

Questioning the Holy Trinity: Why the US Nuclear Triad Still Makes Sense

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Despite renewed enthusiasm for nuclear disarmament, a contemporary security environment far removed from that of the Cold War, and increasing budgetary pressures at home, US interests continue to be best served by retaining a triad of nuclear forces. While options for a reduced force structure may appear to offer short-term political and economic expediency, in the long run a three-legged deterrent - possibly consisting of less delivery vehicles, operational warheads and even potentially de-alerted forces - represents the best way to balance the competing requirements of contemporary and future US nuclear policy. Indeed, it may be that retaining the triad provides the most realistic method of re-establishing US-Russia strategic stability, and the most credible basis for advancing the drive for global nuclear reductions, strengthening global nuclear security, and even working towards nuclear abolition.

Key Words: nuclear weapons, strategic triad, United States, modernization, strategic stability, arms control

In the current geopolitical climate increasingly characterized by shifting and diverse strategic threats, renewed enthusiasm and demand for global nuclear reductions, and evermore influential constraints on defense spending, pressure is mounting on the United States to rethink the basic tenets of nuclear strategy and deterrence. This has led to calls for the United States to reduce the numbers of deployed nuclear warheads, to shift security planning towards a greater focus on non-nuclear capabilities, and has begun to cast doubt on the necessity, desirability and affordability of maintaining a highly-sophisticated three-legged triad of strategic nuclear delivery systems. While a mixture of intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs) and strategic bombers offered assurance of response and underpinned conceptions of nuclear deterrence and strategic stability for many years, it is less clear that in a new post-Cold War environment the rationale for such a force structure remains. Accordingly, this article examines whether the United States should continue to maintain a triad of nuclear forces while seeking to reduce its reliance on nuclear weapons in the course of balancing the political, bureaucratic, financial and security pressures of an increasingly complex and capricious strategic world.

The fundamental guiding principle of a three-part nuclear deterrent was and remains ensuring that the United States will always have the capability to threaten massive retaliation in response to any nuclear attack on the US homeland or its allies. During the Cold War, such thinking led the United States to build thousands of nuclear warheads and the ICBMs, SLBMs and heavy bombers with which to deliver them, in order to underpin the delicate 'balance of terror' with its chief opponent, the Soviet

Union.¹ As long as the Cold War rumbled along, such a gigantic force was largely politically and financially acceptable, but with the end of the standoff with the Soviet Union, and the beginning of the epoch of US primacy, such a force began to look outdated, unnecessary, and hugely costly.² Since 1991, and particularly in the aftermath of the terrorist attacks of 11 September 2001, new conceptions of security and deterrence have begun to emerge that have fundamentally questioned the necessity, efficacy and overall contribution to deterrence of retaining such large nuclear forces. Moreover, while nuclear numbers have diminished considerably in the last two decades through successive reductions by the United States and Russia, as the strategic threats have diversified, it has become increasingly difficult for Washington to justify all three nuclear delivery systems. Indeed, the desire to go beyond the 700 strategic delivery vehicles (SDV) permitted by the 2010 New START Treaty has sparked a serious debate about whether further reductions can still be made while also retaining the triad of nuclear forces.³ With the United States deciding on the future of each leg of the triad in the current era of budgetary constraints, this debate is acquiring considerable political significance, and is set to be a key challenge facing President Obama as he sets about securing his nuclear legacy in the coming months, and for the next president who will be responsible for developing a New START follow-on agreement and other future nuclear initiatives.

The central aim of this article therefore is to examine the complex mixture of bureaucratic, political and strategic dynamics that are driving a reassessment of the continued wisdom and necessity of a three-part nuclear delivery platform, and whether the retention of this posture is commensurate with the requirements of deterrence and the current climate for greater nuclear reductions. Other options, such as moving toward a dyad or even monad force structure clearly have benefits and political appeal, but a closer inspection suggests that these are primarily short term, politically driven and inherently limited solutions. Ultimately, the article suggests that the retention of a nuclear triad – perhaps with lower numbers of delivery vehicles, a reduced overall warhead stockpile and even de-alerted forces – may provide the most stable basis for balancing US security requirements with wider political, financial and geopolitical dynamics. It may also, somewhat paradoxically, represent the best means of re-establishing stable US-Russia relations, moving forward with the US-led global nuclear reductions agenda embraced by the current President, and inching towards “the peace and security of a world free of nuclear weapons.”

Triad and tested: the evolution of US nuclear force structure

The United States developed a triad of strategic delivery vehicles in the early part of the Cold War to ensure that a credible nuclear deterrent was deployed against the Soviet Union. As each leg offered different strategic advantages, and a combination of forces ensured against catastrophic failure in any one system or a pre-emptive “bolt from the blue” attack, the triad was therefore perceived to offer the best means of assuring a credible US retaliatory nuclear force. While east-west geopolitical tensions have certainly cooled since the darkest days of the Cold War – notwithstanding the recent downturn over events in Ukraine⁴ - the large and sophisticated nuclear forces retained by Russia and operated by others potentially hostile to the United States has ensured that the original logic of the triad has remained persuasive. At the same time, the development and maintenance of the triad has also been the product of bureaucratic and domestic politics, as each branch of the US Armed Services has sought a piece of the strategic nuclear mission⁵ - in the words of the CATO Institute’s Benjamin Friedman, “the triad grew from bureaucratic compromise, not strategic necessity.”⁶ The result is that for both political and strategic reasons, a triad of strategic nuclear delivery systems has rarely been questioned since its inception.

The three-legged strategic nuclear triad only came into existence in the 1960s as technological advances allowed new ICBMs and SLBMs to be combined with strategic bombers (which had been the sole strategic system for over a decade). While a nuclear deterrent based exclusively on long-range bombers had always been vulnerable to Soviet air defense systems, pre-emptive strikes and fighter aircraft, the new three-part force structure offered far greater certainty, credibility, and flexibility. Long-range bombers remained a useful way of signaling intent and could be called back; ICBMs offered the ability to respond rapidly and with massive fire-power; while SLBMs provided the ultimate guarantee through their ability to remain undetected beneath the surface of the ocean. A large and diverse nuclear delivery structure also ensured that any nation attempting a nuclear attack on the United States could not be sure of success, and therefore would have to assume that it would bear the brunt of an overwhelming US retaliatory nuclear strike. Consequently, the triad was seen as enhancing deterrence and mutual assured destruction (MAD) by ensuring that the United States could respond to any attack at any time. As Lawrence Freedman has noted:

... there is an obvious danger in putting all the ‘eggs in one basket’. If the deterrent depended solely on one type of delivery vehicle, then the adversary’s defensive problem would be simplified.⁷

In addition to bolstering the efficacy of deterrence through assuring the credibility of a second strike capability, a triad of strategic delivery vehicles also offered a guard against catastrophic failure in any one system, or a technological breakthrough which might undermine any part of the deterrent (such as

a missile defense system or an enhanced anti-submarine warfare capability). As Dana Johnson et al point out “... a triad of forces underpins nuclear deterrence and stability by reducing the possibility that US nuclear capability could be eliminated by any single point of failure.”⁸

The strategic triad also played (and some argue continues to play⁹) a key role in US extended nuclear deterrence guarantees in different parts of the globe alongside the deployment of US sub-strategic nuclear weapons and conventional forces.¹⁰ In this way, while various sub-strategic or “tactical” deployments in Europe or Asia demonstrated resolve and political solidarity in times of crisis, these could be backed up by strategic nuclear forces based in the United States or at sea. This “backup” was key to the credibility of the extended deterrence guarantees to these states, and also to other US allies.¹¹ At the height of the Cold War thousands of sub-strategic delivery vehicles were deployed overseas; and approximately 180 free-fall nuclear gravity bombs remain in Europe today.¹²

Finally, given the bureaucratic nature of its genesis and evolution – the triad created different stakeholders in the strategic nuclear business that led to a natural conservatism in US nuclear force planning. For example, while the three branches of the US Armed Services each had a different strategic vision and the collective result often lacked cohesion, the maintenance of the triad helped avoid competition between them.¹³ The result was that even as nuclear forces began to be drawn down after the peak in the 1970s, the US military and defense establishment remained wedded to the central logic of the triad, at least in part for bureaucratic reasons. More broadly, a far larger political and economic constituency - with stakeholders firmly linked to the continuation of the status quo - also underpinned the triad.

Despite substantial reductions in all US nuclear forces – including strategic delivery vehicles - in the two decades that have passed since the end of the Cold War¹⁴, the triad has remained intact and largely untouched. While the size of US nuclear forces is dwindling, the shape, so to speak, remains the same. Only once during this period was the logic underpinning a triad seriously questioned, but the newly established STRATCOM decided in 1992 to retain the force structure as a hedge against an uncertain future, rather than move towards a single delivery platform based on de-alerted bombers and submarines.¹⁵ As a result, as the types of potential missions changed – and in many ways narrowed – and as the numbers of nuclear weapons perceived to be required to fulfill these objectives also reduced, the triad endured.

While the notion of a three-legged nuclear deterrent remained sacred during this period, the post-Cold War era has witnessed an expansion of strategic deterrence thinking away from the relatively discrete role played by nuclear weapons. This dynamic has its genesis in the 1990s, but was

most clearly outlined and driven forward by the George W. Bush administration as part of its 2001 Nuclear Posture Review (NPR). The NPR outlined “a new strategic framework” for nuclear deterrence that would be based upon a “New Triad” of strategic forces.¹⁶ At the heart of this new strategy was a desire to expand the concept of deterrence to include other strategic capabilities, so that the three-legged nuclear weapons system would represent just one leg of this new force posture. The traditional nuclear retaliatory capability would be augmented by new active and passive defenses (primarily a new integrated ballistic missile defense system [BMDS]), and by a “revitalized defense infrastructure able to provide new capabilities in a timely fashion to meet new and emerging threats.”¹⁷ However, while the Bush administration was keen to augment the nuclear retaliatory “leg”, they saw no need to change the three-part force structure that had formed the backbone of US security since the 1960s. As a result, between 2002 and 2008, the Bush administration put plans in place to modernize all three-legs of the aging strategic nuclear triad.

The Obama administration appears to have followed suit, despite placing the issue of nuclear disarmament firmly at the center of the US policy debate. The 2010 Nuclear Posture Review was unequivocal in this respect:

After considering a wide range of possible options for the U.S. strategic nuclear posture, including some that involved eliminating a leg of the triad, the NPR concluded that for planned reductions under New START, the United States should retain a smaller Triad of SLBMs, ICBMs, and heavy bombers. Retaining all three legs will best maintain strategic stability at reasonable cost, while hedging against potential technical problems or vulnerabilities.¹⁸

This commitment was reiterated in the 2011 Defense Budget and Priorities Report released by the administration,¹⁹ and Secretary of Defense Ashton Carter has also been unambiguous about his support for the triad, describing it as “foundational to our [US] security.”²⁰ As such, and despite the concerns of some leading Republicans²¹, the conventional wisdom is that the Obama administration remains committed to the logic of a three-part nuclear retaliatory force, at least for the foreseeable future.²²

The three-legged triad of strategic nuclear delivery vehicles has a long history and tradition in US security thinking and policy, and this has not noticeably diminished despite the end of the Cold War and development of new and more flexible notions of strategic deterrence. While this clearly has much to do with the current and possible future nuclear capabilities of peer competitors – particularly Russia – as well as other security challenges, it is also perhaps a reflection of the political and bureaucratic stakeholders that have formed behind the triad, and of the natural logic that: “if it isn’t broken, don’t fix it.”

Where are we now: New START and after

According to Hans Kristensen and Robert Norris, the United States currently maintains a total stockpile of roughly 4,760 nuclear warheads for delivery by more than 800 ballistic missiles and strategic bombers. Approximately 1,902 of these are currently deployed with strategic delivery vehicles across the United States or at sea; a further 2,680 are in storage as a hedge against future developments; around 180 warheads remain in Europe under the NATO burden sharing agreement, while roughly 2,340 have been retired but are still intact and await dismantlement.²³ As of October 2015, under the New START Treaty process, which must be finalized by 2018, the United States deploys 1,538 strategic warheads on 762 strategic delivery vehicles.²⁴ Over the next five years the United States must reduce these numbers to 1,550 deployed warheads and 700 deployed delivery vehicles (see Table 1 below). However, the New START Treaty *does not* include reserve US warheads, non-strategic forces or those awaiting dismantlement.

Table 1: The US Triad under New START²⁵

‘Leg’	Strategic Delivery Vehicle/s (SDV)	New START Strategic Delivery Vehicle Numbers	Strategic Delivery Vehicle due to Expire	New START Allocated Warheads
ICBMs	Minuteman III (MM-III)	420	2030	420 W78/W87 warheads
SLBMs	Ohio Class SSBN	240 SLBMs (20 Trident D5 missiles on 12 SSBN’s)	2027	1090 W76/W88 warheads
Bombers	B2 bomber B52(H) bomber	40	2034 2040	40 ALCM/ B61/ B83 warheads ²⁶
Total forces		700		1550

While making the cuts to reach the levels permitted under the New START Treaty seems readily achievable, plans to modernize or replace all three legs of the triad will also need to be made in the next few years. While some components are relatively modern, around 200 Minuteman-III missiles have been deployed since 1979, and the B52 bomber was first adopted for the nuclear mission in 1961.²⁷

However, the most pressing concern facing US defense planners is the replacement of the current fleet of 14 Ohio-class SSBN's with 12 new SSBN(X) ballistic missile submarines. While the first of these submarines is not due to retire until around 2027 (one per year thereafter) the long-lead times and enormous costs involved with this endeavor mean that plans and financing must begin as soon as possible. Replacing the submarines has already been delayed once – as part of the Department of Defense's 2013 fiscal plan – which has put back the first procurement of the new submarine until 2021, with plans for the first new boat to enter service in 2031.²⁸ The SSBN(X) will have an expected life service of 40-years, and is projected to cost around \$96 billion in total.²⁹

At the same time the US Air Force is currently in the process of planning for a next generation long-range nuclear bomber – known as LRS-B - but given that the service life of the current B52 and B2 bombers is relatively long, this decision may be postponed.³⁰ It is expected that each bomber would cost around \$500 million,³¹ with an estimated total cost of \$55 billion.³² Finally, the US Air Force is also working on a study to extend the life of the Minuteman ICBM force – currently deployed in silos in Montana, North Dakota and Wyoming - through a \$7 billion program, which if successful will see any full replacement decision delayed for at least a decade.³³

In addition to the direct costs of maintaining the triad, the cost of the US nuclear weapons complex as a whole should not be discounted – these include other costs for storage, personnel, research and development, stockpile stewardship, testing, security, decommissioning and waste management.³⁴ These challenges will be further exacerbated by “systemic problems across the nuclear enterprise” due to micromanaging, maintenance problems, and low morale, highlighted by internal and external reports in 2014, that will also need to be addressed.³⁵ Estimates differ as to how much the “nuclear weapons business” costs the United States annually, but conservative assessments would suggest around \$30 billion – approximately 0.4% of GNP.³⁶ The Obama administration has pledged to spend some \$125 billion over the next ten years on the nuclear triad.³⁷ However, the Congressional Budget Office suggested in early 2015 that this could be as much as \$355 billion between 2014 and 2023.³⁸ Either way, if current modernization plans go ahead, the United States seems likely to retain a triad of nuclear delivery vehicles well into the second half of this century.

Framing the debate: international and domestic pressures

Given the large costs associated not only with maintaining but also updating the existing arsenal of strategic delivery vehicles and associated infrastructure, it is natural that the continuing logic of keeping all three-legs of the triad should be questioned. What makes the current debate particularly interesting is an amalgamation of new pressures on US nuclear force planning. These pressures emanate from both external and internal sources; first from an increasingly different and diffuse global security and deterrence environment and a re-energized movement for nuclear reductions, and second from domestic demands to reign in and moderate defense spending.

The present debate about the future of the triad is predominantly a reflection of the changing strategic environment facing the United States, and specifically the role that nuclear weapons and nuclear deterrence can play in this new context. The nuclear triad was essentially designed for the requirements of the Cold War and the standoff with the Soviet Union. Given the considerable impact of the 9-11 terrorist strikes on US national security thinking, a sizable three-legged nuclear force structure looks less necessary, and possibly even counter-productive. Nuclear critics increasingly question the utility of the triad in the face of emerging threats, such as cyber-attacks on defense, critical or even nuclear weapons infrastructure³⁹, and seemingly irrational actors – such as terrorist groups or “rogue states” – designated as being impervious to traditional notions of nuclear deterrence.⁴⁰ Moreover, triad critics argue that states such as Iran and North Korea are not only less susceptible to deterrence, but also that their limited strike capabilities render a large US force extraneous.⁴¹

Although the strategic nuclear triad remains a centerpiece of relationships with traditional peer competitors such as Russia and China – given their nuclear capabilities and uncertain political futures - there is a feeling that nuclear weapons have developed an extra-strategic rationale. In this sense, nuclear weapons have become an emblematic symbol of modernity and power, regardless of their actual (perceived) utility.⁴² Strategically, therefore, the relevance of the triad is being pressured by changing external dynamics in terms of threat scenarios, as well as normatively through challenges to the utility and role of nuclear forces in the modern world more broadly. Equally, critics argue, it is becoming increasingly difficult to envision scenarios where the United States would use nuclear weapons, let alone need to use them rapidly and overwhelmingly. In a sense it is becoming less clear what these nuclear weapons actually deter.

Secondly, the logic of continuing to deploy a three-legged nuclear capability is being challenged by the integral role that the United States plays in global nuclear disarmament and nuclear security. Fundamentally, the maintenance of a large number of nuclear weapons (and by implication delivery vehicles) creates a strong barrier to nuclear arms reductions, and especially the idea of

multilateralizing such discussions (particularly when combined with US conventional capabilities which magnify current military imbalances).⁴³ Such apparent intransigence has become a major problem for the efficacy of the Nuclear Nonproliferation Treaty (NPT), and as support for “global zero” has re-emerged and grown in recent years. That said, the United States has been committed to the goal of working towards global nuclear disarmament through its obligations to the NPT for several decades⁴⁴, and has made significant progress in reducing the size of its arsenal, in parallel with Russia. Moreover, President Barack Obama has emerged as one of the biggest modern champions for further reductions and has actively sought to change the narrative about disarmament. By way of example and to quote the April 2009 Prague speech:

... as the only power ever to have used a nuclear weapon, the United States has a moral responsibility to act. We cannot succeed in this endeavor alone, but we can lead it, we can start it ... To put an end to Cold War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same.⁴⁵

In parallel, the United States is under pressure to continue to pursue arms control agreements, such as a New START follow-on that might account for sub-strategic (tactical) or other nuclear forces – a goal the Obama administration has (at least in the past) been particularly vocal about.⁴⁶ More broadly, the next steps in arms control will likely require not only quantitative cuts, but also qualitative ones too; this could entail both shifting away from a triad and reducing reliance on nuclear weapons in the US national security strategy. But these arms control efforts must be kept in strategic context.

The final component of the current debate about nuclear weapons and nuclear spending is the state of the US economy: in times of economic hardship, defense spending has often appeared to be a good place to start making cuts. Indeed, in the last few years – especially under the stewardship of Robert Gates, and more recently Leon Panetta, Chuck Hagel and now Ashton Carter – considerable efforts have been made to reshape and decrease the enormous sums of money spent by the United States on defense infrastructure. In this regard, the recent budget crisis in Washington, in particular the impact of the January 2013 sequester, have highlighted the challenges of maintaining the triad; especially the delicate act of balancing short-term fiscal pressures with long-term strategic planning and procurement decisions. In fact, some long-range bombers were grounded for fiscal year 2013 as a direct result of the sequester, which resulted in a significant reduction in practice flying time.⁴⁷ Moreover, investing in the triad also means investing in the nuclear infrastructure required to safely and effectively sustain such a force, and when these overheads are added to the direct procurement

costs of nuclear delivery systems, the figures become considerably larger.⁴⁸ The problem is summed up well by the former head of US Strategic Command, General Robert Kehler: “as we look to modernize ... can we in fact afford the resources to modernize the entire triad?”⁴⁹

The issue of cost is not simply a budgetary issue, but increasingly a political one too. Republican lawmakers have been quick to threaten action – particularly regarding US commitment to the New START Treaty – if the Obama administration does not fulfill its pledge to modernize US nuclear forces in their entirety.⁵⁰ Equally, Democratic lawmakers have suggested that the nuclear weapons complex represents a good place to begin making the cuts that are fundamental to the US economy. In fact, Senator Carl Levin was quoted as saying that the “US nuclear arsenal is ripe for cuts.”⁵¹ That said, partisan political battles on Capitol Hill and amongst the Armed Services often merely build upon rather than undermine the strong bureaucratic and institutional inertia toward the triad. Recent Russian actions in Crimea and Ukraine and its suspected violations of the 1987 Intermediate Range Nuclear Forces (INF) Treaty have further complicated the domestic politics of nuclear modernization.⁵²

Where to now: which leg(s) to stand on?

While the viability, value and necessity of the triad are being challenged from a number of different angles, it is far less clear what should replace the tried and tested three-legged nuclear force structure. Some have suggested cutting one or even two legs of the force and relying purely on SLBMs for deterrence purposes, which might then be augmented by increases in advanced conventional weaponry such as ballistic missile defense and conventional global strike systems - in a sense moving toward a more balanced new triad of strategic forces.⁵³ Others even hope that such moves might pave the way for removing nuclear weapons from US national security apparatus entirely at some point in the future.⁵⁴ Nevertheless, there remains a strong case to retain the triad of nuclear forces even with lower numbers of warheads, in order to ensure credibility and flexibility, and to hedge against an uncertain long-term future, particularly relations with Russia.

The most popular suggestion for a new US strategic force structure is to move towards a two-legged dyad or single-legged monad of nuclear forces. The logic being that by removing one or even two delivery systems significant cost savings can be made, forces can be brought more into line with perceived requirements (and obligations), and the United States would make a public show of support for the nuclear disarmament agenda.⁵⁵ Such a move would also mean that funding could be more

purposefully directed at modernizing the most important aspects of the nuclear deterrent, and ensuring that nuclear infrastructure and stockpile stewardship are adequately funded and maintained.

The most radical option would be to move towards a single-leg delivery posture for US nuclear forces. Such a posture would almost certainly be based on SLBMs, much like the current United Kingdom nuclear posture based on the Trident delivery platform. As Dana Johnson et al point out: “if the United States were to choose a monad for its future strategic force, the SSBN would probably be the leg of choice owing to its survivability at sea and flexible weapons loads.”⁵⁶ Total reliance on a single delivery system would certainly save a considerable amount of money, but it is less clear that such a move would be either politically or strategically acceptable to major stakeholders in the US nuclear business. Domestically the US Air Force would have to be persuaded to give up both ICBMs – which will remain operational until 2030 - and strategic bombers – which are dual use, and for which appropriations have already been allotted for future systems. Internationally, it is not clear that such a move would contribute towards stability and security, because the United States would lose considerable flexibility (by deploying/alerting strategic bombers), and assurance of response in the face of a catastrophic system failure or technological breakthrough (such as the ability to locate and/or intercept SSBNs underwater, through improvements in ballistic missile defense capabilities, or cyber developments⁵⁷). Moreover, a single-legged nuclear force may also call into question the credibility of US extended deterrence guarantees around the globe.

A more moderate option would be to remove one leg of the triad and move towards a dyad of nuclear forces. While this move would not achieve the financial savings of moving to a monad, it may alleviate some of the concerns involved with reliance upon a single means of nuclear delivery and avoid inter-service conflict by maintaining one of the legs operated by the Air Force, either ICBMs or the bomber leg. However, there are strong arguments to retain either of these assets: (1) ICBMs will not need to be replaced until 2030, meaning that a decision on their replacement can easily be postponed, and offer the capacity of rapid and overwhelming response to attack; (2) strategic bombers can be called back, a flexibility that ICBMs do not offer, and therefore offer the possibility of sending warning signals which can be used for coercive diplomacy purposes. However, other than signaling potential the bombers do not offer many advantages over a single-legged SLBM-based force structure.⁵⁸ While a dyad of either configuration could appear to offer “maximum deterrent value relative to today’s triad, and maintains its stabilizing properties,”⁵⁹ it is not clear that the savings gained by cutting one leg of the triad would be worth the strategic and political cost. Essentially the concern here is that moving toward a dyad in the present climate would be a financially driven short-

term move rather than a longer-term decision based on a strategic calculation. The option of a dyad should be reconsidered closer to the decision-time over replacing ICBMs, but at present is premature and potentially destabilizing.

One way in which proponents of a dyad or monad suggest that concerns might be mitigated is through a greater reliance on advanced conventional weaponry for strategic and deterrence missions. Advances in the technological capabilities of both offensive and defensive non-nuclear strategic forces has led to suggestions that many of the roles traditionally reserved for nuclear weapons can now be fulfilled at a non-nuclear level. Indeed, the 2010 NPR made just this point:

Fundamental changes in the international security environment in recent years – including the growth of unrivalled U.S. conventional military capabilities, major improvements in missile defenses ... enable us to fulfill ... objectives at significantly lower nuclear force levels and with reduced reliance on nuclear weapons ... without jeopardizing our traditional deterrence and reassurance goals.⁶⁰

Politically, moving toward a more diverse deterrent posture would ensure that armed service stakeholders remain involved in strategic planning, thus lessening domestic opposition to nuclear cuts, while at the same time bolstering international non-proliferation norms. Strategically, the argument for greater reliance on conventional forces has been driven partly by advances in technological capability and partly by the changing requirements of deterrence. Essentially proponents of conventional deterrence consider a much greater role in deterring new nuclear threats through the deployment of ballistic missile defenses and the development of non-nuclear global prompt strike capabilities.⁶¹ Such diversification potentially provides US planners with more flexibility in a crisis and the ability to circumvent some of the political and normative problems associated with nuclear weapons. Equally, conventional programs may offer greater value for money given their dual capabilities and ability to perform a broader range of strategic and sub-strategic roles.

However, new advanced non-nuclear capabilities do not represent a strategic panacea; indeed moving toward a greater reliance on these capabilities may actually decrease stability and security, and make nuclear reductions globally more difficult.⁶² Essentially, while diversification may mean that the United States can rely less on nuclear forces and even reduce them, the qualitative and quantitative dominance the United States enjoys in advanced conventional weaponry exacerbates considerably the vulnerability felt by its rivals. Russian concerns over US and NATO ballistic missile defense plans in Europe⁶³, and Chinese concerns of a non-nuclear US first strike capability⁶⁴, have already led to concerns about decreasing strategic stability. As such, nuclear cuts combined with increases in advanced conventional forces or other similar changes to the US nuclear posture could

suggest a slow death for nuclear arms control, and even perhaps a renewed incentive for states to build more nuclear weapons. Consequently, a move towards a greater role for non-nuclear forces may only increase the value of nuclear forces for others.⁶⁵

The final option then is to retain a strategic triad, but to reconfigure force structure and strategic posture to account for recent developments, namely economic pressures, the diversification of strategic challenges and renewed political interest in disarmament. For example, the United States could maintain a triad but unilaterally reduce to 1,000 strategic warheads and moves could be made to reduce alert postures and increase launch times of various forces, minimizing the risks of accidents, miscalculation or unauthorized use.⁶⁶ Despite the challenges outlined above, there remains a strong strategic case to retain a three-legged nuclear force, and to consider long-term security requirements rather than short-term economic and political dynamics, and perhaps expediency. Primarily, a mix of nuclear forces continues to offer a flexible, credible and secure basis for nuclear strategy. This is particularly the case given the fact that traditional “peer competitors” such as Russia and China remain central factors in US strategic planning. Given the size of their nuclear arsenals and the uncertainty surrounding their political futures, sustaining a triad of forces is an insurance policy against future aggression, and helps to reassure increasingly anxious allies in light of recent events – particularly NATO allies in Europe worried about Russia.⁶⁷ According to former Under Secretary of Defense for Policy Jim Miller, “the triad is still fundamentally about the fact that Russia has nuclear weapons, and the course of Russia’s future is uncharted.”⁶⁸ Rather than creating a norm for disarmament, cutting a leg of the triad may also embolden proliferating countries, such as North Korea, who may perceive the United States as “weak and vulnerable.”⁶⁹ Equally, the triad – in coordination with other forces - continues to offer the best basis for a credible policy of extended nuclear deterrence to allies overseas who could be proliferation risks were it not for US security assurances.

A three-legged nuclear force appears to represent the best current strategic balance of costs, requirements, and stability for three main reasons: (1) it assures future US security in an unpredictable world; (2) it reduces, or at least to some extent nullifies domestic political and bureaucratic divisions and pressure; (3) and it offers maximum strategic flexibility as well as a credible path towards further nuclear cuts. In a similar vein, Amy Woolf has argued that:

... it may be prudent to plan to retain the current force structure by beginning the modernization programs now, while holding open the option of later reductions in the size of the programs and the resulting force structure. In other words, current threats and current

strategy would make the current force structure appropriate, while future changes in threats and strategy may allow changes in it.⁷⁰

Further to this, it is not necessarily clear that reducing the triad will make significant cost savings, especially in the short-run. Bureaucratic stakeholders are unlikely to accept major cuts without some type of compensation, and decommissioning weapons and delivery systems will remain an expensive and protracted process. Equally, many costs are shared across the nuclear weapons complex, meaning that they actually become more expensive in per capita terms.⁷¹

The triad and the US global nuclear agenda

While the retention of a triad might at first glance look like a snub to international disarmament efforts and run counter to the specific goals on nuclear reductions outlined by the Obama administration, it may be that a triad with lower numbers in fact represents the best and most credible way to drive the disarmament and nuclear security agenda forward. There are three main reasons for this: (1) a triad of forces gives greater confidence in US capability and therefore makes reductions more feasible; (2) cutting one or more leg of the triad but increasing the robustness of the others does not necessarily send out positive signals internationally, particularly if this also means more reliance on advanced conventional capabilities, such as BMDS; (3) retaining a triad should allow the United States to facilitate and pursue other methods of nuclear reductions with the current security context in mind, such as nonproliferation and nuclear security, along with arms control.

If the Obama administration – or indeed any future administration - is serious about continuing the bilateral arms reductions agenda with Russia (and perhaps in the future, other countries too), then the retention of the triad but at lower numbers might be the best way to achieve this. Morton Halperin for one has argued that contrary to perceived conventional wisdom “having a triad makes it easier to argue that we can go to lower numbers.”⁷² The logic being that a strategically diverse force makes lower numbers of weapons/delivery vehicles more secure and credible, and therefore it makes political acceptance of further cuts more likely. As former Air Force Chief of Staff Norton Schwartz explains:

... it remains our conviction that as you go down [in nuclear numbers], the triad actually becomes more important. The diversity, the variety, the attributes associated with each leg of the triad reinforces each other to a greater degree.⁷³

It is difficult to consider the Senate agreeing to further nuclear cuts in US nuclear weapons without clear confidence in the efficacy and utility of the deterrent – concerns that would likely be assuaged

through the retention of the triad. For example, a New START follow-on treaty, perhaps reducing deployed strategic warheads to 1,000 and deployed delivery vehicles to 500, such as that advocated by Stephen Pifer and Michael O'Hanlon, might only be politically possible by retaining a three-legged force structure.⁷⁴ A future scenario could envisage even lower numbers, perhaps including a higher percentage of strategic delivery vehicles held in reserve and not deployed, which could be uploaded if necessary, depending on whether or not Russia reciprocates and the status of strategic stability. Such a position might additionally include agreements with Russia and others on de-alerting strategic nuclear forces.⁷⁵

It is also unclear whether cutting one or more legs of the triad would necessarily be commensurate with international non-proliferation objectives. If the United States were to move away from a three-part nuclear delivery platform for both political and strategic reasons, enhancements in capabilities would very likely need to be pursued in other forces to make up for this. For example, cutting ICBM's or strategic bombers, or indeed both, would almost certainly mean that improvements in terms of numbers or capabilities would be sought in the SLBM force, and/or the remaining ICBMs or bombers. ICBMs might need to be further hardened or even be made mobile, while bombers may be placed on a higher state of alert. Neither move would necessarily help strategic stability nor the nuclear reductions agenda. Both would entail considerable expenditure and potentially raise the risks of accidents.⁷⁶ Equally, it would be very likely that other advanced non-nuclear capabilities would be improved, which, as discussed above, would be unlikely to aid US non-proliferation goals or the strategic stability required for arms control either.

Finally, there is a strong argument that other far better policies could be pursued by the United States that would aid non-proliferation and disarmament objectives far more than short-term political meddling with the triad. A focus on the huge number of nuclear warheads might be a good place to begin – as has been mentioned earlier – given that New START only covers a very select type of nuclear weapons and maintains what some see as an excessive number of strategically deployed forces. For example, and while President Obama's offer in Berlin in 2013 to reduce to 1,000 warheads would ideally occur in tandem with Russia, unilateral US reductions are also an option.⁷⁷ Cuts to reserve stockpiles of warheads, expediting the dismantlement of retired warheads (which would likely require increased investment in nuclear infrastructure), and even considering a new treaty which deals with all nuclear forces – and not just delivery vehicles – and limiting total weapons, not just strategic ones is a good place to start. In fact, General James Cartwright, former Vice Chairman of the Joint Chiefs of Staff, has suggested that the United States could go as low as a total stockpile of 900

warheads (approximately 1/3rd of current forces).⁷⁸ The United States and Russia could then decide how they wanted to deploy these warheads to suit their particular political and security requirements – which could still be based on the triad (whether nuclear or conventional. It is possible that these forces could be gradually de-alerted too, reducing the risks of accidents, miscalculation and possible unauthorized use.⁷⁹ A commitment to no first nuclear use could also be an option.⁸⁰

In many ways, the triad is a conspicuous reminder of the strategic requirements of a previous age, but this does not mean that it has lost its use, utility and worth, either politically or strategically. While the nuclear debate in the US has recently focused on the triad, it is far from clear that altering the three-part nuclear deterrent force makes sense for US strategic planning or cost-saving; indeed, such a move might even prove counter-productive in the long run. Retaining a triad, perhaps at lower numbers or at a more relaxed level of readiness, remains a solid basis for US nuclear deterrence, non-proliferation and security policy, and should not be seen through a short-term financially driven lens, but rather through a broader perspective which includes its value as a bedrock for wider efforts toward global nuclear security.

Conclusion

While current pressures to dramatically rethink US nuclear strategy and force structure should not be ignored, it is arguably more important to consider these pressures in a long-term strategic context. Making decisions for short-term political and economic expedience is not a good method for ensuring the credibility and utility of the ultimate deterrent and guarantor of US national security. In this sense, to paraphrase John Lewis Gaddis, nuclear strategy must be based upon a sober assessment of “how ends are related to means, intentions to capabilities, and objectives to resources.”⁸¹ Despite current geopolitical, strategic and economic trends, a triad of nuclear forces, possibly consisting of a reduced number of both delivery vehicles and warheads, de-alerted weapons systems, and allied with other nuclear confidence building measures, continues to represent the best possible nuclear posture for US security and wider US-led international nuclear objectives.

This is not to say that changes may not be needed, but while the world of 2030 or 2050 remains unknown, and Russia and others remain key players in the nuclear game, it makes sense to retain a flexible and capable nuclear force. As recent events in Ukraine demonstrate, it is far from certain that the asymmetric conflicts of the last two decades represent an irreversible change in how force is used in international relations, and it is not beyond comprehension to see a return to great

power and traditional interstate conflict at some point in the future. Indeed, Russia and China remain powerful factors in US nuclear planning, particularly as they both seek to modernize and make qualitative improvements to their own strategic nuclear forces.⁸²

That said, it is also likely, although perhaps somewhat paradoxical, that maintaining a triad represents the best option for moving forward with nuclear arms reductions. A triad becomes even more important at lower numbers, and offers a greater security net should disarmament plans backfire or problems emerge with any particular system. Equally, the United States has other moves it can and needs to make in terms of nuclear strategy and disarmament, which in the short run will be more effective than simply cutting a leg of the triad. US action on sub-strategic nuclear forces, reserve nuclear stockpiles, nuclear doctrine, de-alerting, and even unilateral strategic reductions present arguably more pertinent and constructive avenues to be explored in the near term.

A triad with lower numbers of delivery vehicles, combined with a reduced nuclear stockpile, the possible elimination of sub-strategic forces, those awaiting dismantlement or held in reserve, and alterations to declaratory policy and posture, offers a sensible long-term platform for US strategic requirements. Nevertheless, such a policy will contain risks that will need to be mitigated, most notably the possibility of hollowing out and a lack of readiness, and also concerns about the safety, security and management of the stockpile as these changes begin to take place.⁸³ These risks will need to be elevated and taken seriously as force size and structure is reconfigured, but this should not prevent such a policy from supporting and augmenting the US-drive for a safer global nuclear order.

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