues to modernize its nuclear forces by enhancing its silo-based intercontinental ballistic missiles (ICBMs) and adding more survivable, mobile delivery systems.”⁶⁸ According to this report, the new nuclear-armed ICBMs and SLBMs now being deployed are:

- Two silo-based variants of the large CSS-4 (DF-5)—the improved Mod 2 and the MIRVed Mod-3.⁶⁹
- The road-mobile DF-31 and DF-31A (CSS-10 Mod 1 and 2) ICBMs.⁷⁰
- The new JL-2 SLBM carried by the type 094 submarine is now becoming operational.⁷¹ Four of eight planned type 094 submarines are now operational.⁷²

China has a number of strategic nuclear systems under development:

- Reportedly tested an improved ICBM called the DF-31B;⁷³
- Developing and reportedly testing the large 10 warhead DF-41 mobile ICBM;⁷⁴
- Developing a new type 096 ballistic missile submarine;⁷⁵ and
- Reportedly developing a MIRVed SLBM sometimes referred to as a variant of the JL-2 or the JL-3.⁷⁶

The Chinese Air Force has nuclear-capable H-6 bombers and is introducing an improved H-6K bomber which carries a long-range nuclear-capable cruise missile.⁷⁷ There are also reports of Chinese development of stealth bombers.⁷⁸

U.S. Nuclear Policy Moving in Wrong Direction

The U.S. is now reducing its strategic forces; Russia is doing the opposite. We are now more than halfway through the New START reduction period and Russia has *increased* the number of its strategic nuclear weapons as it announced it would do in 2011.⁷⁹ New START is the worst arms control agreement in more than 30 years. It is riddled with loopholes which allow far more nuclear weapons than the supposed New START limit of 1,550 deployed warheads.⁸⁰ *Sputnik News* says Russia will have 2,100 actual strategic nuclear warheads under New START limits.⁸¹ The liberal Federation of American Scientists says the actual number will be 2,500 by 2025.⁸² Russia has just announced that it is acquiring at least 50 modernized Tu-160 cruise-missile-carrying bombers.⁸³ This will add at least another 600 warheads since each Tu-160 carries 12 cruise missiles. Thus, we are looking at 3,100 or possibly even more Russian strategic nuclear warheads by 2025–2027.

We do not know how many strategic nuclear warheads the Obama Administration plans to deploy but it is not going to be 3,000 or likely even near 2,000. The reductions the U.S. is making under New START are effectively unilateral and in the context of no significant U.S. nuclear modernization. U.S. nuclear bomber capability is seriously eroding and, best case, will continue to do so until about 2027. The U.S. nuclear ALCM reportedly may not be supportable much longer.⁸⁴ Even if it is, it will face advanced Russian interceptors: the SA-20, an improved version of the SA-12, and the much improved S-400 system. The U.S. nuclear ALCM could possibly face an even greater threat from China. The U.S. nuclear ALCM dates from 1981. Even in the 1980s it was not regarded as good enough to deal with the SA-10 (S-300) system of that era.⁸⁵ The B-2 bomber force is very limited in number and has no standoff nuclear capability. The Obama program will not even provide it with a nuclear glide bomb capability.

The U.S. is also in the process of administering self-inflicted wounds. In 2013, the Obama Administration rejected “minimum deterrence” and concluded that the U.S. needed to maintain “significant” counterforce capability (i.e., the ability to destroy military targets).⁸⁶ Yet the first major decision made by the Obama Administration after this report was issued was to turn a “significant” (if not completely

adequate) bomber delivered counterforce capability against hard and deeply buried military targets (HDBTs) into an insignificant one. This is risky because HDBTs are extremely important targets for deterrence purposes. They protect adversary leadership; nuclear, chemical, and biological weapons; and ballistic missiles.⁸⁷

We are losing most of our bomber capability against critical hard and deeply buried targets. Bombers are now the best weapons we have against HDBTs and there are no programs to compensate for this loss in capability with the enhancement of ballistic missile capability. (Indeed, the programs to life-extend the higher yield warheads for U.S. ballistic missiles have been delayed five years.)⁸⁸ This development is a direct result of flawed arms control policies and the enormous cost increase resulting from a moratorium on nuclear testing which now provides an excuse to reduce our capabilities. The U.S. is observing a nuclear testing moratorium while Russia and China apparently covertly test nuclear weapons.⁸⁹ The moratorium is creating doubts about the reliability of our nuclear weapons stockpile.⁹⁰ Because of liberal ideology, the U.S. is increasing its costs while reducing the number of types and, possibly, the reliability of its nuclear weapons. The impact of this has been most severe on nuclear weapons designed to destroy HDBTs or those that have the best capabilities against them.

According to Deputy Assistant Secretary of Defense Elaine Bunn, U.S. “strategy, when completed decades from now, would result in five types of warhead designs in place of the twelve unique warhead types in today’s active nuclear weapons stockpile.”⁹¹ The reason for this reduction is the large cost increase that results from the inability to test the nuclear warhead due to life-extension programs. Thanks to the testing moratorium, things that should be cheap and easy have become complicated and costly. The U.S. is not funding life extension of the B-61 Mod 11 earth penetrator warhead (designed against hard and deeply buried targets); the B-83 bomb (a “megaton-class weapon” and our best general use weapon against hard and deeply buried facilities); and all of the higher yield versions of the B-61 bomb.⁹² Absent earth penetration, yield is the critical factor in destroying HDBTs.⁹³ Thus, there will be a serious reduction in U.S. capability against HDBTs if the Obama Administration goes forward with the existing plan.

Russia Shows Signs of Continuing Aggression

There is a growing body of disturbing evidence that Russia is preparing for a major war. Russian military exercises and what Russia calls “snap drills” have reached astounding levels, an announced 4,000 planned in 2015, including 120 involving the ICBM force.⁹⁴ The most alarming aspect of its nuclear first use policy is Russia’s characterization of this strategy as “de-escalation” of a conflict. Recently, the Obama Administration has recognized that this is very dangerous. According to Deputy Secretary Work and then-Vice Chairman of the Joint Chiefs of Staff Admiral James Winnefeld, “Russian military doctrine includes what some have called an ‘escalate to de-escalate’ strategy—a strategy that purportedly seeks to deescalate a conventional conflict through coercive threats, including limited nuclear use.” Work and Winnefeld categorize this strategy as “playing with fire.”⁹⁵ If Putin miscalculates and invades a weak NATO state, we will likely face nuclear threats from Russia and, possibly, the first nuclear weapons use since World War II, a threat highlighted in February 2015 by NATO Deputy Military Commander, Lieutenant General Sir Adrian Bradshaw.⁹⁶

“Global norms” against nuclear weapons use are not likely to be any more effective in constraining Putin’s actions than “global norms” against invading other countries and annexing their territory. The modernization asymmetry and the ten-to-one Russian advantage in tactical nuclear weapons are not even the biggest problems the U.S. faces. Thanks to ill-advised arms control agreements, Russia now has a monopoly on battlefield nuclear weapons, naval tactical nuclear weapons, and, quite soon, intermediate-range ground-launched missiles. With what will the U.S. deter the use of these weapons? There are no real programs to support this objective. U.S. dual-capable fighter aircraft in Europe are at low readiness according to NATO.⁹⁷ The nuclear capable F-35 will not be operational until 2024.⁹⁸ This will be the only U.S. non-strategic nuclear capability. The nuclear submarine-launched cruise missile capability was killed by the Obama Administration in the 2010 *Nuclear Posture Review*. Deputy Secretary Work and then-Vice Chairman of the Joint Chiefs of Staff Admiral Winnefeld, were correct in their assessment that “our nuclear forces help convince potential adversaries that they cannot escalate their

way out of failed conventional aggression.”⁹⁹ However, it takes the right types of nuclear forces to best accomplish this objective. For ideological reasons, the U.S. is not buying the right type of capability, even in a number of instances where the cost is literally zero.

What the U.S. Should Do

Enhancing its deterrent against Russian aggression, particularly the nuclear component, is critical. Taking real steps to preserve the nuclear triad is an important first step. However, this alone is not sufficient. Under the current U.S. nuclear modernization program, the U.S. nuclear deterrent will continue to decline until at least 2027. Does the U.S. have other options? Yes, and a number of them are essentially cost-free. The 2010 *Nuclear Posture Review* stated that it was U.S. policy that the “United States will retain the ability to ‘upload’ some nuclear warheads as a technical hedge against any future problems with U.S. delivery systems or warheads, or as a result of a fundamental deterioration of the security environment.”¹⁰⁰ In testimony supporting New START, Principal Deputy Under Secretary of Defense James N. Miller said that the “United States will retain the ability to ‘upload’ large numbers of additional nuclear warheads on both bombers and strategic missiles deployed under New START.”¹⁰¹

If the Obama Administration has followed through on this promise there should be significant upload potential available at no additional cost. Putin’s aggression in the Ukraine and his threats against NATO states have certainly deteriorated the security environment. There are a number of zero cost or near-zero cost actions the U.S. can undertake between now and 2027:

1. **Stop** the reduction of U.S. strategic nuclear systems under New START and **inform** Russia that unless it terminates its aggression in Ukraine the U.S. will withdraw from New START and reload its strategic nuclear forces up to Clinton Administration levels;
2. **Increase** the readiness of its dual-capable fighter aircraft (DCA) deployed in Europe to deliver nuclear weapons;
3. **Accelerate** the availability of nuclear capability on the F-35;

4. **Create** the U.S. equivalent of the U.K.'s "non-strategic" Trident missile capability; and
5. **Increase** the maximum yield of the life-extended version of the B-61 to the maximum current yield of the B-61 bombs, thus enhancing U.S. capabilities against hard and deeply buried targets.

The cost of reloading available non-deployed nuclear warheads will be about the same as the current program of removing them to comply with New START. Increasing DCA readiness merely means shifting training priorities. An earlier availability date for a nuclear F-35 will force expenditures earlier than the current program but probably would have little impact on total cost. A non-strategic version of the Trident warhead can easily be created as part of the life-extension program at virtually no additional cost. This would require developing the option of exploding only the primary or fission trigger of a thermonuclear weapon. The U.K. sub-strategic Trident, according to the Federation of American Scientists, can achieve low yields "by choosing to detonate a warhead's unboosted primary, which would produce a yield of 1 kiloton or less, or by choosing to detonate the boosted primary, which would produce a yield of approximately a few kilotons."¹⁰² According to David Yost of the Naval Post Graduate School, the French have exercised this option.¹⁰³ Life extending a higher yield version of the B-61 would have essentially no extra cost compared to the current program.

These changes would increase the U.S. deterrent capability, particularly against Russia and China. While these changes in the U.S. nuclear program would cost little or nothing, the effect of these changes would help to ensure that Russia will not obtain a substantial nuclear advantage prior to the availability of modernized U.S. nuclear forces after 2027. These measures would also negate the effectiveness of Russian and Chinese improvements in their ballistic missile defense capability without requiring expensive programs for countermeasures. Enhanced readiness of tactical nuclear weapons and a sub-strategic Trident would enhance the U.S. ability to respond in kind to a limited nuclear attack by Russia, thus making it more difficult for Putin to believe that there would be no response to a precision low-yield nuclear weapons attack.

The zero or near-zero cost options outlined above will not resolve all problems. For example, the U.S. needs to develop hypersonic weapons with both conventional and nuclear-strike capability. It also needs missile and bomber defenses designed against Russian and Chinese weapons systems, as well as survivable nuclear cruise missiles (submarine-launched and ground-launched) to deter the massive Russian tactical nuclear capability. Failure to develop these capabilities could tempt Putin to launch an attack on a weak NATO state backed up by the threat of nuclear escalation.

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