

De-Alerting Nuclear Forces

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De-alerting the posture of the United States nuclear arsenal is a concept that has been examined at length by military and non-governmental communities since the 1990s. The issue of de-alerting hinges on whether the United States – Russian relationship warrants a change to promptly configured nuclear forces. Proponents of de-alerting presume that Russian intentions toward the United States today are benign; opponents believe Russia’s capabilities and actions do not warrant de-alerting. This paper assesses the implications and challenges surrounding the de-alerting of intercontinental ballistic missiles (ICBMs) and suggests that the fundamental relationship between the United States and Russia should drive the alert postures of both countries.

Executive Summary

The purpose of this paper is to highlight the issues surrounding de-alerting of intercontinental ballistic missiles (ICBMs). “De-alerting” is defined as the introduction of reversible changes to ICBM nuclear weapons, their launch and/or command and control systems in order to lengthen the time required to launch these weapons. De-alerting the posture of the United States nuclear arsenal is a concept that has been examined at length by military and non-governmental communities since the 1990s. Indeed, the United States de-alerted several classes of nuclear weapons both during and after the Cold War. Today the primary concern of de-alerting proponents is an uncontrolled escalation spiral in a crisis that leads to a rapid launch of promptly alerted nuclear forces.

The call for de-alerting U.S. nuclear weapons does not affect all components of the nuclear triad equally. The posture of heavy bombers, for instance, has already been significantly relaxed. Submarine-launched ballistic missiles (SLBMs), while relatively prompt are also survivable. Thus, there is less pressure to use or lose these weapons in a crisis, and therefore less impulse to de-alert SLBMs. For these reasons, the focus of de-alerting proponents is mainly on ICBMs.

The Joint Staff, U.S. Strategic Command (USSTRATCOM), the U.S. Air Force and the U.S. Navy undertook a collaborative study of approximately 100 de-alerting ideas at the end of the Cold War. Some of these ideas were implemented. Most of this work remains classified. In 1998 the Defense

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Special Weapons Agency (DSWA), a forerunner to the Defense Threat Reduction Agency, determined that de-alerting incurred risks and would likely be as difficult as an arms control agreement to negotiate. The DSWA study reported that Russia was uninterested in de-alerting.¹

De-alerting proponents posit that because the Cold War is over, the current climate does not warrant nuclear weapons on prompt alert. The argument against de-alerting is that these presumptions are based on a reading of intentions, ignoring the very real capabilities Russia has been improving since 1995. De-alerting proponents believe the current posture would deprive leaders of valuable time in a crisis when making grave decisions about the use of nuclear weapons. The term “hair trigger” alert is often used to describe the current alert posture. This term is unhelpful to the debate because it inaccurately implies that ICBMs are postured in a way that minimizes decision-making time should a crisis erupt, or subjects nuclear weapons to either theft or unauthorized launch.

The issue of de-alerting ICBMs hinges on whether the US-Russian relationship warrants a change to promptly configured nuclear forces. The original purpose of these force postures was to protect both sides in the case of a debilitating surprise attack and introduce doubt about success in an attacker’s mind. De-alerting proponents presume that Russian intentions toward the United States today are benign; opponents believe Russia’s capabilities and actions do not warrant de-alerting. This paper suggests the fundamental relationship between the United States and Russia should drive the alert postures of both countries, and that progressive force retirements, when conditions warrant, make more sense than intermediate half-measures such as de-alerting.

De-Alerting Nuclear Forces

Background

De-alerting nuclear weapon systems is not a new concept. United States weapons were de-alerted during the Cold War from time-to-time, mostly in conjunction with other force structure or operational decisions, such as during generational upgrades to ICBMs, or terminating airborne bomber alert in 1968. In the early 1990s, such actions were also being employed both as confidence building measures and to relax force posture at the end of the Cold War. President George H.W. Bush, for example, unilaterally de-alerted the bomber force in 1992 as part of his Presidential Nuclear Initiative. Since then, several proponents have suggested additional de-alerting measures primarily aimed at lowering the readiness of the most prompt nuclear delivery systems: United States and Russian ballistic missiles.² De-alerting proponents are fueled by the belief that since the Cold War is over, Russia no longer poses the threat the Soviet Union represented, and de-alerting is a logical follow-on action. This argument asserts that promptly-alerted systems will not permit adequate time to make rational decisions and unnecessarily risks an escalation spiral during a crisis; therefore, maintaining prompt nuclear systems on “hair trigger” alert is both imprudent and dangerous. Moreover, they claim this posture exposes these weapons to potential

theft, or possibly an un-commanded launch.³ In the 1990s most of the de-alerting advocacy was undertaken in the United States. In recent years, de-alerting has become an international cause. In January 2009, for example, the UN Security Council adopted resolution 62/36, which calls for all nuclear weapons to be removed from high alert status. The resolution was primarily sponsored by Chile, New Zealand, Nigeria, Sweden, and Switzerland with 16 other nations serving as secondary sponsors.⁴

De-alerting does not affect the three components of the traditional nuclear triad equally. Heavy bomber alert rates and readiness have relaxed to a point where few proponents for de-alerting call for further actions for these systems. Many de-alerting proponents favor de-alerting all ballistic missiles; however, in the past decade SLBMs have become less of an interest than ICBMs. The differentiation between these two classes of ballistic missiles stems from the de-alerting proponents' stated goal of slowing reaction times should a crisis erupt. Because there is no known direct threat to SLBMs at sea, there is no use-or-lose pressure in a crisis, which de-alerting proponents believe is the case with ICBMs. De-alerting proponents believe leaders can wait to execute SLBMs in a crisis without risk of their loss, and thus gravitate toward a view that ICBMs are the main problem. Therefore, the focus of this paper is on examining the issue of de-alerting ICBMs.

At the end of the Cold War, USSTRATCOM, the Joint Staff, the Air Force and the Navy collaboratively studied approximately 100 de-alerting ideas. Many de-alerting ideas were suggested by the private sector and several more were proposed by experts representing the various weapon systems. Some were implemented; for instance, de-alerting ideas concerning Peacekeeper missiles were subsumed within the decision to unilaterally retire this force.

The most important Department of Defense de-alerting study is classified and as a result virtually none of it is public. However, in 1998, the Defense Special Weapons Agency, a forerunner to the Defense Threat Reduction Agency, studied this issue, to include reviewing the classified work of others.⁵ The DSWA study concluded that de-alerting had its own risks and burdens, would be as difficult as an arms control initiative to negotiate. The DSWA study is notable too, in that it reported Russia was not particularly concerned about the loss of security and the surety of its nuclear forces, or the state of its early warning systems, and therefore was uninterested in de-alerting.

In addition to this work, several non-governmental organizations have studied the issue. The leading non-governmental proponent of de-alerting is Dr. Bruce Blair, president of the World Security Institute. Dr. Blair served as a Minuteman missile launch officer in the 1970s and has written extensively on the topic. Among the many options suggested by Blair and others for ICBM de-alerting include manually "safing" individual missiles by locking the launcher's safety control switch, or removing launch keys and/or codes from launch control centers. Additional ideas involve more complex actions such as removing components like guidance systems, umbilical cords connecting missiles to ground systems, or

missile shrouds covering the reentry vehicles. One potentially verifiable idea includes blocking silo launcher closure doors. The simpler options are not unobtrusively verifiable at-will and require inspectors visiting missile silos and/or launch control centers. The more complex and visible options introduce other concerns that may make these missiles more unsafe to operate, or possibly result in an irreversible loss, not just a temporary slowing of reaction time.

One of the more inflammatory aspects of the de-alerting dialogue is the idea that United States and Russian nuclear forces are inappropriately maintained on “hair-trigger” alert. The implication is that these forces are somehow overly easy to use and this leads to a dangerous situation in which missteps or misjudgments could lead to irrevocable and highly regrettable actions. This misconception from the 1990s lives on today. In testimony before the Senate Foreign Relations Committee for her confirmation as Secretary of State in January 2009, Hillary Clinton said: “We will also work with Russia to take United States and Russian missiles off hair-trigger alert.”⁶ Shortly after inauguration, President Obama’s foreign policy agenda outlined on the White House web page included as a goal to “work with Russia to take United States and Russian ballistic missiles off hair trigger alert.”⁷ The use of the term “hair-trigger” in a discussion about nuclear weapons implies increased risk that many de-alerting proponents claim demands de-alerting as the solution. Many in the United States nuclear community with deep knowledge of nuclear command, control and security/surety procedures reject the characterization that United States forces are on hair-trigger alert and the implication they are extraordinarily susceptible to accidental discharge or theft. Indeed, the recently published final report of the Congressional Commission on the Strategic Posture of the United States said the term is “simply an erroneous characterization of the issue.”⁸ Over the past 30 years a number of Permissive Action Links (PALs) and procedural controls have been inserted in nuclear forces, including features that make all nuclear weapons impossible to employ without express direction of senior national security leaders and the President.

The Kill Chain

One way to approach the question of de-alerting is to evaluate it within the context of the joint model for discovering targets and defeating them. This is a seven-step model to plan, find, fix, track, target, engage, and assess a strike. It is often abbreviated PF²T²EA and called the “kill chain.” This kill chain can be broken down into three distinct phases. Phase I involves discovering whether there is a target, whether it is friend or foe, and developing a course of action to defeat it. This phase belongs to the intelligence community and command staffs. Phase I can last from seconds to years. Phase II involves decision-making. Once the staffs and intelligence analysts discern the potential target (s) and determine a course of action, they turn the problem and suggested solution(s) over to decision makers. In the nuclear chain, Phase II includes obtaining a presidential decision to use nuclear forces. Phase II belongs exclusively to the president, commanders, and civilian military leaders. Phase II can last from

moments to days, and may end in a decision not to pursue the target. The final phase of the chain executes the course of action. This step involves passing orders to the military, staging forces, launching the strike, and monitoring weapon system reaction and flight times. Phase III ends when the target is struck and presumably defeated, and can last from moments to days depending upon the course of action, warning time, and availability of forces. In the case of ICBMs, the primary topic of this paper, Phase III lasts approximately 30 minutes from the time the President issues the orders to the time when the missiles reach their target.

De-alerting proponents contend that the last phase of the nuclear kill chain, involving promptly alerted forces like Minuteman ICBMs, reacts too quickly and does not permit decision makers time to make wise choices. They assert that the short reaction times involved are inappropriate for today's threat environment. De-alerting proponents insist that adding time to Phase III, the post-execution period, will somehow lessen the use or lose pressure a decision-maker would be under in Phase II and therefore permit better decisions.

This view is not logical. Several suppositions are overlooked. Foremost is that these weapons will in all likelihood be used in retaliation for an unambiguous attack on the United States. If that is the case, concerns that there will be regrets after a decision to employ Minuteman are likely to be very, very low. Practically however, since Phase II of the chain belongs exclusively to the decision maker and no execution of nuclear force can proceed without a positive decision by the President, it makes more sense to add any desired time in Phase II. If during Phase II decision-makers believe there may be post-execution regrets and possibly a need to abort the mission, the wiser decision is to select a weapon system that permits recall after launch in Phase III, like a bomber, or take more time to decide. However, should the decision maker determine that time is of the essence during Phase II, then clearly the most appropriate weapon system to choose is the one with the shortest time from execution to target defeat. In these cases, artificially adding time to "de-alert" the system would be illogical and hinder the president's goals.

De-alerting proponents' suggestions to add delays in Phase III as a way of dealing with accidental launch or an illicit attempt to command launch also ignores a wide array of interlocking positive controls already present within these systems that do what de-alerting proponents desire. Permissive action links and positive controls already deny illegal access and ensure accidental launch cannot occur, while at the same time permit these systems to be readily available should the president give his/her authorization.

The ICBM Kill Chain

	Phase I	Phase II	Phase III
Activities	Planning, Threat Characterization, Identification, COA building	COA evaluation, analysis, selection, transmission to force provider	COA receipt, mission execution, assessment of effects
Who Performs	Intelligence and Military Staffs	Commanders and National Command Authorities/POTUS	STRATCOM
Time	Hours to Months (possibly years)	Minutes to Days	~30 Minutes

Adding time in Phase III will do nothing to aid the crucial political decisions required in Phase II

The Challenge

Russia today promptly postures about 1,820 nuclear weapons on approximately 272 silo-based ICBMs in silos and 200 road-mobile ICBMs.⁹ The United States postures 450 ICBMs, all in silos with far fewer ICBM warheads.¹⁰ In the United States, ICBMs are staged for prompt launch when so directed by the president. In this configuration, with presidential release authorized, ICBMs can be retargeted in moments and launched within strictly controlled parameters to arrive at their targets within approximately 30 minutes from the time the missiles leave the silos. As best we know, Russian systems are similarly postured, however, Russian mobile ICBMs can be flushed from main bases into the surrounding countryside and from that point operate like SLBMs. China’s missiles are not postured to respond as promptly, and are much fewer in number.¹¹ While the situation in China is changing with newer road-mobile missile developments, China and others do not yet factor into de-alerting considerations.

Since the collapse of the Soviet Union, significant concerns about command, control, security and surety of Russian nuclear weapons endure, as do concerns about underinvestment in early warning systems. Yet in the face of these factors, Russia has *increased* its reliance on nuclear forces for its national security to address its perceived inferior strategic position vis-à-vis the United States and the North Atlantic Treaty Organization. Notwithstanding the confidence Russia holds in its command and control and early warning systems (as reported in the 1998 DSWA study), there are few reports in the past decade of significant Russian investment in early warning or command and control improvements. The opacity of the Russian military budget process, corruption, and an understandable unwillingness of Russian leaders to discuss nuclear vulnerabilities combine to make it difficult, if not impossible, to ascertain the precise state of Russian nuclear capabilities.

An additional facet of the de-alerting argument is the belief that the posture of Russian forces is driven by that of the United States. If the United States were to relax its nuclear posture, “leading by

example,” Russia would follow. It is difficult to point to examples supporting this line of logic. Since the collapse of the Soviet Union, the United States has significantly reduced the size, readiness posture, and capability of its nuclear forces. For instance, the Presidential Nuclear Initiatives of 1991-92 were a U.S. effort to relax postures. These initiatives ended bomber ground alert, halted the production of B-2 bombers at 21, and cut the Peacekeeper ICBM deployment to 50 from 100 missiles. The United States eventually retired Peacekeeper beginning in 2005. Additionally, the United States eliminated 500 Minuteman ICBM silos. It also downloaded the bulk of the remaining Minuteman force from three warheads to one warhead on each launcher. The United States has also converted four Trident ballistic missile submarines into cruise missile vessels.

During this same period, while Russia has also reduced the number of weapons and systems it deploys, it produced a new generation of ICBMs, the SS-27. In May 2007 it also produced a MIRV'd version of the SS-27.¹² The SS-27s are fielded in silo and road-mobile modes, as will a follow-on MIRV variant. Russia is also producing a new generation of ballistic missile submarines and a family of SLBMs closely related to its new line of ICBMs. As mentioned previously, Russia has increased its reliance on nuclear weapons for national security. Russian leaders routinely argue Russia must also be able to threaten neighbors in the Czech Republic and Poland with nuclear destruction if these countries permit deployment of US missile defenses. Russia claims these 10 missile defense interceptors undercut its strategic nuclear forces.¹³ Many also doubt Russia is still adhering to its pledge under the Presidential Nuclear Initiatives to remove tactical nuclear weapons from Kaliningrad.¹⁴ When discussing its new missiles, Russian officials routinely boast of their abilities to penetrate even the world's most sophisticated missile defenses, such as those possessed by the United States. So, while true that the numbers of nuclear weapons fielded in Russia have come down, the emphasis has been on qualitative capability improvements to make up for decreasing numbers since the end of the Cold War. Russia is making its ICBMs more capable of striking the United States, while at the same time resting the bulk of these forces on the ICBM leg of its nuclear architecture – the very forces de-alerting proponents consider most destabilizing.

De-alerting nuclear forces appears to revolve around the much broader question of the state of the United States - Russian relationship. One might ask whether the strategic or geo-political relationship between the United States and Russia today demands that a portion of each nation's nuclear forces be kept on prompt alert. In other words, is this posture still a requirement? Promptly-alerted systems were staged in this manner early in the Cold War to protect both parties from surprise, debilitating attacks and to prevent coercion or rapid, preemptory defeat. Do the United States and Russia still need this capability?

One of the “Four Statesmen” advocating deep nuclear reductions in the oft-cited January 2007 *Wall Street Journal* op-ed was former Secretary of State George Shultz. Secretary Shultz is also attributed with saying that when it came to the fundamental principles informing national security decision-making, states should design policy not on the basis of the *intentions* of other states, but on the basis of their *capabilities*.¹⁵

By their persistent calls on the United States and Russia to de-alert prompt systems, de-alerting advocates obviously believe Russia’s *intentions* today are different from the Soviet Union’s and thus draw a straight line to the conclusion that prompt alert is no longer required. They allege that the end of the Cold War coupled with U.S. conventional superiority, permit de-alerting U.S. ICBMs and possibly SLBMs. Some go further, suggesting the United States should do this unilaterally in the belief it will lead to reciprocation by Russia. Some may suggest that reciprocation is unnecessary, believing that Russia’s military intentions, irrespective of its increased reliance on nuclear weapons for national security, are either benign or inconsequential to the United States’ national security calculus. The argument against de-alerting is that these presumptions are based on a reading of *intentions*, ignoring the very real capabilities Russia has been improving since 1995.

When set against the backdrop of the broader United States-Russian relationship one must still ask whether de-alerting is the right solution regardless of how one answers the above question. If the United States - Russian relationship still requires promptly-alerted nuclear forces, de-alerting will likely result in destabilizing the relationship and unintentionally introduce new risks. Chief among these risks are decreased weapon system safety, reliability, and maintainability, and possibly even a new risk of a potentially destabilizing “re-alerting race” in a crisis. It is an illogical argument to claim the primary goal of de-alerting is to increase strategic and crisis stability yet advocate actions that will do the opposite. New variables such as fear of the rapid return of de-alerted forces by one side, or the covert reconstitution of de-alerted forces, or an inability to reverse de-alerting actions as anticipated, will enter the equation for both sides, particularly if the level of trust and confidence between the partners is low.

Conversely, if the underlying relationship is such that both the United States and Russia believe promptly-alerted nuclear forces are no longer needed as de-alerting proponents claim, then de-alerting is an expensive half-measure, not a genuine solution, and *retirement* of these systems is the proper solution. Indeed, the history of the Peacekeeper weapon system seems to support this conclusion. There were a variety of de-alerting options proposed for Peacekeeper in the lead-up to the failed START II agreement. The problem was that most of these options, while effective, could not be verified. The more verifiable options were costly and involved more risks. Eventually, even though there was no requirement to retire Peacekeeper, rather than go through the effort of de-alerting these missiles in an unambiguous and verifiable manner on the road to retirement, the decision was to retire them quickly.

Verification

When reviewing the past work on de-alerting it becomes evident that verifiability is an extremely important criterion to guarantee that de-alerting is really accomplished. Simple mechanisms that are easy to implement can be undone within reasonable amounts of time, and are minimally invasive, such as safing individual ICBM launchers, are extremely difficult to verify. Conversely, measures that lend themselves to unequivocal verification introduce a host of unintended consequences that significantly outweigh any benefit. If misapplied or miscalculated, these options introduce the risk of one side unknowingly pinning down its forces and discovering this during a crisis.

Ironically, in the debate over de-alerting, there is no evidence that anyone addresses whether verification should even be a criterion. It is dogma that in order for de-alerting to succeed the parties must achieve a high degree of verification to ensure they are not “spoofed.” Yet there is no evidence that anyone has asked an obvious question: “Why would such high levels of verification even be required if the relationship between the United States and Russia is as benign as de-alerting proponents allege?” The desire for strong verification suggests the absence of fundamental trust between the United States and Russia. This lack of trust is the reason why these systems were promptly alerted to begin with and why they continue in this state today.

Conspicuously, nearly 18 years after the collapse of the Soviet Union, while several de-alerting actions have occurred, the posture of Minutemen and presumably Russian ICBMs remains unchanged. It would be tempting to believe inertia keeps these forces alerted. However, there are strong incentives for any nation to divest itself of unnecessary forces, if they are truly unnecessary. The fact that the posture of these remaining systems remains unchanged suggests that after contemplating a plethora of de-alerting options for nearly two decades, national security decision-makers in both countries still conclude that the underlying relationship does not permit de-alerting.

While many of former Secretary of Defense Donald Rumsfeld’s views are controversial today, during the lead up to the 2002 Moscow Treaty, he wondered why the Russians insisted on a legally binding treaty to reduce nuclear arms.¹⁶ After all, we did not need a similar treaty with the United Kingdom or France. Mr. Rumsfeld’s point was that if the Cold War was over and the United States and Russia were truly partners, they would not need such a document. Is there a parallel between signing binding arms control agreements and the need for a high level of verification to confirm de-alerting? Does Russia’s insistence on legally binding agreements before reducing forces and the desire for strong verification undercut the de-alerting proponents’ belief that Russia’s intentions are benign?

Conclusion

It would seem that the path ahead on the issue of de-alerting is to relax nuclear postures only when the state of the underlying relationship improves. Can we de-alert? Certainly. Can we de-alert

systems in a verifiable manner? Probably. But as those who examined this topic closely in the 1990s discovered, verifiable de-alerting is costly, very difficult to achieve, and introduces new problems. The low-hanging fruit in de-alerting has been picked. The 1998 DSWA study concluded it may be as hard, or harder, to achieve a verifiable de-alerting regime as it would be to negotiate an arms control agreement to retire these systems. Similarly, a 2000 study of de-alerting submarine-launched ballistic missiles concluded that the “prescription does not match the diagnosis.”¹⁷

The better question to ask is whether we should de-alert these systems. Is the strategic relationship between the United States and Russia such that de-alerting is appropriate, as proponents claim? There are several indicators that seem to imply that de-alerting does not yet make sense. If the U.S.-Russian relationship is benign, then de-alerting would be simple, and verification unnecessary. The fact that high degrees of verification and legally binding treaties are desirable suggests a lack of trust.

Fundamentally, it is very difficult to conceive how the United States could find a confident path to de-alert, de-posture, or retire nuclear weapons or systems while dealing with a strategic partner that is increasing its reliance on nuclear forces and continuing Cold-war era modernization programs aimed at qualitative improvements of those forces. Russian leaders routinely express views about the importance of nuclear weapons in defeating enemies in harsh, Cold War terms that suggest intentions that are far from benign.¹⁸ One must wonder why, if the Cold War is over as de-alerting proponents argue, Russia believes it must produce new Cold War-era nuclear weapon systems with improved capacity to penetrate defenses and strike the United States, particularly given the post-Soviet economic depression and today’s challenging economy?

Given this logical disconnect between the ascribed intentions and actions of Russia, de-alerting does not appear to be the right solution. The more viable path forward would be keeping appropriate amounts of force promptly-alerted and seeking incremental retirement of forces in reciprocal fashion at a pace that reflects the improvement in the underlying United States - Russian relationship. This approach would be more indelible and eventually achieve the desired results of de-alerting proponents without introducing new unanticipated and potentially destabilizing effects of intermediate de-alerting steps.

Endnotes

¹ *Assessment of De-Alert Options for US Nuclear Force Structures Final Report (U)*, 30 April 1998, DSWA 01-97-C-0183

² Most prominent among proponents are former Senator Sam Nunn, Dr. Bruce Blair, and Dr. Frank Von Hippel. Others include: Dr. Harold A. Feiveson, Mr. Jonathan Schell, Mr. Dan Plesch, and Mr. Lutz Hager.

³ See, for example, Bruce Blair and Sam Nunn’s op-ed “From Nuclear Deterrence to Mutual Safety,” *The Washington Post*, 22 Jun 1997, p. C01.

⁴ UNSC Resolution 62/36 , 10 Jan 08. Accessible at:
[http://disarmament.un.org/vote.nsf/97e978f95384bdcf05256705006e0a5e/86a420841262423e85257378004a10d9/\\$FILE/62_36.pdf](http://disarmament.un.org/vote.nsf/97e978f95384bdcf05256705006e0a5e/86a420841262423e85257378004a10d9/$FILE/62_36.pdf)

⁵ *Assessment of De-Alert Options for US Nuclear Force Structures Final Report* (U), 30 April 1998, DSWA 01-97-C-0183

⁶ <http://foreign.senate.gov/testimony/2009/CClintonTestimony090113a.pdf>, page 8.

⁷ http://www.whitehouse.gov/agenda/foreign_policy/

⁸ *America's Strategic Posture, The Final Report of the Congressional Commission on the Strategic Posture of the United States*, Advance Copy, 6 May, 2009, page 69, found at
http://media.usip.org/reports/strat_posture_report.pdf

⁹ Based upon publicly available data exchanged between the United States and Russia under the Strategic Arms Reduction Treaty.

¹⁰ The U.S. actually has 100 additional empty silos which count against START treaty limits, 50 converted Peacekeeper launchers at F.E. Warren AFB, WY, and 50 retiring Minuteman III launchers at Malmstrom AFB. Until these launchers are eliminated following the START elimination protocol their numbers count against U.S. totals. However, actual, usable launchers today stand at 450, a number that parallels the figures for Russia.

¹¹ China fields approximately 30 ICBMs capable of ranging targets in the entire continental U.S. to include 20 CSS-4 silo-based liquid fueled missiles, and 10 DF-31A road mobile ICBMs. They also field shorter range ICBMs capable of reaching Alaska, Hawaii, and portions of mainland U.S. China is also developing SLBMs. *Annual Report to Congress, Military Power of the People's Republic of China 2009*, Office of the Secretary of Defense, accessible at http://www.defenselink.mil/pubs/pdfs/China_Military_Power_Report_2009.pdf.

¹² MIRVs are Multiple Independently-Targetable Reentry Vehicles. In May 2007, former Russian Defense Minister Ivanov confirmed this new missile was a MIRV'd version of the SS-27,
<http://www.military.com/NewsContent/0,13319,137481,00.html>

¹³ For instance, on Monday, June 4, 2007, MSNBC reported that President Vladimir Putin "warned that Moscow could take "retaliatory steps" if Washington proceeds with plans to build a missile defense system for Europe, including possibly aiming nuclear weapons at targets on the continent." <http://www.msnbc.msn.com/id/19013495/>

¹⁴ Several government officials in the U.S. and abroad have indicated concerns that Russia did not fulfill the PNIs. In October 2004, Mr. Stephen G. Rademaker, Assistant Secretary of State for International Security and Arms Control stated publicly that he did not believe Russia had fulfilled its commitment under the PNI (originally posted at <http://www.state.gov/t/ac/rls/rm/2004/37275.htm>, however no longer available on-line or in the Department of State archive web site.) Additionally, Sweden's Foreign Minister suggested the same in 2008. ("Bildt Plays Down Russian Nuclear Threat" The Local, Swedish News in English, Published: 18 Aug 08, <http://www.thelocal.se/13780/20080818/>

¹⁵ Secretary of State Shultz is widely attributed but not directly quoted with this saying. For example, in an article titled "The Bush-Putin Nuclear Agreement: Rhetoric vs. Reality" by Ben Friedman from the Center for Defense Information in April 2002: "No contingency short of deterring a nuclear first strike justifies keeping that many nuclear weapons. Bearing in mind former Secretary of State George Schultz's principle that it is the capabilities, not the intentions, of other states that govern national security decisions, it is clear that though we are moving toward a day where U.S.-Russian relations are no longer based on the prospect of annihilation, we have not yet arrived there." <http://www.cdi.org/russia/201.txt>

¹⁶ He said: "So if you can still consider the United States and Russia to be enemies, then obviously it would be natural to go into negotiations and establish ways that you can prevent each other from hurting each other. If you don't consider each other enemies -- We don't have negotiations like that for treaties to not be hostile with Mexico or Canada or France or England or any number of countries in the world. Russia is still, I think, captured to a certain extent by the old Cold War mentality and fear and apprehension and concern about the West." Found at <http://www.defenselink.mil/transcripts/transcript.aspx?transcriptid=1586>, accessed 12 Mar 2009.

¹⁷ Robert Rudney and Willis Stanley, "De-alerting Proposals for Strategic Nuclear Forces: A Critical Analysis" *Comparative Strategy*, 19:1-34, 2000.

¹⁸ According to an Oct 2008 Reuters news report, "Russia hopes to deploy a new nuclear missile next year designed to penetrate anti-missile defenses and will build eight submarines to carry it, defense officials said on Thursday. The latest statements underline Moscow's determination to upgrade its nuclear strike forces on land, sea and air. They are regarded by Russian commanders as the cornerstone of the country's defenses."
<http://www.reuters.com/article/worldNews/idUSTRE4915BN20081002>