U.S. CONVENTIONAL PROMPT STRIKE: POTENTIAL IMPLICATIONS FOR THE ASIA PACIFIC

Policy Brief

June 2015

Benjamin Schreer

RSiS Nanyang Technological University | S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES

Policy Brief

U.S. CONVENTIONAL PROMPT STRIKE
POTENTIAL IMPLICATIONS FOR THE ASIA PACIFIC

Benjamin Schreer
June 2015

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The United States' military continues to explore long-range conventional prompt strike capabilities to strike 'time-sensitive' targets across the globe on very short notice. Known as Conventional Prompt Global Strike (CPGS), the programme has not yet translated into operational weapon systems because of technological and political challenges. However, it is important to think about the possible implications of an introduction of conventional prompt strike systems into the Asia Pacific theatre. Part of the rationale for developing these weapons has been the potential utility in a conflict with China or North Korea. As a result, the paper analyses the possible strategic impact of CPGS systems in the Asia Pacific.

Undoubtedly, long-range conventional strike systems would provide U.S. political and military leaders with additional military options. Yet, their introduction into the Asia Pacific region could also be problematic for strategic and operational reasons. It is far from clear that they would be needed in a DPRK scenario. Moreover, the rationale for potential operations against targets in China is questionable. At a minimum, long-range, prompt conventional strike systems would pose challenges for U.S.-Sino crisis stability. Regardless, the region needs to prepare for a future where two or more states possess a new category of offensive, conventional systems.

INTRODUCTION

The U.S. military continues to explore long-range conventional prompt strike capabilities to strike "time-sensitive" targets across the globe on very short notice. Known as Conventional Prompt Global Strike (CPGS), the programme has not yet translated into operational weapon systems because of technological and political challenges. Yet, it makes sense to start thinking about the possible introduction of conventional prompt strike systems, including intermediate range, into the Asia Pacific theatre.

Advocates for the development of a new category of long-range conventional strike systems for prompt delivery argue that these weapons will be essential in a changing strategic and operational environment facing U.S. forces. Four future missions have been discussed: (i) preventing the launch of a limited nuclear arsenal by an emerging nuclear weapons state; (ii) destroying or disabling "anti-satellite" (ASAT) weapons; (iii) countering "anti-access/area-denial capabilities" (A2/AD) capabilities; and (iv) killing high-value terrorists and disrupting terrorist operations. Once operational, those weapons would enable the U.S. military to strike targets without relying on increasingly vulnerable forward operating bases. They would also be suitable for strikes against targets deep inside enemy territory in case that territory was out of reach of forward deployed U.S. forces. Targeting enemy air defences and command and control systems (C2), CPGS systems could be used to attack hostile "A2/AD'" architectures. Moreover, long-range conventional strike weapons could strike targets across the globe in hours or even minutes—helping to counter enemy tactics of concealing targets or making them mobile—thereby reducing reaction time. Lastly, they could be used to destroy hardened and deeply buried targets to prevent a hostile launch of hidden weapons.[1]

Consequently, the Obama administration has declared the development of CPGS weapons an important capability to support U.S. regional deterrence and reassurance goals.[2] Once operational, they would therefore also have potential implications in the Asia Pacific region. Some U.S. analysts argue that these weapons would only be used as a deterrent against the Democratic Republic of North Korea's (DPRK) emerging nuclear arsenal.[3] However, it is reasonable to assume that U.S. military planners also see a role in possible contingencies involving the People's Republic of China (PRC: hereafter called China). As China invests heavily in the ability to strike U.S. troops based in Japan, South Korea and elsewhere in the region, long-range conventional strike systems would certainly complicate Chinese war-planning. The People's Liberation Army's (PLA's) evolving ASAT and A2/AD capabilities are a major concern for the U.S. military.[4] Therefore, CPGS systems could play an important part in the emerging U.S. military doctrine to strike deep targets within enemy territory to overcome the A2/AD threat to its forces.[5] They could thus be used to threaten critical, non-strategic targets within mainland China. Moreover, a 2009 report by the Pentagon's Defense Science Board discussed a CPGS scenario where a "near-peer competitor", that is, China, had used its ASAT capability to target a U.S. satellite.[6]

Undoubtedly, long-range conventional strike systems would provide U.S. political and military leaders with additional military options. Yet, this paper finds that their introduction into the Asia Pacific region would not be unproblematic. It is far from clear that they would be needed in a DPRK scenario. Moreover, the rationale for potential operations against targets in China is questionable. At a minimum, long-range, prompt conventional strike systems would pose challenges for U.S.-Sino relations and stability. That said, the region will need to prepare for a future where two or more states possess a new category of offensive, conventional systems.

---

1 The arguments for CPGS are summarised in James M. Acton, *Silver Bullet? Asking the Right Questions About Conventional Prompt Global Strike* (Washington, DC: Carnegie Endowment for International Peace, 2013).

2 U.S. Department of Defense, *Nuclear Posture Review Report* (Washington, DC: US Department of Defense, April 2010), p. x, accessible at: http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf

3 David Alexander and Andrea Shalal, 'Experimental U.S. hypersonic weapon destroyed seconds after launch', *Reuters*, 25 August 2014, accessible at: http://www.reuters.com/article/2014/08/25/us-usa-military-hypersonic-idUSKBN0GP1ED20140825

4 U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China 2014, Annual Report to Congress* (Washington, DC: Office of the Secretary of Defense, 2014), pp. 30–32, accessible at: http://www.defense.gov/pubs/2014_DoD_China_Report.pdf

5 The 2012 Joint Operational Access Concept (JOAC) emphasised that in order to deal with A2/AD challenges US forces might need to strike targets deep within enemy territory, including 'critical hostile elements, such as logistics and command and control nodes, long-range firing units, and strategic and operational reserves.' U.S. Department of Defense, *Joint Operational Access Concept (JOAC), Version 1.0*, 17 January 2012, p. 24, accessible at: http://www.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf.

6 US Department of Defense, *Time Critical Strike from Strategic Standoff*, Report of the Defense Science Board Task Force (Washington, DC: 2009), p. 2, accessible at: http://www.acq.osd.mil/dsb/reports/ADA498403.pdf

CURRENT STATUS: FROM GLOBAL TO PROMPT REGIONAL STRIKE?

The development of long-range conventional strike systems became official U.S. defence policy in 2001.[7] That year, the Nuclear Posture Review announced the development of a "New Triad", consisting of offensive nuclear and conventional strike systems.[8] The 2001 Quadrennial Defense Review Report (QDR) also called for new investments in non-nuclear long-range arrack capabilities to enhance global power projection.[9] In 2003, "Prompt Global Strike" (including nuclear and conventional systems) was assigned as a mission to U.S. Strategic Command. The 2006 QDR elaborated on the need for a global conventional strike capacity against "time-sensitive targets." It announced the intention to modify nuclear "Trident" D5 Submarine Launched Ballistic Missiles (SLBMs) into a long-range conventional ballistic missile capability,[10] which became known as the Conventional Trident Modification (CTM) programme.

Yet, the option to modify existing ballistic missile technologies like SLBMs or intercontinental ballistic missiles (ICMBs) as delivery vehicle for conventional warheads faced the problem of nuclear ambiguity. That is, Russia or China could interpret the launch of a conventional SLMB or ICMS as a nuclear attack because of the missile trajectory. Out of these concerns, the U.S. Congress refused funding for the CTM programme and disapproved the option to modify "Minutemen II" and "MX/Peacekeeper" ICMBs for delivery of conventional warheads.

Instead, it supported the pursuit of technologically more challenging and more expensive options. The first was based on boost-glide vehicles travelling at hypersonic speed of Mach 5 (the equivalent of around 6,200 kmph at sea level and 5,300 kmph at high altitude) or above. The U.S. Air Force and the Defense Advanced Research Projects Agency (DARPA) initiated an ambitious project to develop a land-based, boost-glide weapon with a range of 17,000 km, known as the Hypersonic Technology Vehicle 2 (HTV-2). Congress also insisted on funding a U.S. Army project to develop the shorter range (up to 6,000 km) Advanced Hypersonic Weapon (AHW). The Bush administration also planned a Conventional Strike Missile based on HTV-2 technology. Yet, none of these technologies reached the stages of testing.

During its first term, the Obama administration reiterated its interest in CPGS. For example, the 2010 QDR stated that "enhanced long-range strike capabilities are one means of countering growing threats to forward deployed forces and bases and ensuring U.S. power projection capabilities." It also announced that the Pentagon planned to "experiment with conventional prompt global strike prototypes."[11] The 2010 NPR suggested that CPGS capabilities "may be particularly valuable for the defeat of time-urgent regional threats."[12]

The Pentagon also started testing hypersonic strike systems. In 2010 and 2011, it tested HTV-2 gliders which both flew for about nine minutes before their premature flight termination.[13] Besides, in 2011, an AHW successfully travelled over 3,800 km to its planned location at hypersonic speed. As a result, the administration prioritised funding for AHWs; HTV-2 programmes took a backseat. This step reflected a more realistic, less ambitious approach to conventional strikes delivered by hypersonic systems. U.S. defence officials dropped the emphasis on "global" strike and now refer to the programme as "conventional prompt strike". This indicates that, for the time being at least, a focus on regional, intermediate-range strike capabilities is considered more promising.[14]

---

7 Unless otherwise noted this section is based on Acton, Silver Bullet, pp. 39–48.

8 Donald H. Rumsfeld, 'Nuclear Posture Review Report: Foreword', 2002, accessible at http://www.defense.gov/news/jan2002/d20020109npr.pdf

9 U.S. Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: US Department of Defense, 30 September 2001), pp. 43–44, accessible at: http://www.defense.gov/pubs/qdr2001.pdf

10 U.S. Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: US Department of Defense, 6 February 2006), p. 50, accessible at http://www.defense.gov/qdr/report/Report20060203.pdf

11 U.S. Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: US Department of Defense, February 2010), pp. 32–33; accessible at: http://www.defense.gov/qdr/images/QDR_as_of_12Feb10_1000.pdf

12 U.S. Department of Defense, *Nuclear Posture Review Report* (Washington, DC: US Department of Defense, April 2010), p. 34, accessible at: http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf

13 Tariq Malik, 'Death of DARPA's Superfast Hypersonic Glider Explained', *Space.com*, 23 April 2012, accessible at: http://www.space.com/15388-darpa-hypersonic-glider-demise-explained.html

14 Amy E. Woolf, *Conventional Prompt Global Strike and Long-Range Ballistic Missiles: Background and Issues for Congress* (Washington, DC: US Congressional Research Service, 26 August 2014), accessible at: http://fas.org/sgp/crs/nuke/R41464.pdf

Overall, U.S. conventional prompt strike weapons remain very much in their experimental stage and technological challenges to powered hypersonic glider technology remain, as demonstrated by the failed test of an AHW demonstrator in August 2014.[15] Nevertheless, the development of these weapons will continue to be a priority for the U.S. military and enjoys broad support in Congress. Indeed, after China tested a new hypersonic glide vehicle (HGW) for the second time in January 2014, U.S. Congressmen were already worried about a potential loss of America's advantage in the hypersonic space which is likely to harden their support for Pentagon initiatives.[16]

It should also be noted that it is not impossible for technological challenges related to hypersonic weapons to be overcome.[17] In fact, progress in new materials and high-performance computing could provide solutions for hypersonic flights. For instance, in 2013, the U.S.' *X-51 WaveRider* supersonic combustion ramjet (Scramjet) conducted its first fully successful flight test after three failed attempts, reaching Mach 5.1 for around six minutes.[18] The Pentagon also recently announced its desire to work on the design for a Sea-Launched Intermediate-Range Ballistic Missile (SLIRBM) with a range of around 2,400 km for its *Virginia*-class nuclear attack submarines. It is thus not unlikely that prompt conventional strike systems could be introduced into the Asia Pacific theatre over the next decade or so—particularly since China, India and Russia are also working on similar projects.

15 David Alexander and Andrea Shalal, 'Experimental U.S. hypersonic weapon destroyed seconds after launch', *Reuters*, 25 August 2014, accessible at: http://www.reuters.com/article/2014/08/25/us-usa-military-hypersonic-idUSKBN0GP1ED20140825

16 Mike Hoffman, 'Congress Reacts to Chinese Hypersonic Missile Test', *Defense Tech*, 14 January 2014, accessible at: http://defensetech.org/2014/01/14/congress-reacts-to-chinese-hypersonic-missile-test/

16 'Speed is the new stealth', *The Economist*, 1 June 2013, accessible at: http://www.economist.com/news/technology-quarterly/21578522-hypersonic-weapons-building-vehicles-fly-five-times-speed-sound

17 Mike Wall, 'Air Force's X-51A hypersonic scramjet makes record-breaking final flight', *Space.com*, 3 May 2013, accessible at: http://www.space.com/20967-air-force-x-51a-hypersonic-scramjet.html

POTENTIAL MISSIONS

Before discussing the potential missions for U.S. prompt conventional strike in the Asia Pacific region, it is important to say a few words about the potential application of such systems against potential terrorist targets given that counter-terrorism (CT) operations have been used as a rationale for CPGS. Moreover, terrorist groups are a significant problem in parts of Asia, particularly in Southeast Asia. Yet, the utility of these weapons for CT missions in the Asia Pacific region will probably be extremely limited. Analysts point out that in general the rationale for using CPGS in CT missions is not as compelling as it first appears.[19] Experience in CT operations in Africa and the Middle East suggest that the criteria for "promptness" is often overstated. Moreover, operations against high-value terrorist targets on short notice can be equally effective conducted by other capabilities. These include manned aircraft, unmanned drones (which can also perform intelligence, surveillance and reconnaissance related to the mission), and raids by Special Forces. Also, in those missions there is likely to be no air defence threat which would require CPGS systems.

In state-on-state conflicts, U.S. conventional prompt strike missions against the DPRK and/or China could be conducted using different delivery platforms:[20]

First, hypersonic missiles could be delivered by long-range bombers. They could be used to strike time-critical targets in the DPRK given the nation's limited strategic depth and weak air defences. Operations against China would also be possible but be much more challenging because of the PLA's evolving air defence architecture and the country's expansive strategic depth. For instance, China's ASAT facility in Xinjiang province is over 2,500 km from the nearest coastline.

Second, U.S. forces could deliver SLIRBMs from submarines or surface combatants. Again, they would offer a military option in a DPRK scenario. They could also be used against Chinese targets, provided the launch platforms evade the PLA's defences which will further improve over the coming decades and provided the weapons would have the reach to engage the desired targets within China.

Thirdly, U.S. forces could launch land-based AHWs from bases in Guam, Hawaii or Diego Garcia. Given that it would be very difficult to defend against such systems, they could have the range and high probability to reach almost any target of interest in the Asia Pacific theatre, including in the DPRK and China.

19 Acton, Silver Bullet?, pp. 88–89.

20 Ibid.

IS IT A GOOD IDEA?

Simply because U.S. forces could employ conventional prompt strike weapons in the Asia Pacific theatre does not automatically mean it would be the best option. One way to assess their utility as a military means is to ask whether these weapons would be "effective" and "efficient" in a DPRK or a China scenario. Military effectiveness relates to the degree to which the use of such weapons are likely to achieve political objectives at acceptable political costs and are therefore deemed appropriate by political leaders—in this case a democratically elected U.S. government.[21] A key rationale for CPGS is that there is a possibility to address an imminent attack by either DPRK or China through a pre-emptive U.S. strike with prompt long-range conventional weapons. How realistic is it that a U.S. President would authorise a pre-emptive strike on either country? Alternatively, would it likely be an effective response to a hostile act?

In addition, it makes sense to ask whether employment of such weapons is likely to achieve those political objectives at lower costs than alternative military capabilities. Another critical assumption is that the U.S. actually has the adequate C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) architecture to track and target, for instance, a mobile PLA ASAT weapon. Finally, one needs to consider the broader implications which could result from the introduction of these weapons for strategic stability between the U.S. and its prospective foes, the DPRK and China, and for the broader Asia Pacific region.

21 On the relationship between military effectiveness and societal-political structures see Stephen Peter Rosen, 'Military Effectiveness: Why Society Matters', *International Security* 19 (4), Spring 1995, pp. 5–31.

NORTH KOREA

It is core U.S. interest to prevent a DPRK nuclear attack on its homeland. While there is significant uncertainty about the status of Pyongyang's nuclear weapons programme, it is rather unlikely that the country will develop a highly sophisticated, dispersed architecture, including road-mobile missiles which are difficult to track and target and which would allow for launch at very short notice. Instead, a North Korean nuclear ICMB capability is likely to be limited and restricted to fixed launch sites. Therefore, should the regime get ready to launch a nuclear missile against the U.S. homeland, related preparations would hardly go undetected by U.S. and allied surveillance assets. Also, it is reasonable to assume that a North Korean decision to launch a rather suicidal attack would be the culmination of a severe crisis where military hostilities would have already begun, or in the face of an impending regime collapse.

In such circumstances, the deterrent value of prompt conventional strike systems is likely to be very limited since the DPRK regime will have reached a level of desperation and determination that would probably make it "undeterrable". Furthermore, in both scenarios, U.S. forces in South Korea and Japan would already be placed on high-alert. Submarines and long-range bombers would also be forward deployed. Still, should a U.S. President consider pre-emptive strike against the DPRK's nuclear capability, prompt conventional strike weapons would provide an additional military option. And given the DPRK's weak air defences, such strikes would most likely achieve the military objective to destroy launch site(s) and related military infrastructure.

That said, forward deployed U.S. forces would most likely to be in a position to achieve the same operational effect with existing capabilities. For instance, cruise missiles launched from submarines, surface ships and aircrafts are likely to do the job just as well—unless DPRK forces manage to develop an extensive and sophisticated A2/AD architecture which would greatly complicate U.S. operations to launch existing sea-, air- and land-based conventional missiles. This is a rather unlikely prospect. It is therefore not obvious whether prompt long-range conventional strike capabilities would be required in a North Korean scenario given the U.S.' overwhelming conventional and nuclear superiority.

CHINA

Stability in U.S.-Sino relations is fundamental for both nations and the Asia Pacific region as a whole. Yet, both sides are interested in developing a new category of conventional weapons. In fact, whereas the U.S. (so far) has not modified ballistic missiles for prompt conventional strike, China has fielded a hypersonic medium-range DF-21D anti-ship ballistic missile, reportedly travelling at Mach 10. As mentioned, both sides are also working on hypersonic weapons based on glider and scramjet technologies. However, it is not entirely clear if the current rationale for U.S. operations against China using prompt conventional strike is compelling.

China is a rising major power and an established nuclear weapons state which has made gradual progress towards acquiring a more secure nuclear second-strike capability *vis-à-vis* the United States.[22] The PLA has also rapidly developed its conventional capabilities (partly) to deny U.S. forces freedom of manoeuvre in China's maritime and aerial approaches. As a result, a debate has emerged among U.S. and international scholars about readjusting U.S. military strategy, including the controversial option of striking targets deep inside mainland China with conventional weapons such as CPGS systems.[23]

Those who argue for conventional deep strikes in mainland China contend that such threats could contribute to deterrence stability. Unlike nuclear weapons, prompt conventional strike systems would be more versatile and usable. For instance, they could be used in a crisis to target and destroy PLA mobile launchers. Since these weapons would be very difficult to defend against, China's political and military leadership could be deterred from launching its own weapons; the weapons might thus strengthen U.S.-Sino crisis stability.

However, even if one believes that the threat of conventional strikes against the mainland are an important element of U.S. deterrent posture *vis-à-vis* China, the argument for prompt conventional strikes with hypersonic or SLMRBMs faces serious problems. First, a pre-emptive conventional U.S. strike against China is highly unlikely for political reasons. U.S. strategic history suggests that policy-makers have time and again ruled out the first strike option against a major nuclear power.[24] This is unlikely to change. Equally though, it is difficult to see the motive for a surprise Chinese attack against the United States which would require pre-emptive strikes against "time-critical" targets.

But even if Washington decides to use CPGS against targets in mainland China, it is doubtful whether U.S. forces would have adequate C4ISR systems to track and target "time-sensitive" targets such as the PLA's mobile rocket launchers. Similar questions should be raised about U.S. ability for "battle damage assessment" in relation to such strikes. It is currently also unclear if the CPGS-delivered weapons payload would be able to destroy hardened and/or deeply buried targets in China.[25] Moreover, there is the issue whether the U.S. could field an adequate number of CPGS systems to achieve the desired effect (economies of scale).

Finally, the potential and actual use of prompt conventional strike systems might also have the unintended consequence of undermining U.S.-Sino crisis stability. It is quite likely that U.S. conventional prompt regional or global strike systems would be regarded by China as a new category of offensive weapons favouring the attacker.[26] Faced with a potentially debilitating U.S. conventional first-strike against its critical military infrastructure, China's leaders might be tempted to strike first during a crisis regardless of actual U.S. intentions. Besides, after an initial U.S. strike with CPGS systems against conventional targets on the mainland, it could be difficult to reassure China's political and military leadership that these strikes were not part of a broader campaign to disarm its conventional *and* nuclear infrastructure. The 2010 NPR tried to reassure China (and Russia) that long-range conventional weapons would not target their nuclear capabilities;[27] but it is unclear to what degree this has been successful.

---

22 See Benjamin Schreer, 'China's development of a more secure nuclear second-strike capability: Implications for Chinese behavior and U.S. extended deterrence', *Asia Policy* 19, January 2015, pp. 14–20.

23 See Aaron L. Friedberg, *Beyond Air-Sea Battle: The Debate over US Military Strategy in Asia*, Adelphi Series, no 444 (London, International Institute for Strategic Studies, 2014).

24 Richard K. Betts, *American Force: Dangers, Delusions, and Dilemmas in National Security* (New York: Columbia University Press, 2012), chapter 6.

25 Acton, Silver Bullet, pp. 81–90.

26 On offensive-defensive theory see Sean M. Lynn-Jones, 'Offense-Defense theory and its critics', *Security Studies* 4 (4), Summer 1995, pp. 660–691.

27 US Department of Defense, *Nuclear Posture Review Report*, April 2010, p. 34.

CONCLUSION: A WEAPON IN SEARCH OF A MISSION?

Critics have called CPGS a "missile in search of a mission".[28] This judgment certainly applies to the Asia Pacific region. As this paper shows, the current rationales for using such weapons in possible U.S. operations against either the DPRK or China are far from compelling. Even more, the introduction of such systems could have a negative impact on U.S.-Sino crisis stability. Indeed, both sides are likely to perceive the introduction of prompt conventional strike weapons as destabilising. The U.S. debate on the PLA's "DF21D" is a case in point. The nuclear capable missile is considered by some as a "game changer" given its (potential) ability to strike U.S. aircraft carriers. Although that might not be as clear-cut as often assumed, the perception is one of China altering the military balance.[29]

The U.S., China and other regional nations therefore need to start a discussion on how to prepare for an age where two or more actors operate intermediate and/or long-range prompt conventional strike weapons. It is difficult to see how Asia Pacific powers could agree on measures of mutual restraint (such as arms control) when it comes to the development and acquisition of these weapons. Consequently, they need to consider how to manage crisis stability under conditions of prompt conventional strike systems which might well lead to a real or perceived shift in the offensive-defensive balance. How does effective "signaling" work in these circumstances? At which point do prompt conventional strikes become a "strategic" threat to one side so as to trigger an unwanted escalation, including the use of nuclear weapons?[30]

More specifically, the United States and China should intensify their discussions on how the introduction of hypersonic strike systems is likely to affect strategic stability between the two great powers in Asia, and what to do about it. Both sides, for instance, could agree to exercise mutual restraint when it comes to using long-range hypersonic weapons, similar to what U.S. experts have suggested for the nuclear, space and cyberspace domains.[31] Yet, China's investment in the DF-21D casts doubt on such an outcome. Finally, for the U.S. there is the issue of whether prompt conventional strikes against mainland China could deliver a desired and acceptable political outcome. Instead of focusing U.S. warfighting concepts on offensive conventional strikes on Chinese territory, it might be more effective to create "lethal maritime 'kill boxes' for Chinese warships and, if desired, Chinese commerce."[32] While in such an approach, hypersonic weapons could still play a role—for instance in attacking airfields on the Chinese coast—they would not be used in a pre-emptive role against targets deep in mainland China.

In any event, the arrival of prompt hypersonic conventional strike systems will pose significant challenges for Asia Pacific strategic stability.

---

28 Acton, Silver Bullet, p. 9.

29 Ronald O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities – Background and Issues for Congress*, Congressional Research Service, 23 December 2014, pp. 6–7.

30 Benjamin Schreer, 'The strategic implications of China's hypersonic missile test', *The Strategist*, 28 January 2014, accessible at: http://www.aspistrategist.org.au/the-strategic-implications-of-chinas-hypersonic-missile-test/

31 David C. Gompert and Phillip C. Saunders, *The Paradox of Power: Sino-American Strategic Restraint in an Age of Vulnerability*, (Washington, DC: National Defense University, 2011).

32 David A. Shlapak, 'Towards a More Modest American Strategy', *Survival* 57 (2), April – May 2015, p. 72.

ABOUT THE AUTHOR

Dr Benjamin Schreer is a Senior Fellow for Defence Strategy at the Australian Strategic Policy Institute (ASPI) in Canberra, Australia. In December 2014 he was also a Visiting Fellow with the Military Transformations Programme within the Institute of Defence and Strategic Studies at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University (NTU), Singapore. Dr Schreer holds a PhD in Political Science from the Christian-Albrechts-University of Kiel, Germany.

ABOUT THE S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES

The **S. Rajaratnam School of International Studies (RSIS)** is a professional graduate school of international affairs at the Nanyang Technological University, Singapore. RSIS' mission is to develop a community of scholars and policy analysts at the forefront of security studies and international affairs. Its core functions are research, graduate education and networking. It produces cutting-edge research on Asia Pacific Security, Multilateralism and Regionalism, Conflict Studies, Non-Traditional Security, International Political Economy, and Country and Region Studies. RSIS' activities are aimed at assisting policymakers to develop comprehensive approaches to strategic thinking on issues related to security and stability in the Asia Pacific.

For more information about RSIS, please visit www.rsis.edu.sg.

RSiS
Nanyang Technological University
S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES

Nanyang Technological University
Block S4, Level B4, 50 Nanyang Avenue, Singapore 639798
Tel: +65 6790 6982 | Fax: +65 6794 0617 | www.rsis.edu.sg