

China's Strategic Support Force: A Force for a New Era

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Introduction

The Strategic Support Force's creation comes at an inflection point for the PLA as a whole. China has accelerated the ongoing shift of its military posture from land-based territorial defense to extended power projection, not only in the East and South China Seas but also beyond them.¹ As part of this transition, China's leaders have expressed a growing desire to protect their country's interests further afield in the "strategic frontiers" of space, cyberspace, and the far seas.² The relatively authoritative 2013 edition of the *Science of Military Strategy* gives a comprehensive description of China's evolving strategic needs that give a prescient pretext for the creation of the Force. The text bears to be quoted at length [emphasis added]:

*Our nation's national interests have surpassed the traditional territorial, territorial sea, and territorial airspace scope to continuously expand towards the periphery and the world, and continuously extending towards the oceans, space, and electromagnetic space. The risk for great powers fundamentally is competition that revolves around realizing of the maximization of national interests. In the future, this kind of competition will focus more and more on such contention and control of such global public spaces as the ocean, poles, space, and cyberspace, etc. Under this background, our military must expand its military strategic view and provide strong and powerful **strategic support** within a greater spatial scope to maintain national interests.*

The text goes on to say that that "preparations and pre-positioning in fighting for new strategic spaces is both an important brace-support for a country's use of these international public spaces, and also an important action in contesting new military strategic commanding heights."³ China's 2015 Military Strategy White Paper, an even more official document, similarly describes the three as "critical domains" and echoes their importance to China's national interests.⁴ The SSF's design is a logical fit for improving China's access to the space and cyber domains in peacetime and contesting them in wartime.

¹ Chris Sharman, "China Moves Out: Stepping Stones Toward a New Maritime Strategy", *China Strategic Perspectives*, No. 9, Center for the Study of Chinese Military Affairs, Institute for National Strategic Studies, National Defense University Press, April 2015, p. 5

² For an expansive discussion of this concept, see Zhou Bisong [周碧松], *Strategic Frontiers* [战略边疆], National Defense University Press [国防大学出版社], 2016. See also *SMS* (2013 Ed.), p. 73.

³ *SMS* (2013 Ed.), p. 73

⁴ Ministry of National Defense of the People's Republic of China [中华人民共和国国防部], "China's Military Strategy" [中国的军事战略], State Council Information Office [国务院新闻办公室], May 26, 2015, http://www.mod.gov.cn/auth/2015-05/26/content_4586723.htm

The SSF's "remote operations"⁵ in the far seas and beyond are aimed at achieving strategic national objectives through counter-intervention and power projection.

The Strategic Basis of the Strategic Support Force

The SSF demonstrates the evolution of Chinese thought on information as a strategic resource in warfare, reflecting the paramount need to harness space, cyber, and the electromagnetic spectrum for military superiority while denying their use to adversaries. The prevailing Chinese view is that while these domains exist as 'international public spaces' in peacetime, conflict produces a zero-sum contest for their control.⁶ Their importance is largely owed to their use as the primary conduits by which information is collected, processed, transmitted, or received. The 'system of systems' infrastructure this enables is viewed by the Chinese military as a cornerstone of modern military operations, and a necessary component to fulfill the PLA's ambitions of becoming both an informatized and 'world-class' military. After the reforms, the responsibilities for fielding the most critical of these systems, and defending the battlespaces they use at the national level, have been incorporated together under the aegis of the Strategic Support Force. The Strategic Support Force can be said to have three primary missions and functions: information support, information warfare, and force development.

The two interrelated missions of 'information support' and 'information warfare' closely, though not entirely, align with the Force's subordinate space and cyber corps. The integration of information support and information warfare by design advances PLA's ability to achieve information superiority by having two of its primary components as core missions of the Force. The military's mandate to modernize and operate further from China's shores drives the Force's information support mission which, in turn, demands more of its information warfare forces. Placing the two missions together allows this relationship to proceed in lockstep and in balance, so that the military's growing reliance on information infrastructure never exceeds its ability to contest or defend the domains that support it.

As China's military modernizes and moves outward, the asymmetric advantages it has relied on as a land-based, low-tech power will narrow, and it will increasingly have to content high-tech adversaries on more equal terms. This places a priority on force construction and development, fielding advanced capabilities and more technically-proficient cadre that able to narrow the gap or surpass strategic rivals in offense-oriented technologies. The SSF follows the model of the Second Artillery Corps and is a clear indicator that the CMC hopes to apply similar successes it has had in development of strategic missiles, which have become a cornerstone of conventional deterrence, to the space and cyber domains.

Force Organization and Structure

Before the reforms, the rapid advancement of the technical capabilities of Chinese space, cyber, and EW forces stood in stark contrast with the PLA's stagnant operational structure, which remained virtually unchanged throughout the 2000s, despite significant shifts in operational realities. In the years immediately leading up to the PLA's latest reorganization, there has been a growing realization in PLA scholarly circles that the PLA's structure and organization, not its technological capabilities, had emerged

⁵ Zhou Bisong [周碧松], "Strategic Frontiers" [战略边疆], *zlzy.81.cn*, http://zlzy.81.cn/tb/2016-08/15/content_7231775.htm

⁶ Citation from SMS 2013.

as the foremost roadblock facing PLA modernization efforts.⁷ The key organizations responsible for space, cyber, and electronic warfare missions remained stove-piped, even as the PLA's strategic literature increasingly called for greater integration of these forces as an operational necessity.⁸ It is therefore unsurprising that the PLA saw the current period of major reforms as an opportunity to finally realign its sprawling space, cyber, and electronic warfare capabilities into a unified force.

Administratively, the SSF operates like the former Second Artillery Force (第二炮兵部队, or PLASAF), which was similarly a *budui* (or 'force') that functioned like a service and consolidated strategic capabilities under the direct command of the CMC.⁹ Of its first-level departments, the SSF has a standard four-department administrative structure that includes the SSF Staff Department (参谋部), Equipment Department (装备部),¹⁰ Political Work Department (政治工作部),¹¹ and a Logistics Department (后勤部). Alongside these departments, the Force also maintains headquarters for its space

⁷ Dennis J. Blasko, "The "Two Incompatibles" and PLA Self-Assessments of Military Capability," *China Brief Volume: 13 Issue: 10*, Jamestown Foundation, May 2013, at <https://jamestown.org/program/the-two-incompatibles-and-pla-self-assessments-of-military-capability/>

⁸ *SMS* (2013 Ed.), p. 169

⁹ For a more involved discussion on the status of the Strategic Support Force, see Kevin L. Pollpeter, Michael S. Chase, Eric Heginbotham, *The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations*, The Rand Corporation, 2017, p. 21-22

¹⁰ The Strategic Support Force's Equipment Department is listed as a participating organization in the upcoming "2018 Seventh Exhibition on New Technologies and Equipment for Military Logistics" [2018 第七届军事后勤保障新技术与新装备展览会] to be held on June 23, 2018; see <http://www.hui.net/news/special/key/1sim4hc9rsgMu>; A Senior Colonel Xiao Zhiyu (肖志宇) from the SSF Equipment Department was referenced as a speaker and attendee to the "2017 China Civil and Military Dual-use Technology Conference" [2017 中国军民两用技术研讨会] held in conjunction with an opening ceremony for the newly-established Changzhou Military-Civilian Fusion Industrial Park [常州军民融合产业园] on May 21, 2017, see <http://edp.hit.edu.cn/ba/07/c7876a178695/page.htm>

¹¹ "Major General Feng Jianhua Promoted to Director of Strategic Support Force Political Work Department" [冯建华少将升任战略支援部队政治工作部主任], *china.caixin.com*, February 29, 2016, <http://china.caixin.com/2016-02-29/100913753.html>; Feng Jianhua (冯建华) is listed as a 'deputy Military Theater leader-grade' and was subsequently promoted to Lieutenant General in October 2017, see <https://xw.qq.com/cmsid/20171030A0IZEL00>. The Strategic Support Force Political Work Department deputy directors have been listed as Major General Chen Jinrong (陈金荣), see http://www.thepaper.cn/newsDetail_forward_1429068, and Huang Qiusheng (黄秋生), see http://www.thepaper.cn/newsDetail_forward_1749068

and information warfare forces in the Space Systems Department (航天系统部, or SSD)¹² and Network Systems Department (网络系统部, or NSD),¹³ respectively.

Space Corps: This reorganization of China's myriad space capabilities into a coherent, unified space corps is a response to organizational challenges that arose from space forces being dispersed throughout the military. Previously, the PLA was tasked with executing space missions using assets spread across the General Armament Department and General Staff Department.¹⁴ The space corps has now subsumed nearly every aspect of PLA space operations that were formerly controlled by GAD and GSD, including space launch and support, space telemetry, tracking, and control (TT&C), space information support, space attack, and space defense.¹⁵ It is currently unclear what responsibilities, if any, the SSF's space corps has for anti-satellite missile (ASAT) research, development, testing, and operations, nor is it known whether the SSF has a role in the related discipline of ballistic missile defense (BMD). Both missions could presumably fall under the categories of space attack and defense, respectively, which would place them under the Strategic Support Force's remit. Alternatively, these missions may be assigned to the PLA Rocket Force, which already has a role in missile operations, or the PLA Air Force, which have already demonstrated a limited capability in both anti-satellite missiles and ballistic missile defense.

Cyber Corps: The Strategic Support Force's cyber mission has been given to the Network Systems Department (网络系统部, or NSD), a 'deputy theater command leader' grade (副战区级) organization that acts as the headquarters for the SSF's cyber operations forces, sometimes referred to as a 'cyber corps' or 'cyberspace operations forces' (网军 or 网络空间作战部队). Despite its name, the Network Systems Department and its subordinate forces are responsible for information warfare more broadly, with a mission set that includes cyber warfare, electronic warfare, and potentially psychological warfare. At first glance, the Network Systems Department appears to represent a renaming, notional reorganization, and grade promotion of the former GSD Third Department (总参三部, or 3PLA), which appears to have moved in its entirety. Much as the institutions of the former GSD provided the partial

¹² "Strategic Support Force Space Systems Department Test Equipment Materials Purchasing Bureau Medical Equipment Advertisement for Public Open Bid and Tender" [战略支援部队航天系统部试验装备物资采购局医疗设备公开招标采购公告], chinabidding.org.cn, August 25, 2016, http://www.chinabidding.org.cn/PurchaseInfoDetails_pid_1558826.html.

¹³ "Our Board Convened the Eleventh Meeting of our Fifth Board of Directors and the 2017 Military-Industrial Enterprise Salon" [我会召开第五届第十一次理事会议暨 2017 军工企业沙龙], Shenzhen Promotion Association for Small and Medium Enterprises [深圳市中小企业发展促进会], August 31, 2017, <http://www.szsmc.com/cn/dtdetail/81/755.html>

¹⁴ For an excellent analysis of the status of these missions prior to the reforms, see Mark A. Stokes and Dean Cheng, *China's Evolving Space Capabilities: Implications for U.S. Interests*, U.S. China Economic and Security Review Commission, April 26, 2012, p. 4-5

foundation for the creation of the Space Systems Department, they also form the organizational core of the NSD. The Network Systems Department maintains the former Third Department's headquarters, location, and internal bureau-centric structure. In at least one instance, the NSD has been referred to as the "SSF Third Department" (战略支援部队第三部), mirroring its former appellation.¹⁶

Support for Joint Operations

In December 2015, the Central Military Commission restructured the principal responsibilities of the military's main components under a new paradigm encapsulated by the official phrase "CMC leads, theaters fight, and services build" (军委管总, 战区主战, 军种主建), envisioning a division of labor that would see the new theaters focus on operations, the services on force construction, and the CMC on supervising and managing both. This approach resulted in a new dual-command structure with an administrative chain from the Central Military Commission to the services and an operational chain from the Central Military Commission to the five joint-force theater commands. In theory, this would imply the Strategic Support Force's subordinate elements would be under the operational command of the five military theaters. In practice, however, much like the nuclear-armed PLA Rocket Force (解放军火箭军, or PLARF), the SSF's capabilities have been deemed sufficiently strategic that they report directly to the Central Military Commission for operations.¹⁷

The reforms have also substantially altered the command context for joint operations, redefining long-standing organizational relationships and creating new responsibilities across the PLA command bureaucracy. The reforms have created a new Joint Staff Department (JSD), created from the former Army General Staff Department, which holds direct command over traditional Services, Theater Commands, and the Strategic Support Force and Rocket Forces, two services which retain dual responsibilities for 'force construction' and operations. The JSD was based on the former General Staff Department, which had effectively been triple-hatted in the past – serving as a notional joint command headquarters, ground force headquarters, and as administrative headquarters for strategic missions and units. The reforms split these responsibilities apart, forming a new ground force headquarters, establishing the Strategic Support Force from pre-existing space, cyber, and electronic warfare forces, and elevating both the General Staff Department and many but not all of its subordinate organs to the Central Military Commission as the Joint Staff Department. The Joint Staff Department's bureaus oversee various aspects of military command, including operations, intelligence, cyber and electronic warfare, communications, and battlefield environment support.

Joint command is a primary objective of the reforms and Chinese media has specifically emphasized that the Strategic Support Force is intended to help enable joint operations. The SSF's role in strategic information support directly enables joint operations by providing a connective substrate that helps to integrate separate service elements. The Strategic Support Force's ability to provide the 'information

¹⁶ See Guo Rui [郭瑞] and He Xiaoyuan [贺筱媛], "Pretreatment Method for Intelligent Analysis of Battlefield Situational Data" [面向战场态势数据智能分析的预处理方法], *Electronic Technology and Software Engineering* [电子技术与软件工程], Volume 16 (2017); Guo Rui's affiliation is listed as the Fifth Bureau of the Strategic Support Force's Third Department (战略支援部队第三部第五局)

¹⁷ Liu Wei [刘伟], *Military Theater Command Joint Operations Command*, [战区联合作战指挥], pg. 340.

umbrella' of space-based C4ISR, intelligence support, and battlefield environment assessments helps forge a common intelligence picture among joint forces within Theater Commands, a fundamental requirement to fulfill the PLA's mission of winning 'informatized local wars.'¹⁸ According to some PLA commentary, the SSF ensures the "centralized management, centralized employment, and centralized development" of support resources¹⁹ and acts as an 'important support' for the PLA's joint operation 'system of systems' (体系).²⁰ At the time of its establishment, Xi Jinping urged the SSF to "support system of systems integration" (体系融合), technical interoperability, information-sharing, and intelligence fusion among the services.²¹ The deputy director of the SSF's 54th Research Institute, Lü Yueguang (吕越光), goes further and states that "information-dominant system of systems integration" challenges will become the "fundamental requirement for future joint operations."²²

The Strategic Support Force diverges in several crucial respects from its apparent conceptual inspiration, the U.S. Strategic Command. First and foremost, STRATCOM provides strategic C4ISR support to the U.S. Combatant Commands as a joint force construct rather than as a singular service like the Strategic Support Force. As a joint functional combatant command, STRATCOM coordinates among a number of subordinate elements from the Army, Navy, Air Force, and Marine Corps to prosecute its primary missions of nuclear operations, space operations, information warfare, strategic C4ISR support, and ballistic missile defense.²³ The SSF lacks responsibility for nuclear forces (a core mission of the PLA Rocket Force), but has similar missions for information warfare, support to ballistic missile defense, and strategic C4ISR. The decision effectively elevates enabling joint operations as a primary mission and basic function of the Force. For their part, Chinese defense commentators intimate that the difference is an intentional, judging the approach was reached after applying lessons learned from observing foreign

¹⁸ Kevin Pollpeter, Eric Anderson, Jordan Wilson, and Fan Yang, *China Dream, Space Dream: China's Progress in Space Technologies and Implications for the United States*, U.S. China Economic and Security Review Commission, 2017, p. 15

¹⁹ "What Kind of Force is the Strategic Support Force Inspected by Xi Jinping?" [习近平视察的战略支援部队是一支怎样的力量?], CCTV, August 30, 2016, <http://news.cctv.com/2016/08/30/ARTI2Xi1zgynCfj6TYsecOcb160830.shtml>

²⁰ "Xi Jinping: Strive to Establish a Powerful, Modern Strategic Support Force" [习近平：努力建设一支强大的现代化战略支援部队], Xinhua, August 29, 2016, http://news.xinhuanet.com/politics/2016-08/29/c_1119474761.htm

²¹ "Army Leading Organs, Rocket Force, and Strategic Support Force Established," [陆军领导机构火箭军战略支援部队成立], Xinhua, January 1, 2016, http://news.xinhuanet.com/politics/2016-01/01/c_1117646667.htm

²² "New-Quality Weapons Decide Victory on the Future Battlefield" [新质利器决胜未来战场], *China Military Online*, March 11, 2016, http://jz.chinamil.com.cn/zhuanti/content/2016-03/11/content_6954336.htm

²³ "Components," U.S. Strategic Command, 2017, <http://www.stratcom.mil/components/>

militaries, where distribution of strategic support across the different services resulted in redundancies in force development and a counterproductive rivalry for funding and resources.²⁴

Implications and Recommendations

While China's more immediate and pressing concern is, no doubt, mastery of and military superiority of its periphery – to include the enduring imperative of Taiwanese reunification – China's expanding national interests forces the Central Military Commission to set for itself a global, if not limited, force as an ultimate objective. Liu Huaqing's three-phased expansion of first-island chain, second-island chain, and global maneuver set against Xi Jinping's revised development objectives for the People's Liberation Army are both informative about what observers can expect from the Chinese military in the coming decades. Both argue for regional supremacy by roughly 2030 and a global, 'world-class' reach by mid-century. If the 1990's were about doctrine, the 2000's about development, and the 2010's about organizational realignment – the next stage for China can be defined as 'scale'. There is little doubt that China is able to field a modern, high-tech force for punctuated, limited periods, but it lacks the capacity to do so at scale and for sustained periods that its growing interests will require. Moreover, its own high-tech development is remarkably uneven, a fundamental material deficit that will diminish its ability to scale operations. To paraphrase William Gibson, for China, "The future is already here, it's just not evenly distributed." How the Central Military Commission diffuses those benefits from the center without sacrificing its control is one of the central challenges China faces in military modernization.

The Strategic Support Force offers the Central Military Commission a uniquely powerful instrument in achieving many of these objectives. The CMC's direct control over the Force recalls its administration of the Second Artillery Corps, whose own history shows rapid development of missile capabilities in defiance of expectations. The SSF is likely an attempt to apply that success towards information support and information warfare, a co-dependent pairing on which the integrity of the PLA's operations regionally and globally increasingly rely. "Scaling" its operations means increasing information base supports and safeguarding the use of the space, cyber, and electromagnetic domains on which they rely. Finally, the Force allows the CMC the benefit of technological progress without attendant loss of control. The preponderance of strategic capabilities and technical intelligence under the force's remit allows it to be wielded alternatively empowering or controlling subordinate joint commands and services.

Shaping Chinese Expansion

There is much the United States can do to shape or counter Chinese expansion and confidence in its ability to project power. The pairing of information support and information warfare within the same force is an overt indicator that China sees its ability to project power as a function of its ability to achieve information dominance quickly. It also means that skepticism about China's ability to achieve information dominance or safeguard its use of information spaces may restrain its extended expansion of and buildout of scale and more robust information support systems. This in turn may constrain PLA operations, or at least raise doubts about freedom of movement and viability of sustained operations. The need to maintain balance breed opportunity for the United States, who can borrow a page from the

²⁴ http://www.qstheory.cn/laigao/2016-09/29/c_1119646359.htm

Chinese 'asymmetric warfare' playbook to employ capabilities that may complicate, raise costs for, and ultimately slow and shape China's military expansion. The United States can do two things:

- **Invest in Electronic Warfare:** While China's development of electronic warfare capabilities can only be offset by changes to U.S. C4ISR systems, holding China's use of the electromagnetic spectrum at risk is still key in raising costs of potential aggression. As China expands outward, its military too becomes subject to many of the inherent vulnerabilities it has long intended to exploit in against the United States, including a dependent on Space, cyber, and the spectrum. While the U.S. dominance in cyber capabilities and kinetic strike are without question, it lacks a robust offering to bridge the gap between cyber, which can be unreliable, and kinetic strike, which risks escalation. Cyber effects have high opportunity costs, biasing considerations against their use any use short of conflict. Electronic warfare, whose effects remain durable and reliable through different stages of conflict, allows the United States a more granular 'ratchet' in controlling escalation and conflict short of open warfare.
- **The Strategic Support Force as a Priority Cyber Target:** The preponderance of strategic capabilities in the Strategic Support Force means that it is perhaps the critical enabling factor in China achieving military objectives in conflict, whether the scenario is counterintervention (also known as A2/AD), Taiwan invasion, or border/maritime disputes. The SSF enables long-range precision strike, domain surveillance, reconnaissance and targeting for support, and wields asymmetric capabilities in space, cyber, and electronic warfare to coerce and compel adversaries. Degrading or denying the SSF's ability to perform these missions will take the legs out from under China's military operations. U.S. Cyber Command needs to focus on developing a set of cyber effects that can decapitate or dismantle the Strategic Support Force, a centerpiece in China's 'system of systems'. However, it is worth noting that lacking a dedicated C4ISR system of its own, China's nuclear forces are wholly dependent on the SSF for reconnaissance, targeting, guidance, and support; thus any targeting of the SSF may be taken as an overt attempt to deny China's ability to defend itself against and employ nuclear weapons.

Maintaining Supremacy in Cyberspace

The United States faces a broad set of challenges with regards to China in cyberspace. Though the overall instances of Chinese hacking U.S. companies for intellectual property theft have decreased, Chinese cyber operations have largely continued unfettered, shifting objectives and finding new divisions of labor among China's various intelligence organizations. In particular, the 'economic espionage' mission has largely shifted to the Ministry of State Security, leaving the People's Liberation Army to refocus on its primary responsibilities for military espionage and cyber offense. The Strategic Support Force is the primary organization responsible for this mission, though it shares it with regional and service-level bureaus and units. The expanded force-wide cyber mission is overseen by a newly-established 'Network-Electronic Bureau', a new incarnation of the former 4PLA. We can expect that Chinese forces will be more disciplined, employ common tools, tactics, techniques, and procedures – which hampers attribution, and be more focused on fulfilling wartime military preparations.

The creation of the Strategic Support Force puts into place the last piece of China's efforts to control and shape its information security environment, a comprehensive whole-of-nation program that approaches something of a grand strategy. As the SSF works to bridge the gap between China's military capabilities

and those of the United States, its civilian agencies are undergoing a multi-year effort control information flows, physical devices, software, and internet services in the country. This is an effort to increase China's resilience and vulnerability to hostile cyber attack and politically-motivated information manipulation. The U.S. risks being asymmetrically vulnerable if Chinese attempts to develop offensive capabilities are not properly shaped or are not met with an equivalent U.S. response to shore up its own cyber resilience. The United States should focus on two efforts:

- **The U.S. Can Shape Chinese Cyber Operations:** The United States needs to start viewing its use of cyber operations – and how it responds to hostile cyber actions - largely in the context of how it may shape China's cyber policy and use of force in the domain. Despite having an identified military strategy since 1999, China's cyber forces have never truly been in a position to operationalize it, largely focused on development, impeded by bureaucratic divisions, or waylaid by an errant focus on economic espionage. The SSF effects a realignment that places the burden of developing a cohesive cyber deterrence concept and use of force policy back in the hands of national policymakers. It is likely China has not come to hard conclusions on these issues and, given the diversity and volume of current and former military voices arguing for different policy positions, we can expect that there is considerable disagreement about which course of action would be most beneficial to Chinese interests. This means that the next 10 years, the period where these policies will be formed, are particularly critical. U.S. action, and reaction, has the power to strengthen or diminish policy voices in China, set precedent, and international norms that China can thereafter abide by or exploit. The United States needs to recognize that it holds the power to shape its future potential adversary in this domain and decide how to proceed in a manner that maintains international strategic stability and preserves U.S. interests.
- **The U.S. Must Resist the "Fetish of the Offense" in Cyber Operations:** The United States needs to shift its focus towards systemic resilience and cybersecurity. Unless the United States advances the ability for both government and commercial enterprises to secure their own systems, the United States will be increasingly vulnerable in an environment where nation-states and non-state actors alike are rapidly catching up in offensive capabilities. Investment in cyber offense is not going to mitigate or protect us from these glaring vulnerabilities. 'Cyber deterrence' while conceptually useful in envisioning raising costs for conventional military operations, does not possess the reliability, demonstrability, or scale of threat inherent in nuclear weapons that would deter military operations in their entirety – nor does it negate an adversary's ability to engage in cyber operations to respond in kind. Unlike nuclear and conventional operations, offense and defense are separate battlefields – it is unlikely we will be able to use cost calculus in one to affect the other outside of the military realm. The best deterrent in this regard is emphasis on information sharing and cybersecurity, which increases costs for attackers and confounds ability for adversaries to develop effects that can deliver decisive military or strategic advantage for any given point in time. This places 'cyber readiness' for an adversary on shifting sands, subject to continuous compromises and denial, and disincentivizes cyber operations as a viable military course of action.

Note: This testimony was adapted from a forthcoming monograph on the Strategic Support Force to be published by National Defense University, written by John Costello and Joe McReynolds.