

Darüber hinaus wurden bereits vom ÖSCS-Team (welches für die Sitzungsvorbereitung und die administrativ und organisatorische Umsetzung der ÖSCS verantwortlich zeichnet und sich aus Vertretern BKA, BM.I und BMLVS zusammensetzt) Projektaufträge für die wesentlichsten Umsetzungspunkte des Implementierungsplans erstellt.

Die derzeit behandelten Projektaufträge sollen spätestens Mitte 2014 abgeschlossen sein und beinhalten die folgenden im Rahmen des Umsetzungsprozesses von Seiten der CSS priorisierten Aktionen³³:

1. Erarbeitung von Prozessen und Strukturen zur permanenten Koordination auf der operativen Ebene,
2. ordnungspolitischer Rahmen,
3. Cyber Sicherheitsplattform (CSP) und Konzept „Kritische Infrastrukturen“,
4. Cyber-Kommunikationsstrategie.

33 Ibid.

7. Schlussbemerkung

Abschließend lässt sich feststellen, dass Österreich in einem sehr gediegenen Prozess eine Cyberstrategie entwickelt hat, die auf die österreichischen Verhältnisse optimal zugeschnitten ist und insgesamt die gesamtstaatliche Zusammenarbeit erheblich verbessert hat. Durch die „Entgrenzung“ im Cyberraum ist die Unterscheidung zwischen Innen- und Außenangelegenheiten sowie zwischen kriminellen und (feindlichen) staatlichen Aktivitäten wesentlich schwieriger geworden. Dementsprechend sind auch die herkömmlichen Zuständigkeiten im Cyberraum nicht mehr zu halten und eine intensive Zusammenarbeit das Gebot der Stunde. Die Österreichische Cyber Sicherheitsstrategie setzt die Tradition der umfassenden Sicherheitsvorsorge weiter fort und gilt auch schon als Vorbild für ähnlich organisierte Staaten. Insgesamt kann ein sicheres Cyberumfeld auch zu einem Wettbewerbsvorteil für den österreichischen Wirtschaftsstandort beitragen.

BEITRÄGE AUS SICHERHEITSPOLITIK UND FRIEDENSFORSCHUNG

Sixty Minutes to Strike: Assessing the Risks, Benefits, and Arms Control Implications of Conventional Prompt Global Strike

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Abstract: The United States faces the dilemma of reassuring the Russian Federation that America's "unrivaled superiority in conventional weapons" represents a stable future in which Russia would be willing to eliminate its own nuclear weapons. Russia has expressed concern about U.S. intentions to deploy new Conventional Prompt Global Strike (CPGS) delivery systems coupled with its growing arsenal of missile defenses and other advanced conventional systems. This article examines the risks, benefits, and arms control implications of CPGS systems, which are intended to strike targets any place on earth in roughly 60 minutes. Although I argue that the dangers and risks of deploying CPGS weapons greatly exceed the presumed benefits, and that more suitable, if less prompt, means exist of attacking such time-urgent targets, if the United States still proceeds to deploy these weapons, it will need to employ various arms control measures to allay legitimate Russian concerns about the threatening character of U.S. precision strike weapons.

Keywords: Conventional prompt global strike, nuclear reductions, U.S.-Russian arms control, treaty counting rules
Konventioneller globaler Sofortschlag, Nuklearwaffenabbau, US-russische Rüstungskontrolle, Vertragszählregeln

1. Introduction

Less than three months after he took office in 2009, President Barack Obama, speaking in historic Prague, asserted the right

of all people to live free from the threat of nuclear devastation. To that end, Obama declared that the United States had a moral responsibility to move toward that goal, by leading a global quest "to seek the peace and security of a world without nuclear weapons."² The following year, the Obama administration

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2 "Obama Prague Speech on Nuclear Weapons: FULL TEXT," *Huffington Post*, first posted, May 6, 2009, updated April 25, 2011, http://www.huffingtonpost.com/2009/04/05/obama-prague-speech-on-nu_n_183219.html.

released its first Nuclear Posture Review (NPR) in which the idea of “strategic stability” played a featured role. Appearing no less than 29 times, the phrase acknowledged that the United States could afford to diminish its longstanding dependence on nuclear weapons to satisfy its future security requirements due to “the growth of unrivalled U.S. conventional capabilities, major improvements in missile defenses, and the easing of Cold War rivalries.”³ Indeed, the logic for such an assertion bears importantly on reassuring and convincing U.S. allies and partners that they should forswear acquiring nuclear weapons of their own to meet their perceived security demands. Yet, truly deep reductions in nuclear arsenals also depend on the participation of Russia, and eventually China, both of whom must be reassured that a world characterized by “unrivaled U.S. conventional capabilities” is sufficiently stable to warrant cooperation along the path to deeper reductions. Thus far, Moscow and Beijing have evinced outright concern about the direction of both U.S. missile defenses and precision strike systems.⁴

This article addresses concerns about America’s growing advantages in long-range precision strike and ways to allay such concerns so as to achieve deeper cuts in global nuclear arsenals. I primarily focus on the risks, benefits, and arms control implications of conventional prompt global strike (CPGS) systems, which are intended to strike targets any place on earth in roughly 60 minutes. I conclude that the dangers and risks of employing even a “niche” CPGS capability greatly exceed the benefits, and that more suitable – albeit less prompt – means of attacking such time-urgent targets, such as land-attack cruise missiles, already exist in the U.S. military arsenal, and that Russia’s concerns about the threatening character of these alternatives to CGPS are greatly exaggerated. Barring a U.S. decision to abjure from deploying CPGS weapons, I conclude that various arms control measures should be employed to allay legitimate Russian concerns about the threatening character of advanced U.S. precision strike systems. Such measures will become increasingly needed should global nuclear arsenals shrink to very low levels.

I first trace the origin of the requirement for such a novel capability. This is followed by a status report on currently funded CPGS programs. I then turn to assessing the strengths and weaknesses of the CPGS concept of operations with particular attention devoted to the demanding intelligence support challenges attending such an operational concept. This risk assessment is framed in the broader context of recent global trends emphasizing a fascination with preemptive and preventative strike doctrines. Finally, the paper offers recommendations designed to regulate the proliferation of CPGS systems.

2. Provenance of CPGS

Prompt global strike is currently cast as a prospective American “niche” capability, consisting of a small number of conventional weapons that could be employed, at the very start or in the midst of a military campaign, against high-value “fleeting” targets that depend on prompt action to achieve success.⁵ But the antecedents of CPGS broadly spring from more fulsome ambitions.

Arguably the most provocative contribution to the notion of conventional global strike came from Paul Nitze, America’s chief architect of Cold War nuclear security policy. By early 1994, Nitze had become convinced that it was time for the United States to reconsider its longstanding reliance on nuclear weapons for deterrence. This conclusion derived from Nitze’s belief that the threat of nuclear retaliation was unlikely to deter regional aggressors; moreover, the United States would be unlikely to use nuclear weapons to punish such aggression.⁶ Nitze’s solution was to convert the strategic deterrent from nuclear to precision-guided conventional weapons. As Nitze put it, “It may well be that conventional strategic weapons will one day perform their primary mission of deterrence immeasurably better than nuclear weapons if only because we can – and will – use them.”⁷

Roughly two years later, another even more dramatic version of CPGS figured into the controversial book, *Shock and Awe: Achieving Rapid Dominance*, authored by Harlan Ullman and James Wade.⁸ The authors argued that achieving the goal of rapid dominance over future enemies would require “a level of Shock and Awe against an adversary on an *immediate or sufficiently timely basis to paralyze its will to carry on.*”⁹ Writing also in *Shock and Awe*, General Chuck Horner, USAF Ret., posited “*deep strike*” capabilities as central to Shock and Awe’s achievement. Because Horner foresaw future military engagements occurring “in a world of surprise attack and withdrawal from foreign bases,” *deep strike requirements will center on delivery systems with ranges up to 10,000km.*¹⁰ Shock and Awe’s authors fully appreciated that any success depended on “supporting intelligence, especially human intelligence – not an American strong point.”¹¹

Other government bodies took up the idea of arming intercontinental missiles with conventional warheads within a year of *Shock and Awe’s* publication. Formed in 1997, the congressionally mandated and bipartisan National Defense Panel, among other things, provided the Secretary of Defense alternative future force structures for the U.S. military through the year 2010. Among the panel’s suggested recommendations was integrating advances in information systems, precision-guided weaponry, and

5 Amy F. Woolf, “Conventional Prompt Global Strike and Long-Range Ballistic Missiles: Background and Issues,” Congressional Research Service Report for Congress, R41464 (April 26, 2013), Summary page.

6 Paul H. Nitze, “Is It Time to Junk Our Nukes?” *Washington Post*, January 16, 1994, p. C1.

7 Nitze, “Is It Time to Junk Our Nukes?”

8 Harlan Ullman and James Wade, *Shock and Awe: Achieving Rapid Dominance* (Washington, D.C.: NDU Press, 1996), http://www.dodccrp.org/files/Ullman_Shock.pdf.

9 *Ibid.*, p. xxv; emphasis added.

10 *Ibid.*, pp. 128 and 131.

11 *Ibid.*, p. 28.

3 *Nuclear Posture Review Report* (Washington, DC: US Department of Defense, April 2010), <http://www.defense.gov/npr/>.

4 See Eugene Miasnikov, “Counterforce Capabilities of Conventional Strategic Arms,” Presentation at ISODARCO XXVI Winter Course, January 6-13, 2013, at www.armscontrol.ru/pubs/en/Miasnikov-PGM-130110.pdf and Hu Yumin, “U.S. Building Global First Strike Capacity Against Russia, China,” *China Daily*, January 11, 2013, <http://rickrozoff.wordpress.com/2013/01/11/u-s-building-global-first-strike-capacity-against-russia-china/>.

*real-time targeting into systems that may provide "a supplement or alternative to the nuclear arsenals of the Cold War."*¹²

America's quest to give meaning to Paul Nitze's idea of conventional strategic weapons finally manifested itself in George W. Bush's first Nuclear Posture Review (NPR), announced in late December 2001. While the 2001 NPR remains classified today, portions of the report were leaked around the time of its announcement.¹³ The document sought to conflate previously nuclear-only attack options into a new concept called "Global Strike." Advanced conventional and tailored nuclear strike options were brought together to deal with various regional contingencies requiring prompt decision-making. The conventional component consisted of air- and ship-launched cruise missiles and regionally based attack aircraft.¹⁴ Still, nuclear options were seen as needed to deal with targets such as deeply buried strategic facilities protecting weapons of mass destruction (WMD). The role of missile defenses, rejuvenated with the Bush presidency, also found its way into the so-called "New Triad." Whereas the first leg of this triad of capabilities featured nuclear and conventional strike systems, the second leg included active and passive defenses, foremost active ballistic missile defenses, which were served substantially by increased defense spending as well as U.S. unilateral withdrawal from the 1972 Anti-Ballistic Missile (ABM) treaty six months after the 2001 NPR's launching.¹⁵

An imperative feature of prompt execution of either conventional or nuclear long-range strike was driven home in Secretary of Defense Rumsfeld's cover letter to the 2001 NPR. Among other things, Rumsfeld asserted, "Exquisite intelligence on the intentions and capabilities of adversaries can permit timely adjustments to the force and improve precision with which it can strike and defend." Roughly nine months after issuing its first NPR, the Bush administration gave concrete meaning to the intended utility of such a prompt conventional option. This came in the form of its first "National Security Strategy of the United States," (later abbreviated as the "Bush doctrine"), which featured the elevation of preemption – or more accurately, prevention – from a potential military option to a formal policy doctrine.¹⁶

3. CPGS in the Bush Years

The "Bush Doctrine" gave impetus to turning Global Strike from a mere concept to, still prospectively, a truly operational reality. Surely, the profound consequences of 9/11 and the concern that the attack raised over WMD and the presumed nexus between so-called "rogue" states and a new brand of apocalyptic terrorism prompted specific guidance to U.S. military commanders to

take what prompt strike capability they had and dedicate it to the nascent Global Strike mission. This included bombers, ICBMs, and ballistic missile submarines, yet most of these systems were devoted to nuclear, not conventional weapons delivery. Shortly before the release of the 2001 NPR, the U.S. Air Force Space Command established a requirement for a prompt global strike capability that could strike anywhere globally and defeat, via conventional means, such difficult targets as hard and deeply buried facilities and strategic relocatable targets, presumably nuclear-armed mobile missiles.¹⁷

If CPGS is defined as the capacity to deliver precise conventional strikes anywhere on the globe in as little time as 60 minutes, then no such system exists in the U.S. military arsenal today. That said, there are requirements for such systems and other capabilities that are less prompt in their reaction times but nevertheless provide long-range conventional strike capability. The need for such a capability – more or less explicitly defined – has been expressed in three U.S. Quadrennial Defense Reviews, or QDRs – 2001, 2006, and 2010.¹⁸ The 2006 QDR was the most explicit. Roughly like the U.S. Space Command's 2001 requirement, the 2006 QDR stipulated that the United States needed a capability to "attack fixed, hard and deeply buried, mobile and relocatable targets with improved accuracy anywhere in the world promptly upon the President's order."¹⁹

The existence of a compelling new strategic concept naturally prompted each military service to offer a CPGS solution. The Pentagon's chief advisory unit, the Defense Science Board (DSB), fixed on ballistic missiles as offering the best solution to achieve a prompt solution. In the DSB's 2004 study of the issue, the panel argued that land-based strategic ballistic missiles possessed "unique, time-critical characteristics."²⁰ Such ballistic missiles, heretofore exclusively nuclear delivery systems, could meet the requirement to attack any target on the globe within one hour's time.

Having worked since 1994 on enabling ballistic missiles to achieve the accuracy and penetration capability needed to destroy underground targets with conventional payloads, the Pentagon turned to the U.S. Navy to modify the Trident missile for the prompt global strike mission after the turn of the century.²¹ In 2006 plans were revealed that the navy intended to deploy two missiles on each of its 12 Trident submarines (for a total of 24), each of which would be equipped to carry four conventional warheads. The 22 remaining missiles on each submarine would still carry nuclear warheads. At the time, the Pentagon seemed to have given little or no thought to how such plans would be viewed by Russia or China, or indeed even the U.S. Congress.²² In each case, the reaction was broadly negative. Most importantly, it was virtually impossible

12 U.S. Department of Defense, *Transforming Defense: National Security in the 21st Century*, Report of the National Defense Panel, December 1997, <http://www.fas.org/man/docs/ndp/front.htm>.

13 "Nuclear Posture Review [Excerpts], <http://www.stanford.edu/class/polisci211z/2.6/NPR2001leaked.pdf>.

14 See *Ibid.*, p. 7.

15 The third leg of the "New Triad" was a revitalized defense infrastructure to meet new threats.

16 On the unintended consequences of the Bush doctrine, see Dennis M. Gormley, *Missile Contagion: Cruise Missile Proliferation and the Threat to International Security* (Annapolis: Naval Institute Press, 2008), pp. 125-133 and 136-145.

17 See Dennis M. Gormley, "Conventional Force Integration in Global Strike," in James J. Wirtz and Jeffrey Larsen, eds., *Nuclear Transformation: The New U.S. Nuclear Doctrine* (New York: Palgrave, 2005), pp. 53-68.

18 Woolf, *op. cit.*, p. 3.

19 Cited in *Ibid.*

20 Cited in *Ibid.*, p. 10.

21 Nancy F. Swinford and Dean A. Kudlick, "A Hard and Deeply Buried Target Defeat Concept," Lockheed Martin Missiles & Space, Sunnyvale, CA 94088, Defense Technical Information Center (DTIC) document no. 19961213 060, no date, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA318768>.

22 I drew this conclusion at the time based on a discussion with a U.S. Strategic Command official in 2006.

for Russia, even with its functional missile warning system, to distinguish whether a U.S. missile headed toward Russian territory carried a nuclear warhead intended to strike a Russian target or a conventional warhead headed elsewhere. When one plots trajectories for such missiles launched from either the east or west coast of the United States and headed toward North Korea, the Middle East, or the Indian subcontinent, they all pass over Russia, some including directly over Moscow.²³ However risky such an attack might appear to American planners, Russian analysts embraced its threat possibilities in the aftermath of the Conventional Trident Modification (CTM) announcement.²⁴

In the end, the controversy surrounding CTM's ambiguity sunk – at least for the time being – prospects for the Pentagon to pursue the quickest path toward a true CPGS capability. The Congress denied the navy's request for CTM funding in both FY2007 and 2008, turning instead to a combined, defense-wide CPGS program designed to pursue research and development that could contribute to the CPGS mission.²⁵ Surely, it did not help CTM's cause to have the National Research Council, the working arm of the U.S. National Academies, endorse the CTM's niche role of attacking a fleeting target of opportunity (terrorist or rogue state) with one to four conventional weapons while also concluding that "the ambiguity between nuclear and conventional payloads can never be totally resolved..."²⁶ According to one congressional staff member of the Senate Armed Services Committee, the demise of CTM suggested that there was no longer any prospect for either Trident submarines or Minuteman land-based ballistic missiles undergoing conversion in support of the CPGS mission.²⁷ A more temporary interpretation came from a U.S. Strategic Command officer who asserted after CTM's loss of funding that "Global Strike has been throttled back."²⁸

The NRC study did more than simply contribute to CTM's demise by underscoring its warning ambiguity problem; it also drew attention to CPGS's shared provenance with the more fulsome ambitions of Paul Nitze's turning largely to conventional strategic weapons and Ullman and Wade's arguments for a Shock and Awe strategy. The NRC report noted that the Department of Defense presented panel members with scenarios in which CPGS weapons could provide leading edge preemptive strikes against targets far inland so as to "cripple an adversary's essential warfighting capabilities before they could be used with potential decisive effect against U.S. or allied forces."²⁹ Naturally, such a larger role for CPGS implies inventory numbers far exceeding those dictated by the panel's endorsement of a "niche" role dealing with fleeting targets. Nonetheless, the NRC panel saw a potential role for CPGS in

the more fulsome role of supporting major combat operations, but only in a qualified sense. They correctly noted that such major military operations are likely to be accompanied by strategic warning and a buildup of regional forces. Moreover, the use of CPGS in the context of a major regional war could be misinterpreted as a nuclear rather than conventional attack, thereby fostering unwanted and strong escalatory incentives, especially if the CPGS system was delivered by a ballistic missile.³⁰

4. Obama and CPGS

Just before Barack Obama assumed the presidency, the Congress brought a degree of order to the service programs falling under the CPGS rubric. Called Defense-Wide Conventional Prompt Global Strike, the program invests in research and development relating to all of the underlying technologies needed to support the CPGS mission from boosters and payload delivery vehicles to such enabling areas as mission planning.³¹

Three key service programs now are center stage under the consolidated CPGS program. The U.S. Air Force began the Conventional Strike Missile program in 2008, and, after the demise of the U.S. Navy's attempt to offer the Trident missile as the quickest and most effective path to a CPGS option, the air force CSM now occupies the lead position instead. Based on land – probably either on the U.S. west or east coast – the CSM would employ boost-glide technologies and follow a substantially lower depressed trajectory than existing nuclear-armed ballistic missiles. After separation, the payload would travel hypersonically to the target while having the capacity to execute substantial cross-range maneuver. Two benefits flow from such maneuverability: high accuracy and avoiding flight over hostile countries. The CSM launch vehicle would be the Orbital Sciences' Minotaur IV space launch vehicle with a proven track record of over 50 flights. The U.S. Air Force had hoped to reach an operational capability by 2012 (with one ready missile and two spares), but it now appears that the CSM might not be ready until well after the middle of this decade. This is due to the substantial testing that remains for reentry bodies that must undergo at least five demonstration flights. To date, the CSM has not undergone any successful hypersonic flight tests.³²

The second CPGS contender is the Hypersonic Test Vehicle no. 2 (HTV-2), funded by the Defense Advanced Research Projects Agency (DARPA), which the Pentagon defense organization charged with pushing the state of the art in new military technologies. The goal of the HTV-2 is development of a vehicle that can ride along the earth's upper atmosphere at hypersonic speeds of more than 13,000 miles per hour. America's largest defense contractor, Lockheed Martin, is developing the vehicle, which will also serve as the payload delivery vehicle for the air force CSM program. However, after two flight test failures (2010, 2011), and the brief achievement of a speed of Mach 20, it is clear that the vehicle thus far cannot maintain aerodynamic

23 I thank Dr. Greg DeSantis for these calculations.

24 Besides Miasnikov, *op. cit.*, see Vladimir Dvorkin, "Reducing Russia's Reliance on Nuclear Weapons in Security Policies," in Christina Hansell and William C. Potter, eds., "Engaging China and Russia on Nuclear Disarmament," *Occasional Paper*, No. 15, James Martin Centers for Nonproliferation Studies, April 2009.

25 Woolf, *op. cit.*, p. 16.

26 "Conventional Prompt Global Strike Capability," Letter Report of the National Research Council's Committee on Conventional Prompt Global Strike Capability," dated May 11, 2007, <http://www.nap.edu/catalog/11951.html>.

27 My thanks to Miles Pomper of the Monterey Institute's James Martin Center for Nonproliferation Studies for this information.

28 Author interview, March 2009.

29 "Conventional Prompt Global Strike Capability," *op. cit.*, p. 5.

30 *Ibid.*

31 Woolf, *op. cit.*, p. 16.

32 *Ibid.*, pp. 1 and 16-17.

control for a full flight test, no less the entire objective mission distance. Given a tight defense budget that is likely to prevail for some time, the Pentagon decided to allocate a mere \$2m in the FY2014 budget, which will not support further HTV-2 testing while the Pentagon seeks a cheaper, less risky CPGS alternative.³³

The third option under the consolidated Pentagon CPGS program is the U.S. Army's Advanced Hypersonic Weapon (AHW), which from the outset was seen as a way to reduce the risk associated with DARPA's HTV-2 endeavor. Indeed, the AHW's one flight test, in November 2011, was successful, allowing the hypersonic glide vehicle to achieve a range of 2,400 miles. However, the AHW's shorter range would mean that it has to be forward deployed to meet the needs of the CPGS mission. Still, unlike its more challenging DARPA cousin, the army's AHW received Pentagon support for modest additional funding in FY2014 to permit one more test.³⁴

A combination of risk, sequestration's effects, and growing concern over China's military ambitions make two of the three preceding DOD-Wide CPGS options problematic near-term solutions for the CPGS mission. The U.S. Air Force and DARPA programs simply have not demonstrated sufficient technical progress, while the financial basis for pursuing them has fallen prey to severe cuts in the Pentagon budget. The challenge of Chinese military modernization, on the other hand, has led to the Obama administration's modest "Pivot to East Asia" strategy announced in January 2012, amounting thus far to a rebalancing of only 180 Marines who arrived in Australia in April 2012, with a larger contingent of around 2,000 to follow, possibly, by 2017.³⁵ China's military challenge and the necessity to rebalance forces have re-focused attention on a sea-based CPGS option, but one without the launch ambiguity problem that led to the cancellation of the Conventional Trident Missile option in 2008. The FY2014 budget request for the CPGS program remains steadfast in its interest in sea-based options including a flight test of a navy variant of a CPGS system toward the end of 2016.³⁶ Although such a solution would lack the range and truly prompt response time of U.S.-based ICBMs, it might prove more palatable a solution from the standpoint of allaying at least Russian concerns, while still offering some modest support to the Obama pivot to East Asia strategy.

As noted earlier, the administration of Barack Obama has embraced long-range conventional strike as enabling, along with missile defenses, America's willingness to reduce its historic reliance on nuclear weapons. The 2010 NPR notes specially the important contributions that conventional weapons make to U.S. regional deterrence and reassurance goals. The document also signals to regional allies and friends that such conventional options are sufficiently critical that the United States will preserve options in the New START treaty for using heavy bombers and long-range missile systems in conventional roles.³⁷

Russia initially sought to ban conventional warheads on strategic ballistic missiles, but the United States balked at the prohibition and instead agreed to a statement in the treaty's preamble indicating that both parties are "mindful of the impact of conventionally armed ICBMs [intercontinental ballistic missiles] and SLBMs [Submarine-launched ballistic missiles] on strategic stability."³⁸ In the end, even though the treaty fails to ban conventionally armed ICBMs, it does count those delivery systems based on treaty-limited strategic delivery systems toward New START's ceiling of 1,550 nuclear warheads.³⁹

The White House's interpretation of the New START treaty became evident in a February 20, 2011 report to Congress stipulating that while the treaty did count existing types of strategic delivery vehicles if they were converted to carry conventional warheads, this proviso did not apply equally to new types of delivery vehicles that do not "fly a ballistic trajectory over most of its flight path."⁴⁰ Accordingly, new types of warheads deployed on boost-glide systems, whose rocket-boosted payload delivery vehicles glide at hypersonic speeds in the atmosphere, would not be counted as nuclear warheads. The White House also acknowledged that it had at the time no plans to deploy conventionally armed ICBMs or SLBMs with traditional trajectories, which would be counted as nuclear systems under New START. On the other hand, it was investing in boost-glide systems launched by non-traditional boost vehicles to place a glide vehicle that would obtain hypersonic speeds while traveling in the earth's upper atmosphere before delivering its conventional payload. Although these new boost-glide systems are not subject to the New START counting rules, the administration argues they should allay Russian concerns about misinterpreting the launch of such a delivery system as nuclear because of its unique non-ballistic flight profile. Yet, because such systems cannot be tracked and possess significant maneuverability after the boost phase, they still could present escalatory risks.⁴¹

5. Assessing the Risks of CPGS

In assessing the risks of deploying a small number of CPGS weapons, it is first important to ask the question, do the military advantages accruing to the United States outweigh the risks and potential unintended consequences of such a decision? Especially if the latter proves to be the case in any assessment, then the question is to what extent are there alternative, if less prompt, solutions available to address plausible current and future threats?

It seems evident that the requirement for such a niche CPGS capability falls into the category of low probability but

33 *Ibid.*, pp. 18-19.

34 *Ibid.*, pp. 19-20.

35 J. Dana Stuster, "The Obama administration just can't seem to pivot to Asia," Blog post on Foreign Policy, http://blog.foreignpolicy.com/posts/2013/06/07/the_obama_administration_just_cant_seem_to_get_its_asia_pivot_right.

36 Woolf, *Ibid.*, p. 12.

37 *Nuclear Posture Review Report* (Washington, D.C.: U.S. Department of Defense: April 2010), p. 25, <http://www.defense.gov/npr/>.

38 "Treaty Between the United States of America and the Russian Federation for the Further Reduction and Limitation of Strategic Offensive Arms," April 8, 2010, p. 2, <http://www.state.gov/documents/organization/140035.pdf>.

39 *Ibid.*, p. 4.

40 Tom Z. Collina, "U.S. Alters Non-Nuclear Prompt-Strike Plan," *Arms Control Today*, April 11, 2011, at http://www.armscontrol.org/act/2011_04/PromptStrike.

41 James M. Acton, *Silver Bullet: Asking the Right Questions About Conventional Prompt Global Strike* (Washington, D.C.: Carnegie Endowment for International Peace, 2013).

potentially high consequence. Analysts have used the case of al Qaeda's surprise attack on 9/11 and the consequent need for prompt response options. Surely, the U.S. military faced decided disadvantages vis-à-vis promptly striking fleeting al-Qaeda targets. Yet, the chances even today of having in hand all of the required intelligence support to achieve success with one or several CPGS missiles seems highly doubtful. Indeed, subsequent analyses of what we knew about Osama bin Laden's location in Afghanistan does point strongly to Tora Bora, but not with enough accuracy to think that a few missiles would have succeeded in such an endeavor. On the other hand, a higher probability of preventing Bin Laden and his followers' escape into Pakistan certainly existed but was reportedly rejected by Secretary of Defense Donald Rumsfeld and General Tommy Franks, the regional commander-in-chief. They both perceived the risks as too high of deviating from the light footprint, small-force plan they executed against Afghanistan.⁴² Obviously, there are other examples of where promptly striking a fleeting, but temporarily fixed, target might seem imperative.⁴³

However compelling the argument for a prompt decision, the unintended but possible consequences of deploying CPGS weapons are formidable. The first is fear that arming ballistic missiles with conventional warheads might adversely affect strategic stability by virtue of the preemptive, or preventive character of the weapon. Surely, any state perceiving that it is in the gun sights of a CPGS weapon might figure that it too needed to adjust its posture to achieve their own prompt capability. After the Bush administration elevated preemption/prevention to a national doctrine in 2002, a host of states followed suit, including both threatened ones and some close allies and friends of the United States, including Japan.⁴⁴ Today, Japan seems bent on putting aside longstanding constitutional constraints on possessing offensive military forces, most notably an independent long-range strike capability – quite possibly ballistic missiles – to achieve preemptive results against such targets as North Korean missiles on high alert or Chinese designs to invade the disputed Senkaku islands.⁴⁵ It is difficult not to conclude that U.S. fascination with CPGS deployments has not offered Japan welcome cover to turn to such an option itself.

Strategic stability is also threatened by the inevitable ambiguity that is likely to prevail over whether or not an incoming CPGS missile truly is armed with a conventional and not a nuclear weapon. As noted at the outset, Russian analysts assert that CPGS augurs a future U.S. capacity to conduct effective counterforce strikes on their strategic nuclear forces, thereby threatening Russia's retaliatory capability, even without resort to nuclear weapons. If this perception prevails, then the potential for Russia mistakenly perceiving either one or two CPGS weapons as

a leading edge attack – conventional or nuclear – against their nuclear arsenal is not farfetched. Attempts to mitigate these worries through various confidence building and transparency measures might allay some underlying concern pertaining to replacing a CPGS missile's conventional payload for a nuclear one. Still, such measures cannot confidently eliminate a state's potential for erratic behavior under the extraordinarily compressed circumstances of a CPGS scenario. Context, as always, is critical, but prompt decision-making comes with its own inherent dangers.

A second important dimension of risk lies in a firm appreciation of the important differences between nuclear and conventional weapons. The performance of a modest number of U.S. precision-guided munitions in the first Gulf War of 1991 augured the expectation that precision weapons might one day replace nuclear weapons for some missions. In 2008, one U.S. Strategic Command officer stated that conventional weapons were capable of destroying 10 to 30 percent of extant nuclear targets.⁴⁶ That said, proponents of nuclear weapons remain steadfast in their belief that the sheer scale of nuclear effects, compared with conventional weapons, contributes critically to their deterrent value. Whether one agrees or not with this distinction in regard to its outcome for deterrence, there is little debate about difference in scale and effects between nuclear and conventional weapons.

Thus, what separates nuclear from conventional weapons is the reality that their huge difference in scale greatly compensates for expected errors in weapon accuracy or target uncertainty. Compared with nuclear weapons, precision conventional weapons rely critically on an array of supporting needs. This includes, first and foremost, highly accurate and swiftly gathered intelligence collection, analysis, and dissemination, rigorous mission planning, precise knowledge of the target's aim points (i.e., its vulnerabilities), post-attack damage assessment capabilities to determine whether or not damage objectives have been achieved and whether or not additional strikes are necessary, and finally, an agile command and control system to manage these complex, interconnected tasks. Consequently, while nuclear weapons are forgiving due to their comparatively large-scale effects, conventional weapons, no matter how precise, cannot afford a breakdown in the performance of their supporting cast of functions if they are to succeed as planned. Therefore, while the sum of the CPGS concept's desired performance is certainly greater than the parts, each part critically enables the concept's objective synergy.

The disparate parts of the overall CPGS concept have yet to be articulated with clarity or introduced to all of the conceivable stakeholders within the U.S. military. This was the conclusion of a thorough investigation of the CPGS program by the U.S. Government Accountability Office (GAO) in 2008.⁴⁷ The study

42 "Tora Bora Revisited: How We Failed to Get Bin Laden and Why It Matters Today," A Report to Members of the Committee on Foreign Relations, United States Senate, 111th Congress, First Session, November 30, 2009, <http://www.gpo.gov/fdsys/pkg/CPRT-111SPRT53709/html/CPRT-111SPRT53709.htm>.

43 The Pentagon has examined five representative cases. See Woolf, op. cit., p. 5.

44 See Gormley, *Missile Contagion*, pp. 125-133 and 136-145.

45 On Japanese long-range strike ambitions, see "U.S. worried by aggressive military posture," *Japan Times*, August 7, 2013, <http://www.japantimes.co.jp/news/2013/08/07/national/u-s-fretting-over-japans-desire-to-militarily-strike-enemy-bases/#.UgBcuBQNJkA> and J. Michael Cole, "Japan Mulls a Preemptive Strike Capability," *The Diplomat*, June 4, 2013, <http://thediplomat.com/flashpoints-blog/2013/06/04/japan-mulls-a-preemptive-strike-capability/>.

46 Elaine M. Grossman, "A Former Nuclear Commander Not Wild About Nukes," *Global Security Newswire*, May 28, 2008, <http://www.nti.org/gsn/article/a-former-nuclear-commander-not-wild-about-nukes/>.

47 U.S. Government Accountability Office, "Military Transformation: DOD Needs to Strengthen Implementation of Its Global Strike Concept and Provide a Comprehensive Investment Approach for Acquiring Needed Capabilities," GAO-08-325, April 2008. The Department of Defense concurred with each of the GAO's findings. In my experience as an advisor to several DARPA office directors during the 1990s, I found that technology considerations rather than conceptual ones nearly always drove decisionmaking.

concentrated most on the disparate enabling technologies needed to make CPGS conceivable. They included “intelligence collection and dissemination, surveillance and reconnaissance, command and control, communications, and battlefield damage assessment.” The GAO found that the Pentagon had not coordinated its efforts to improve these critical enabling components of CPGS.

A third dimension to CPGS risk is its essential dependence on intelligence support. This facet of risk deserves to be seen as the Achilles heel of the CPGS concept. Secretary of Defense Donald Rumsfeld, as noted, called for “exquisite” intelligence to support precise attack a little less than 15 months before the invasion of Iraq occurred to destroy that country’s miss-assessed stockpiles of WMDs.⁴⁸ General James Cartwright, formerly Vice Chairman of the Joint Chiefs of Staff, drew attention to the stiff demands of intelligence when he observed that success “encompasses [...] the ability to plan rapidly, to apply the precision to the intelligence and gather that intelligence in a very rapid manner.”⁴⁹ Yet, the fact that such decision-making and its accompanying planning may have to occur within an hour’s timeframe places unprecedented demands on the intelligence community. Commenting on the quality of intelligence needed to support CPGS use in 2007, CIA director General Michael Hayden observed, “if you are going to strike suddenly [...] it has to be based on very powerful, very convincing intelligence.”⁵⁰ Regarding General Hayden’s remarks, Amy Woolf added, “most analysts agree that the United States does not yet have the capability to meet the intelligence demands of the PGS mission.”⁵¹

One illustration underscores the dubious nature of ever meeting CPGS concept’s enormously stiff intelligence demands – that of providing the president with a counterforce option against a rogue state’s decision to launch a nuclear missile. More often than not the implied or stated rogue state is North Korea, arguably the most opaque of all intelligence challenges. Both the South Korean and U.S. intelligence communities failed altogether to “promptly” detect the death, in 2011, of Kim Jong Il. Only several days after his death was announced on North Korean television did American decision-makers become aware of this critically important transition. Nor did the U.S. Intelligence Community promptly detect evidence that North Korea had undertaken the construction of a huge uranium enrichment facility until roughly 18 months after it began – and then only because U.S. physicist Siegfried Hecker of Stanford University was invited by North Korea to inspect the plant.⁵² In principle, a missile launch might be more subject to detection than these examples, but knowing such details as, for example, whether or not the missile is armed with a nuclear warhead and precisely what are the intentions of North Korea’s leadership are highly likely to remain opaque. Thus, taking a decision to

launch a CPGS weapon under such circumstances is likely to be fraught with ambiguity and highly prone to unwanted mistakes.

Adding to the likelihood of intelligence error is the strong tendency within the inner councils of government decision-making to ignore information that is inconsistent with the desired consensus for a particular course of action. As Janne Nolan writes in *Tyranny of Consensus*, a new book that examines several cases of strategic surprise, “The premises guiding American strategic planning all too frequently prove to be at odds with the actual nature of the challenges involved – the so-called facts on the ground.”⁵³ The combination of incredibly constrained circumstances attending the decision to execute a GPGS strike and America’s predilection to ignore uncomfortable information is more likely to produce potentially dangerous unintended consequences than a silver-bullet outcome.⁵⁴

The last two administrations have endorsed the requirement for CPGS, though with differences in their articulation of just why such a capability is needed. The Bush administration seemed inclined toward a global strategic perspective, by joining the notion of strategic conventional capabilities with nuclear weapons to represent one of the three legs of the new 2002 Triad. On the other hand, the Obama administration’s support of the goal of nuclear abolition has fostered a more regional approach, yet one that has not caused the Obama White House to discard the idea of booster rockets and hypersonic glide vehicles capable of supporting global strikes in one hour’s time. Pressed as it is to justify diminishing the importance of nuclear weapons, the Obama administration has correspondingly elevated the importance of the increasing U.S. dependence on its current and foreseeable advantages in conventional precision strike, prompt or otherwise. Still, the question remains: are the benefits associated with procuring even a niche CPGS capability worth the risks that might ensue from employing or even possessing such a capability?

6. Assessing the Benefits of CPGS

Both the Bush and Obama administrations have fixed on two chief benefits accruing to possessing the capacity to strike targets any place on earth within 60 minutes. The first is an admittedly rare low-probability but high consequence situation wherein a fleeting terrorist target with a presumed nuclear weapon is detected in a neutral country. Alternatively, a rogue state such as North Korea – or perhaps in the future, Iran – places what appears to be a nuclear warhead on a missile capable of striking U.S. or allied territory. The second benefit deriving from possessing a CPGS capability is that it reduces the possibility that the United States might have to employ nuclear weapons to defend its interests.⁵⁵

48 On enduring intelligence weaknesses, see Dennis M. Gormley, “The Limits of Intelligence: Iraq’s Lessons,” *Survival*, Vol. 46, No. 3 (Autumn 2004), pp. 7-28.

49 Cited in Woolf, *op. cit.*, p. 4.

50 *Ibid.*

51 *Ibid.*

52 Mark Landler and Choe Sang-Hun, “In Kim’s Undetected Death, Sign of Nation’s Opacity,” *New York Times*, December 19, 2011, <http://www.nytimes.com/2011/12/20/world/asia/in-detecting-kim-jong-il-death-a-global-intelligence-failure.html?pagewanted=all>.

53 Janne Nolan, *Tyranny of Consensus: Discourse and Dissent in American National Security Policy* (New York: The Century Foundation Press, 2013), p. 1.

54 The Clinton administration’s clumsy handling of a prompt response to al Qaeda’s attacks in Africa of two American embassies in August 1998 comes to mind. Arguably, the controversy over the 1998 attack – occurring during the Monica Lewinsky scandal – damaged the public’s appreciation of the magnitude of the al Qaeda threat.

55 Woolf, *op. cit.*, p. 39.

The first benefit seems at once so remote and problematic in execution – and certainly a scenario for which alternative if less prompt means of response are widely available – as to compare with the canonical cold war “bolt out of the blue” scenario that proved to be apocryphal, even in the context of the Soviet Union’s possession of 30,000 nuclear weapons. But far more worrisome than such low-probability threats occurring is the higher likelihood of mistakes emerging due to the sheer difficulty of possessing “very powerful, very convincing” intelligence but nonetheless taking preemptive action anyway. As discussed earlier, preemptive strike doctrines coupled with increasingly long-range means of attack have spread widely in Northeast Asia, South Asia, and the Middle East to allies, friends, and potential enemies alike. Adding yet another hair-trigger capability, at the same time that the United States is strongly emphasizing the importance of “strategic stability” as a critical component in reducing global nuclear stockpiles, seems patently inconsistent with that objective and potentially dangerous.

Strategic stability may also be adversely affected due the unintended consequences of possessing a first-strike weapon, albeit a conventional one, that in principal threatens a rogue state’s nuclear capability. In 2002, President George W. Bush branded Iraq, North Korea, and Iran as comprising an “axis of evil,” and then ordered a preemptive invasion of Iraq in 2003. There is little doubt that such a decision exacerbated North Korea and Iran’s security dilemma and accelerated their quests to achieve their nuclear objectives. Facing a “bolt-out-of-the-blue” CPGS is likely to drive such threatened states to eventually place their own limited nuclear capability on hair-trigger alert.⁵⁶ Fostering such “use it or lose it” incentives is surely not what even promoters of CPGS originally had in mind, but it is nonetheless likely to accompany any decision to deploy even a niche CPGS capability.

The second benefit assumed to apply to CPGS is avoiding the necessity to call upon using nuclear weapons instead. The likelihood that any of the scenarios that might justify executing a precision conventional strike any place on earth in 60 minutes would, in the absence of a CPGS capability, alternatively merit first use of nuclear weapons by an American president is surely inconsistent with recent trends. Indeed, since the Obama administration took office in January 2009, there has been a decided turn toward looking at reducing the role of nuclear weapons to one of last resort – useful only as an ultimate reserve option to threaten retaliation in response to a nuclear attack on the United States or its allies. But even putting this trend aside, it is important to recall that even Paul Nitze, in his 1994 article, argued that while conventional smart weapons would suffice for deterrence purposes, nuclear weapons were unlikely to deter regional aggressors and that U.S. presidents would be unwilling to use them to punish aggression.⁵⁷ Other senior decision makers would seem to have agreed with Nitze. Secretary of Defense Robert McNamara and

Secretary of State Dean Rusk both came to view nuclear weapons as essentially “unthinkable” for political and moral as well as military reasons.⁵⁸ After the 1991 Gulf War, Colin Powell dismissed the utility of nuclear use, while his commander-in-chief, President George H.W. Bush, acknowledged in his memoir, co-written with his national security advisor Brent Scowcroft, that he had ruled out a nuclear response in the 1991 Gulf War.⁵⁹ One might plausibly argue that instead of reducing the circumstances under which the United States might have to resort to nuclear use, possessing CPGS weapons could actually increase the circumstances where the United States might have to resort to nuclear use. The words of the National Research Council on the challenges of ever removing the ambiguity that Russia and perhaps eventually China will inevitably face with a CPGS launch should remind us that nuclear dangers cannot be confidently eliminated when such a weapon is promptly employed.

7. Alternatives to CPGS

If the risks outweigh the benefits of deploying CPGS systems, as argued here, are there conventional alternatives that might in fact compensate for refraining from deploying CPGS systems? There are a variety of conventional weapon systems that would take longer to reach the intended target but would compensate in a variety of ways. As Barry Watts has argued, most targets, especially fleeting ones, would be more readily detected were the weapon system capable of loitering once it reaches the target area.⁶⁰ And during the time differential between a CPGS and its slower alternative, the latter system could be updated with the latest intelligence on the intended target’s location. Although the American Tomahawk cruise missile has been around since the 1970s, the current Tomahawk, called Tactical Tomahawk, Block IV, can be remotely controlled after launch to redirect the missile to an entirely new target. At launch, the latest version of the missile, which costs roughly half of its predecessor, can be programmed to attack 15 different targets as well as redirected to a newly detected one. Equipped with a video camera, the Tactical Tomahawk can loiter for hours over the target area, awaiting the emergence of its target. Without even considering what U.S. Air Force systems might contribute, Table I below, indicates that there are ample stores of Tomahawk cruise missiles available to support U.S. security needs. One of four recently converted Trident submarines, now called SSGNs, or “Tactical Tridents,” can each store up to 154 Tactical Tomahawks, 66-102 special forces troops, mini-subs for covert Seal units, and small UAVs for supporting reconnaissance needs. Perhaps most important of all, and unlike previous Tomahawk missiles, the new Tactical Tomahawk has greatly reduced the

56 A hair-trigger capability would require such states to possess a solid-fuel delivery system, which over the next decade seems unlikely in the case of North Korea, and perhaps achievable on Iran’s part, at least one capable of targeting some NATO states. See *Iran’s Ballistic Missile Capabilities: A Net Assessment* (London: IISS, 2010).

57 Nitze, “Is It Time to Junk Our Nukes?”

58 Nina Tannenwald, “Stigmatizing the Bomb,” *International Security*, Vol. 29, No. 4 (Spring 2005), p. 30.

59 See Colin Powell with Joseph E. Perisco, *My American Journey: An Autobiography* (New York: Random House, 1995), pp. 323-324, 485-486, and 540-541 and George H.W. Bush and Brent Scowcroft, *A World Transformed* (New York: Knopf, 1998), p. 463.

60 Barry D. Watts, “Long-Range Strike: Imperatives, Urgency, and Options (Washington, D.C.: CSBA, 2005), p. 59.

amount of time it takes to plan a mission, which reportedly now requires just 60 minutes.⁶¹

If for some reason an SSGN were not patrolling within reach of a fleeting target of supreme interest to warrant a prompt conventional strike, the U.S. Air Force possesses ample stockpiles of AGM-86 cruise missiles, and has announced plans for a new cruise missile to replace it, possibly with all of the features that make the Tactical Tomahawk suitable for loitering and target reprogramming. In sum, the alternative conventional means of attack, when compared to both the capabilities and dangers associated with CPGS weapons, suggest that the United States can safely forgo deployment of CPGS weapons.

Table 1. Potential Tomahawk Cruise Missiles for Contingency Use

Cruise Missile Carriers	Ships/Subs	Total Missiles
Providence-class submarine	24	480
Seawolf-class submarine	3	60
Virginia-class submarine	22	440
Ohio-class SLCM subs-SSGN	4	616
CG-52-73 Ticonderoga	22	1,342
DDG-51 Arleigh Burke	72	3,240
DDG-1000 Zumwalt	3	120
Total	150	6,276

Note: For vessels with the Mk. 41 Vertical Launcher, half the cells are for cruise missiles. This chart is a modified version of one made by Dr. Eugene Miasnikov, in his "The Air-Space Threat to Russia," Alexei Arbatov and Vladimir Dvorkin, eds. (Moscow: Carnegie Moscow Center, 2013), p. 131.

8. A Role for Arms Control

A critically important motivating factor in examining CPGS weapons is to allay the concerns of Russia that American conventional superiority will not threaten their nuclear arsenals as future reductions take place along the path to either very low numbers (e.g., a few hundred) or complete abolition of nuclear weapons. CPGS delivery systems equipped with appropriately designed penetrators and possessing an accuracy of 5m, could, in principle, threaten Russian silo-based nuclear missiles. Indeed, Russian analyses argue that the combination of uncontrolled American missile defenses and conventional strategic arms (notably, CPGS and Tomahawk cruise missiles) threaten the survivability of their strategic nuclear arsenal – especially as the arsenal grows smaller with deeper nuclear cuts.⁶²

Before addressing what type of controls and measures may be required to allay concerns about American conventional strike

systems, it is important to note once again the differences between nuclear and conventional weapons. Briefly put, compared with precision conventional weapons, nuclear weapons are vastly more unforgiving due to the sheer scale of their damage. They also depend far less than conventional weapons do on a host of supporting functions, any one of which, should it fail, would lead to systemic malfunction. Where two nuclear ICBMs may suffice to achieve a high probability of disabling a Russian ICBM silo, as many as five to nine CPGS missiles, according to one Russian calculation, would likely be needed to achieve roughly the same outcome.⁶³ This begs the question – admittedly one more political than technical – of how or why any sane U.S. president could be convinced to count on achieving perfect or near-perfect success in any conventional counterforce strike against Russian nuclear targets, on land, at sea, and in the air. The consequences of imperfection are unacceptable and devastating; that is, the near certain probability of Russian nuclear missiles destroying major American cities, with millions of deaths. The Russian media is replete with stories about Russian ICBMs being capable of making evasive maneuvers against missile defenses, as well as carrying countermeasures and decoys to assure penetration of even thick defenses, no less the decidedly limited type of U.S. missile defense system now deployed in Alaska and California.⁶⁴

Russian analysts evoke grave concern about the capacity of American Tomahawk cruise missiles – particularly the Block IV Tactical Tomahawk – to disable their ICBM silos, were they equipped with shaped-charge rather than blast fragmentation warheads, as a portion of some of them are today.⁶⁵ Nevertheless, Russia could respond to such a threat by ringing their silo fields with S-400 anti-aircraft systems to furnish point defense against such a slow-flying system as a Tomahawk missile. That measure alone would surely inject sufficient uncertainty about achieving perfect or near-perfect success for any such large-scale attack. Russian analysts, on the other hand, view this scenario as potentially conceivable, by citing American experts who claim that a missile defense of the U.S. national territory would be virtually impossible.⁶⁶ While such an argument with respect to full territorial defense is quite true, defending against selected point targets – namely, Russian nuclear missile silos – is a much more achievable task. Indeed, both the S-300 and S-400 are

63 Miasnikov, "Counterforce Capabilities of Conventional Strategic Arms," p. 16. For a contrasting analysis of U.S. counterforce conventional strikes on Chinese nuclear forces, which reaches a different conclusion, see Tong Zhao, "Limiting Damage or Damaging Stability: Assessing Conventional Counterforce Strikes against Theater Nuclear Forces," in Stephanie Spies and Mark Jansson, eds., *Project on Nuclear Issues: A Collection of Papers from the 2011 Conference Series* (Washington, D.C.: Center for Strategic and International Studies, 2012), pp. 140-155, http://csis.org/files/publication/120809_Spies_ProjectNuclearIssues_web.pdf.

64 On Russian countermeasures, see "Russia to Get New ICBM Later This Year, RAINOVOSTI, online, July 24, 2013, at http://en.rian.ru/military_news/20130418/180717057.html.

65 An unknown portion of Tactical Tomahawk inventory is slated to be equipped with this so-called "penetrator variant," designed to deal with hardened and underground targets. See <http://www.designation-systems.net/dusrm/m-109.html>. The navy is also working on a multi-effects warhead system that would combine a blast fragmentation capability with a tandem penetrator, meaning all Block 4 Tomahawks could eventually be outfitted with dual-mode warheads. Still, several missiles would likely be needed to obtain the required damage effects against a missile silo, no less to deal with preferential silo defenses.

66 Miasnikov, "The Air-Space Threat to Russia," p. 127.

61 Steven Russell, "Stick with Tomahawk, Forget LRASM," *Breaking Defense*, online, July 12, 2013, <http://breakingdefense.com/2013/07/12/stick-with-the-tomahawk-forget-lrasm/>. The Block 4 Tactical Tomahawk's ability to threaten hardened targets may also be substantially improved. The U.S. Navy has recently supported the development of a multi-effects warhead, which could provide some capacity to penetrate steel or concrete targets. See <http://www.cbs8.com/Global/story.asp?S=13433404&clienttype=printable>.

62 Eugene Miasnikov, "The Air-Space Threat to Russia," in Alexei Arbatov and Vladimir Dvorkin, eds., *Missile Defense: Confrontation and Cooperation* (Moscow: Carnegie Moscow Center, 2013), at http://carnegieendowment.org/files/Missile_Defense_book_eng_fin2013.pdf; and Miasnikov, "Counterforce Capabilities of Conventional Strategic Arms."

reputed to possess a robust counter-cruise missile capability.⁶⁷ In short, missile defense uncertainties cut both ways, affecting American and Russian security planners alike, particularly in the case of non-nuclear planning, where military outcomes are likely to be much longer in duration.

In considering to what extent the United States should accommodate Russian concerns about counterforce capabilities of CPGS and cruise missile systems in future bilateral negotiations, it is important to review what the New START treaty of 2010 concluded with respect to Russian concerns. In negotiations, the United States reportedly told the Russian side that they did not plan to deploy enough CPGS systems to threaten Russia's strategic retaliatory capability.⁶⁸ The preamble to the treaty, however, does state that both countries are "mindful of the impact of conventionally armed ICBMs and SLBMs on strategic stability."⁶⁹ The U.S. side was willing to count ballistic missiles armed with conventional warheads in the treaty's limits as if they were nuclear. Importantly, this was done not because the U.S. side agreed with Russian concerns about the counterforce potential of such conventional weapons; rather, should the United States proceed to arm previously nuclear ballistic missiles with a conventional payload, it would be virtually impossible to know the difference between a nuclear- and conventional-armed missile, rendering treaty compliance problematic.⁷⁰

Although I argue that the United States should abstain from deploying CPGS, should the Pentagon nevertheless proceed to deploy what is very likely to be a niche capability, extant New START counting rules would apply if the choice is a missile that delivers reentry vehicle(s) on a ballistic missile trajectory. On the other hand, were the United States to deploy a boost-glide CPGS weapon – launched along a depressed trajectory using a hypersonic glide vehicle to deliver its weapons to the target – this new type of system would not be subject to New START counting rules. This is because, unlike traditional ballistic missiles, the Russians could readily detect the difference, thus avoiding the threat ambiguity issue. However, in the case of a U.S. wish to deploy such a non-ballistic system, New START provides Russia with the right to question, in a Bilateral Consultation Commission, whether or not such a weapon should be subject to extant counting rules.⁷¹ As long as the United States remains committed only to a niche capability, consenting to counting rules for such a limited deployment of boost-glide systems seems eminently reasonable.⁷² Should a future U.S. Administration wish to deploy larger numbers of CPGS weapons, they should still be subject to counting rules despite the fact that larger numbers affect the size of the U.S. nuclear arsenal, which may prove difficult to accept for those nuclear advocates who today cannot imagine a stable world once nuclear arsenals dip below the level of 1,000 weapons.

Russia's concerns about threats emanating from large-scale Tomahawk deployments are not covered under New START. Here, transparency measures, including U.S.-Russian expert discussions about the feasibility and risks of various threat scenarios of concern to Russia, need to take place to allay Russian concern about the cruise missile threat. As noted before, Russian deployments of S-300/400 missile defenses would render the execution of such a threat dubious and incredibly risky. These concerns might grow over time, however, particularly as technologies emerge that might permit hypersonic cruise missiles – perhaps some with even global strike ranges – to become conceivable. As one possible measure to calm Russian fears, I previously proposed limiting the patrol areas of U.S. submarines – notably SSGNs each carrying 154 cruise missiles – to operate outside the 200 nautical mile exclusive economic zone, which would effectively place enough SSGNs in a location where they are incapable of targeting Russian missile silos.⁷³ Indeed, if hypersonic cruise missiles were to become capable of being launched from submarines, their range would be unlikely to match the current Tomahawk range of 2,500km, making even fewer, if any, Russian silos vulnerable to such a threat.

9. Some Food for Thought

The only thing certain about future nuclear reductions is that they will require an unprecedented level of dialogue and transparency between and among the affected state parties to reach some accommodation that enables deeper cuts in each side's nuclear arsenals. To achieve progress, parties must abstain from exaggeration by appreciating the distinction between what is hypothetically possible and realistically achievable when evaluating threat scenarios of gravest concern. But what seems certain is that making heretofore nuclear-only missiles also capable of delivering conventional warheads is fraught with the prospect of serious unintended consequences. For one example particularly pertinent to this paper, we must keep squarely in mind that to the extent that state parties to the Missile Technology Control Regime begin embracing the use of ballistic missiles for conventional missions – and even worse, for missions with only one hour of decision time before use – we will set a strong precedent for other states to emulate such behavior. I believe that the reason why cruise missiles did not find their way into the 2002 Hague Code of Conduct against the Proliferation of Ballistic Missiles is that they were seen, especially by the Pentagon, as a weapon of great discrimination rather than mass destruction. Very soon, too, ballistic missiles may gain a similar reputation, even though everyone knows that both ballistic and cruise missiles are equally capable of delivering nuclear, biological, and chemical weapons, too. Nevertheless, the consequence may be the unintended spread of ballistic missiles and accompanying strategic instability. Thus, when U.S. decision makers pause to consider the ramifications of any decision about deploying CPGS systems, they should broaden the scope of their perspective to include as well the effects on nonproliferation policy and missile proliferation.

67 For technical details of the S-400, see Carlo Kopp, "Almaz-Antey 40R6/S-400 Triumf Self Propelled Air Defence System/SA-21," Technical Report APA-TR-2009-0503, May 2009, <http://www.ausairpower.net/APA-S-400-Triumf.html>.

68 Woolf, *op. cit.*, p. 37.

69 Cited in *Ibid.*

70 *Ibid.*

71 Under Article 5 of the treaty, the U.S. would still reserve the right to develop and test such a weapon.

72 Recalling the provenance of CPGS, Russia surely must assume that a future U.S. administration might be prone to go down a more robust path than perhaps the current administration is willing to entertain.

73 Dennis M. Gormley, "The Path to Deep Nuclear Reductions: Dealing with American Conventional Superiority," *Proliferation Papers* No. 29 (Paris: Institute français des relations internationales, 2009), pp. 43-44.

Finally, the notion of prompt use of a highly precise intercontinental-range missile within an hour's decision time powerfully conveys the longstanding American preference for dabbling with technological solutions to the exclusion of clear-headed strategic thinking. Here, American decision makers

would best avoid myopic thinking about the utility of CPGS as a silver bullet. It would be preferable to consider more fully the broad and unwelcome dangers and policy ramifications that could very well result from such narrow thinking.

Militäreinsätze zwischen menschlicher Sicherheit und wirtschaftlichen Interessen – Perspektive eines evangelischen Ethikers

Volker Stümke*

Abstract: To provide human security is a justified and important political aim. There are different means to achieve it, including, ultimately, the State's monopoly on the use of force. From the perspective of peace ethic, only reluctant use of force is acceptable. The use of military force must remain the last resort (*ultima ratio*), as politics is both legally and morally bound to peace. Furthermore, securitization *itself* can overburden the effectiveness of both the state and politics. Political ethics, however, demands that not just political considerations, but also economic, scientific and religious ones, and their implicit acceptance, serve as the linchpins of society. No one aspect should dominate, because that would lead to social imbalance.

Military action for economic interests would be an encroachment of politics in economic matters that, although conceivable, is prohibited by law and would be morally compromising. As it has always been wrong to further religious beliefs through military instead of spiritual means, it is similarly both legally and morally wrong to further economic interests with military means instead of trusting economic ones to handle conflict.

Keywords: Ethics, interest, war, military, security, securitization; Ethik, Interesse, Krieg, Militär, Sicherheit, Versichertheitlichung

Wozu darf, sollte, müsste Deutschland Streitkräfte einsetzen? Es gibt seit dem Völkermord in Ruanda eine starke Tendenz zu dem politischen Konsens, dass sich aus menschenrechtlichen Verpflichtungen entsprechende humanitäre Interventionen als *Ultima Ratio* ableiten und rechtfertigen lassen¹. Aber gilt das gleichfalls, wenn wirtschaftliche Interessen eines Landes gefährdet sind? Erinnert sei an die umstrittene Äußerung des damaligen Bundespräsidenten Horst Köhler, „dass im Zweifel, im Notfall auch militärischer Einsatz notwendig ist, um unsere [wirtschaftlichen] Interessen zu wahren“². Hatte Köhler, zumal er explizit von einem Notfall gesprochen hat, recht? – Diese

Fragen sind nicht nur, aber auch für Soldaten relevant, weil sie vom Bundestag und damit im Namen unseres Volkes in solche Einsätze gerufen werden³. Indem dies eben in unserem Namen als Staatsbürger geschieht, stehen auch wir vor den Fragen, ob solche Einsätze rechtlich legal und ethisch legitim wären.

Ich möchte zu diesen Fragen aus der Perspektive eines evangelischen Ethikers Stellung beziehen. Dabei werden zunächst die beiden im Titel vorgegebenen Begriffe „wirtschaftliche Interessen“ und „menschliche Sicherheit“ präzisiert, denn viel hängt davon ab, dass die Kontroversen mit der nötigen wissenschaftlichen Klarheit in den Blick genommen werden. Die Ethik als Wissenschaft hat Niklas Luhmann folgend „die vielleicht vordringlichste Aufgabe [...], vor Moral zu warnen“⁴. Sofern damit gemeint ist, Vorbehalte gegenüber einer ungezügelten und assoziativen Verwendung moralischer Gefühle und gegenüber einem vermeintlichen Wertekonsens, der durch plakative Beispiele herbeigerufen wird, zu formulieren, ist dem zuzustimmen. Nach der also durchaus moralwissenschaftlich⁵

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1 Vgl. dazu Bastian Loges, Schutz als neue Norm in den internationalen Beziehungen. Der UN-Sicherheitsrat und die Etablierung der Responsibility to Protect, Wiesbaden 2013.

2 Folgendes Zitat Köhlers aus einem Interview mit dem Deutschlandradio Kultur vom 22. Mai 2010 sorgte für Aufsehen: „Meine Einschätzung ist aber, dass insgesamt wir auf dem Wege sind, doch auch in der Breite der Gesellschaft zu verstehen, dass ein Land unserer Größe mit dieser Außenhandelsorientierung und damit auch Außenhandelsabhängigkeit auch wissen muss, dass im Zweifel, im Notfall auch militärischer Einsatz notwendig ist, um unsere Interessen zu wahren, zum Beispiel freie Handelswege, zum Beispiel ganze regionale Instabilitäten zu verhindern, die mit Sicherheit dann auch auf unsere Chancen zurückschlagen negativ, bei uns durch Handel Arbeitsplätze und Einkommen zu sichern. Alles das soll diskutiert werden, und ich glaube, wir sind auf einem nicht so schlechten Weg.“ – zitiert nach Frankfurter Rundschau vom 27. Mai 2010.

3 Vgl. Hartwig von Schubert, Die Ethik rechterhaltender Gewalt, Opladen 2013.

4 Vgl. Niklas Luhmann, Paradigm lost. Über die ethische Reflexion der Moral, Frankfurt/Main 1990, 40f.

5 Anders als die Frankfurter Schule (von Adorno über Habermas bis zu Forst) verwende ich in Übereinstimmung mit den meisten evangelischen Ethikern die Begriffe Ethik und Moralphilosophie synonym. Gemeint ist die Lehre von der Moral (Personalethik) und von den Sitten (Sozialethik). Es wird also davon ausgegangen, dass nicht nur die gesellschaftlichen, sondern auch die persönlichen Werte und Normen wissenschaftlich reflektiert und mit guten Gründen beurteilt werden können.