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# Chinese Perceptions of and Responses to US Conventional Military Power

Michael S. Chase, Cristina L. Garafola, and Nathan Beauchamp-Mustafaga

## ABSTRACT

Chinese analysts view the US military not only as a model for emulation but also as a serious threat given its strengths in high tech weapons and equipment, power projection, and unparalleled ability to conduct information-intensive joint combat operations. Yet they also see many of the capabilities the US military relies upon to execute these operations – most notably forward bases, space capabilities, and computer networks and information technology systems – as potentially vulnerable to disruption. Accordingly, China has developed capabilities designed to deter or counter US military intervention in areas close to China. This poses two interrelated challenges for the United States: maintaining its military advantage in an era of rapid technological change and preserving deterrence against growing Chinese ambitions in Asia.

## Introduction

It should come as no surprise that Chinese People's Liberation Army (PLA) and civilian national security analysts are keenly interested in US conventional military power. Over the past 25 years, they have devoted a tremendous amount of attention to studying the US military's technology, doctrine, organization, and operations. Chinese analysts often highlight the US military's high-tech weapons and advanced information and communications capabilities as representing a standard for a technologically advanced, professional, and operationally capable fighting force that an aspiring world-class military must strive to meet. Indeed, they admit with some regularity that they still see US defense technologies as many years ahead of their own, despite impressive improvements in China's own military technology over the past two decades.<sup>1</sup> Studying the US military in action also presents Chinese analysts with a valuable opportunity to deepen their understanding of modern combat operations, which they see as increasingly centered on the struggle for information dominance and the ability to successfully conduct joint operations that integrate the capabilities of each service. They also believe the United States is determined to continue to maintain its technological edge, and will strive to increase this edge in the future despite budget constraints or other challenges.

Equally important, they hold the United States as the country most able and likely to challenge China's ambitions, or in other words, China's greatest threat. These two factors have contributed to a Chinese military that studies its US counterpart both as a benchmark for military modernization and as a specific adversary against which to develop its own military capabilities. Chinese analysts see the regional bases, space systems, and computer networks that support American conventional military power as potentially vulnerable to interdiction by assets such as conventional ballistic and cruise missiles, anti-satellite weapons, and computer network attack capabilities. These perceptions of the strengths and weaknesses of US conventional military power have played a key role in shaping China's military modernization agenda, as have the PLA's requirements to accomplish a specific set of missions, and its assessments of the ability of the United States to intervene in ways that could threaten its ability to do so.

The PLA has benefited greatly from modernizing based on the US military's track record, providing a clear path forward for efficient spending to maximize returns on a stronger military. However, with the Chinese military's steady progress on closing this "gap" with the United States, it will begin to face the challenges of modernizing based on its own vision. China will have to ascertain the next major advances in the nature of modern war, project the direction of the US military, and develop its own next-generation military hardware and doctrine through trial and error. How China's military and civilian leadership handle these challenges will be among the most important determinants of the PLA's ability to serve China's national security interests in an era of slowing economic growth and increased security competition in Asia.

### Strategic context for Chinese learning efforts

This section examines the broader strategic context for Chinese efforts to learn from the US military and develop weapons to counter it. It assesses both the internal and external motivations for China's view of the United States as the pacing threat, including Chinese strategic threat perceptions. Historical references by Sun Tzu and Clausewitz, both closely studied by China, address the nature of military learning in their treaties on warfare.<sup>2</sup> As one scholar summarized, Clausewitz describes three methods for military learning – "historical examples (of self and others), personal battlefield experience, and the experience of other armies."<sup>3</sup> Given that China's last major combat operations occurred in 1979 during a relatively brief war with Vietnam, when seeking to learn about modern warfighting, China currently looks most to the experience of other armies, most notably the United States.<sup>4</sup>

China, like most countries, has a military that is tasked with national defense and is seeking to strengthen its defense capabilities. China's most recent defense white paper, *China's Military Strategy*, published in 2015, states that, "building a strong national defense and powerful armed forces is a strategic task of China's modernization drive and a security guarantee for China's peaceful development."<sup>5</sup> Recognizing "China's national strategic goal is to complete the building of a moderately prosperous society...and the building of a modern socialist country," by 2021 and 2049 respectively, "new requirements have been raised for innovative development of China's military strategy and the accomplishment of military missions and tasks." The "period of strategic opportunity" for economic growth must not be jeopardized by conflict, but at the same time the country must "build a strong military for the new situation...[and] accelerate the modernization of national defense and armed forces."<sup>6</sup>

As China's interests grow, the Chinese Communist Party (CCP) has tasked the PLA with an expanding set of missions, many of which potentially involve US intervention. The PLA must "effectively safeguard the sovereignty and security of China's territorial land, air and sea; [...] resolutely safeguard the unification of the motherland; [...] safeguard China's security and interests in new domains."<sup>7</sup> In essence, this includes enforcing China's territorial claims, including the Diaoyu/Senkaku Islands in the East China Sea and the Paracel and Spratly Islands in the South China Sea, as well as preparing for the forceful reunification of Taiwan. As the United States has security relationships with several of China's rival claimants, namely alliances with Japan and the Philippines and a responsibility to defend Taiwan, this requires that the PLA prepare for a conflict with the United States to ensure it fulfills its responsibility to defend Chinese claims in East Asia. As Larry Wortzel describes, "it is the power of the United States, and the potential to use that power to coerce or dominate China and its interests, that requires the PLA to follow US military developments more carefully than those of other nations."<sup>8</sup> Indeed, "an awareness that the two countries could clash in the event of a Chinese attack on Taiwan is enough to drive PLA modernization."<sup>9</sup> China's increasingly global economic interests and great power ambitions also drive latent security competition with the United States. The PLA is responsible for "[safeguarding] the security of China's overseas interests,"<sup>10</sup> which includes "energy and resources, strategic sea lines of communication (SLOCs), as well as institutions, personnel and assets abroad."<sup>11</sup> This requires "the PLA Navy

(PLAN) [to] gradually shift its focus from ‘offshore waters defense’ to the combination of ‘offshore waters defense’ with ‘open seas protection.’” Retired Rear Admiral Michael McDevitt concludes that this means “US authorities can no longer assume unencumbered freedom to posture US naval forces off Middle East and East African hotspots if Chinese interests are involved and differ from Washington’s.”<sup>12</sup> Indeed, the PLA is slowly preparing for a more global presence, and that drives a need for greater capabilities vis-à-vis the United States.

The PLA’s status as a party army, not a national army, also imbues the PLA’s modernization drive with domestic political considerations. As the CCP draws on nationalism and pride in progress towards national rejuvenation in the face of slowing economic growth, a stronger army signals China’s national power to domestic audiences at the same time that it facilitates greater efforts to secure Chinese territorial claims vis-à-vis smaller claimants.<sup>13</sup> Developing capabilities that are explicitly geared toward a prominent enemy, such as the DF-26 “Guam killer” intermediate-range ballistic missile, also provide a means of demonstrating China’s growing military technological prowess to a domestic audience.<sup>14</sup>

Externally, China is motivated by a fear of US military power and the likelihood that it will be involved in future conflicts. China views the Sino-US relationship as its most important bilateral relationship and believes a stable relationship with the United States is essential to maintain regional stability, which it needs to continue to focus on economic development. Avoiding a costly and destabilizing confrontation with the United States appears to be one of the central goals of the “new type of great power relationship” Beijing has proposed as a guiding concept to shape US-China ties.<sup>15</sup> At the same time, however, Beijing sees the United States as the greatest potential threat to its core national security objectives, a perspective that is informed not only by its perception that the United States is determined to prevent China’s rise from challenging its position but also by China’s interpretation of a number of specific incidents, such as the May 1999 accidental bombing of the Chinese Embassy in Belgrade by the United States.

At a broad level, Chinese analysts are highly suspicious of US intentions toward China. Many Chinese civilian and military national security analysts suspect that the United States is attempting to “contain” China, or to otherwise check China’s rise. According to Timothy Heath, a senior China analyst at the RAND Corporation who previously worked for US Pacific Command’s (PACOM) China Strategic Focus Group, “the fear of a US ambition to contain China is deep and pervasive.”<sup>16</sup> Indeed, Chinese analysts have harbored serious suspicions about US strategic intentions for decades, but their concerns appear to have intensified over the past several years.<sup>17</sup> For example, China’s 2010 defense white paper warned that “suspicion about China, interference and countering moves against China from the outside are on the increase.”<sup>18</sup> Similarly, China’s 2015 defense white paper echoes the judgment that the external security environment is “generally favorable,” and adds that China “will remain in an important period of strategic opportunities for its development, a period in which much can be achieved.” Yet it also highlights “new threats from hegemonism, power politics and neo-interventionism,” warns that “international competition for the redistribution of power, rights and interests is tending to intensify,” and notes that China “still faces multiple and complex security threats, as well as increasing external impediments and challenges.”<sup>19</sup>

The US policy of “rebalancing” to Asia is clearly a source of concern for Chinese observers, one that intensifies their concerns about what they see as US determination to constrain China’s power. The 2015 defense white paper elaborates on these long-standing Chinese concerns, stating: “as the world economic and strategic center of gravity is shifting ever more rapidly to the Asia-Pacific region, the US carries on its ‘rebalancing’ strategy and enhances its military presence and its military alliances in this region.” In addition, the white paper contends that “some external countries are also busy meddling in South China Sea affairs; a tiny few maintain constant close-in air and sea surveillance and reconnaissance against China. It is thus a long-standing task for China to safeguard its maritime rights and interests.”<sup>20</sup>

Furthermore, some Chinese observers are convinced that the United States is bent on subverting China’s political system domestically. Even many Chinese scholars and officials who hold more

nuanced views of US policy toward China are wary of US strategic intentions.<sup>21</sup> Many believe that even if the United States does not intend to contain China, Washington is concerned about the implications of China's rising power and it is determined to prevent China's growing clout from threatening American interests.<sup>22</sup> Lastly, many Chinese national security analysts also view the US military's development of "Air-Sea Battle" as aimed squarely at China.<sup>23</sup>

Although some Chinese analysts raise doubts about the ability of the United States to sustain its focus on Asia given its contentious partisan politics, budget difficulties, and competing priorities in other parts of the world, there appears to be a relatively broad consensus that the United States represents the most serious external threat to Chinese interests. Moreover, as Heath observes, from a Chinese perspective, "the growing competition between China and the United States, manifest in friction points across policy topics from cyber to the South China Sea, and in the US decision to adopt the rebalance itself, makes this threat all the more real and pressing."<sup>24</sup> This in turn underscores the importance of analyzing US military operations, assessing the current strengths and weaknesses of US conventional military forces, and projecting future developments in US capabilities.

China's military modernization drive has been long and halting. In one account of China's foreign military learning, David Lai documents three failed attempts for Chinese military modernization over the last 150 years of contemporary Chinese history, with the only successful effort being the current effort discussed herein. As one Chinese analyst asserted, "an opportunity not seen in a hundred years is unfolding in its early stage, [and] failing to catch the opportunity could put China another generation behind the Western powers. China must act."<sup>25</sup> As Lai explains, "for well over a century, the Chinese have been learning from the outside world to modernize China's military machine," but now "Chinese leaders have once again found themselves in a situation that their forbearers faced more than a century ago: they have to learn from their enemies to improve China's military machine."<sup>26</sup>

Focusing on the United States has provided an ideal template for PLA modernization. According to Lai, "many PLA officers agree that learning the 'smart things' from the US military helps the PLA to 'get more with less investment' and learning from US mistakes helps the PLA avoid roundabout courses and move faster in the transformation."<sup>27</sup> China has benefited greatly from this "shortcut" approach, not only by avoiding US missteps, but also by targeting well-known US weaknesses as it develops its own capabilities.

At least one Chinese professional military education (PME) text describes a specific process for the PLA to learn from and incorporate foreign military innovations into its modernization process. *Armed Forces Building Systems Analysis* depicts a framework, excerpted in [Table 1](#), on how to develop requirements based on notional insights or lessons learned.

China's efforts to tailor its military modernization to perceived US weaknesses is best known for its development of anti-access area-denial (A2/AD) capabilities, but the following sections will address the comprehensive approach the PLA has taken to study, adopt, adapt, and employ US military advances for its own purposes.

## Chinese lessons learned from US conventional military operations

This section presents a brief overview of Chinese assessments of US conventional operations from the late 1980s to the present, including major US military operations in the 1991 Gulf War, Kosovo, Afghanistan, and Iraq, as well as relatively small-scale, strike-focused operations in Libya and Iraq. China has analyzed US military operations not only to better understand the US military's strengths and weaknesses but also to increase its own understanding of the characteristics of contemporary military conflicts and derive lessons that it can apply to modernizing the PLA and improving its training. [Table 2](#) presents a summary of US strengths in conducting these operations as portrayed by a number of key Chinese PME texts published between 2000 and 2013. This summary is not meant to be exhaustive with respect to topics studied by PLA analysts, particularly at the operational or

**Table 1.** One framework for adapting to notional insights from modern warfare.

#	Insight gained	"Direct" requirements		"Indirect" or derived requirements	
		Requirement	Time horizon	Requirement	Time horizon
1.	Stealth is becoming one of the main trends of development in future Air Force and Navy aircraft	1. Indigenously develop and produce stealth aircraft in our military; and 2. Purchase stealth aircraft from overseas.	5 years 2 years	1. Develop multi-base radar systems 2. Increase military expenditure 3. Explore fighting methods in fighting stealth aircraft; and 4. Develop new-model air defense and surface-to-air missiles	2 years 1 year 2 years 3 years
2.	Requirements for future air-defense operations put forward by air raid operations in the Kosovo War	1. Develop new-model fighters; 2. Develop new-model air-defense missiles; and 3. Develop electronic warfare equipment	8 years 5 years 4 years	1. Enhance the construction of civilian air-defense systems; 2. Enhance the construction of reconnaissance early-warning systems; and 3. Enhance the building of means of long-range precision attack	3 years 3 years 5 years

Source: Li Jing, *Armed Forces Building Systems Analysis [in Chinese]* (Beijing, China: National Defense University Press, March 2004), pp. 92–93.

**Table 2.** Chinese PME discussion of US warfighting strengths, 1986–2011.

US Attribute/Conflict (Year)	Libya (1986)	Gulf War (1990–91)	Desert Fox (1998)	Kosovo (1998–99)	Afghanistan (2001 focus)	Iraq War (2003 focus)	Libya (2011)
<i>Foundational enablers</i>							
high-tech weapon systems and platforms	x	x	x	x	x	x	x
joint warfighting operations	x	x		x	x	x	
advanced command, control, and communications (C3) system	x	x	x	x	x	x	
high-quality or well-trained personnel		x		x	x	x	
<i>Offensive tactical strikes</i>							
initial strikes to "decapitate" or "paralyze" enemy leadership, broader C2, and IADS	x	x	x	x	x	x	
use of precision-guided munitions (PGMs)	x	x	x	x	x	x	x
"non-contact" operations	x	x	x	x	x	x	x
<i>Global, flexible, and adaptive support</i>							
theater-level ISR operations		x	x	x	x	x	
reliance on geographically proximate allies for basing access or other resources		x		x		x	
reliance on logistics flows from overseas or long distances		x		x	x	x	
<i>Relentless operational tempo or other psychological effects</i>							
psychological operations		x		x		x	
night, "constant," or 24-hour operations	x	x	x	x	x	x	
"surprise" attacks	x			x		x	

Sources: Military Training Department of the General Staff of the Chinese People's Liberation Army, *Research into the Kosovo War [in Chinese]* (Beijing, China: Liberation Army Publishing House, 2000); Peng Guangqian and Yao Youzhi, eds., *The Science of Military Strategy [in Chinese]* (Beijing, China: Military Science Press, 2001); Wang Yongming, Liu Xiaoli, and Xiao Yunhua, *Research into the Iraq War [in Chinese]* (Beijing, China: Liberation Army Publishing House, March 2003); Xu Guocheng, Feng Liang, and Zhou Zhenfeng, eds., *Study of Joint Campaigns [in Chinese]* (Beijing, China: Yellow River Press, February 2004); *Armed Forces Building Systems Analysis*; Peng Guangqian and Yao Youzhi, eds., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2005); Cao Zhangrong, Wu Runbo, and Xun Jianjun, eds., *Informatized Joint Operations [in Chinese]* (Beijing, China: Liberation Army Publishing House, 2006); Zhang Yuliang, ed., *The Science of Military Campaigns [in Chinese]*, 2nd ed. (Beijing, China: National Defense University Press, 2006); PLA Academy of Military Science Military Strategy Research Department, ed., *The Science of Military Strategy [in Chinese]* (Beijing, China: Military Science Press, 2013).

tactical levels, but rather to highlight broad themes as we explore how these assessments have informed responses to the contemporary use of US military power.



The main takeaway in these PME texts is an observation of the US military's experience – and proficiency – in employing advanced command, control, and communications (C3) systems, theater-level intelligence, surveillance and reconnaissance (ISR) systems, and high-tech weapon systems such as precision-guided munitions (PGMs) to conduct sophisticated joint warfighting operations, often-times involving “non-contact” (非接触) operations. The First Gulf War in 1991 was perhaps the most important US military operation in terms of lessons learned for Chinese military strategists. *The Science of Military Campaigns* notes, for example, that following the Gulf War, the concept of the “joint air raid” developed into “joint participation of the Air Force, Navy, Army and missile force-units using various types of weapons and equipment (including various space systems) and operational strengths...the large joint air raid of air, ground, sea, space in the modern offensive operation will become the basic mode of air raids.”<sup>28</sup> For Beijing, the Gulf War also underscored the implications of major changes in the nature of modern warfare for the PLA. In 1993, in part as a result of its assessments of the changes that were thrown into sharp relief, China issued a new set of military strategic guidelines (军事战略方针) to provide guidance and direction for PLA modernization.<sup>29</sup> Subsequently, Washington's involvement in the 1995–96 Taiwan Strait Crisis highlighted the potential for US military intervention in a regional conflict.

However, it was US intervention in Kosovo in 1999 that seems to have had the deepest impact on PLA thinking about US strategy and US conventional military power. First, US air operations in Kosovo offered another opportunity for the PLA to study US military strengths and weaknesses. For many, the Kosovo campaign represented an impressive display of US airpower, and Chinese assessments portray these and other air-to-surface strikes as efforts to “decapitate” or “paralyze” enemy leadership, command and control systems, and integrated air defense systems (IADS). One recent Chinese publication notes that “even though the Federal Republic of Yugoslavia's (FRY) ground vital forces did not suffer a serious setback, their function as superiority in the FRY operational system of systems was completely limited, deprived, and rendered useless” by American attacks.<sup>30</sup>

Second, the accidental bombing of the Chinese Embassy in Belgrade during the Kosovo campaign in May 1999 – which virtually all PLA and civilian national security analysts in China believe was deliberate – motivated China to devote even greater resources to improving the PLA's capabilities, particularly by focusing on asymmetric approaches to exploiting potential US military vulnerabilities and developing “assassin's mace” weapons to deter US military intervention in any conflict involving China.<sup>31</sup>

Chinese analysts have also devoted a considerable amount of attention to analyzing US military operations in the Second Gulf War, with a heavy focus on the US invasion of Iraq as part of Operation IRAQI FREEDOM (OIF) in 2003. Notwithstanding the serious counter-insurgency challenges the United States faced in Iraq, they see this case as demonstrating major improvements in US military capabilities since the 1991 Gulf War, particularly in the areas of joint operations and use of information and communications technology to dominate the battlefield.<sup>32</sup> In this and other conflicts, Chinese PME texts note US operations to overwhelm opponents' defensive capabilities by conducting night, “constant,” or 24-hour operations, as well as by conducting psychological operations and surprise attacks (奇袭). For example, Chinese strategists assessed that during the Iraq War, the United States excelled at employing its long-range conventional strike capabilities in ways that were designed to maximize their psychological impact on the enemy's military forces, population, and leadership. According to the 2013 edition of *Science of Military Strategy*, “the United States carried out its ‘rapid dominance’ and ‘shock and awe’ philosophies, using methods such as sudden strikes, heavy assaults, saturation attacks and suppressive fire, and round-the-clock air raids. This created a powerful, overwhelming shock on the Iraqi side.”<sup>33</sup>

Chinese military analysts additionally assessed the United States displayed its formidable skills in the area of psychological operations. The same text highlights the 2003 Iraq invasion as a prime example of what it characterizes as a very effective US approach. According to the authors, the United States “implemented high-intensity psychological deterrence, flaunting the efficiency of new armaments, intentionally ‘leaking’ strategies and tactics, carrying out strategic and tactical deception

throughout the entire course of operations, and selectively permitting media outlets to participate during the course of the war.”<sup>34</sup>

China has also paid close attention to US operations in Afghanistan, with a heavy focus on Operation ENDURING FREEDOM (OEF), which the United States launched in response to the September 11, 2001 terrorist attacks on the United States. Although less directly relevant to China’s overall assessment of US capabilities to intervene in a regional crisis or conflict, it should be noted that these Chinese assessments have also included Chinese analysis of US counterinsurgency operations in Afghanistan.<sup>35</sup> Finally, in recent years, Chinese analysts have closely observed the capabilities and operations of PACOM, including its participation in military exercises, humanitarian assistance and disaster relief activities, and military diplomacy and outreach and engagement within the region.<sup>36</sup>

In addition to the observations already stated in the case studies above, two additional topics are worth highlighting. First, the PLA notes the need for high-quality or well-trained personnel. One PME text observed that in the Gulf War, “technical support personnel made up nearly half of the US forces involved...the quality of technical maintenance directly impacts the performance of the weapons and equipment, and furthermore, and therefore the success or failure of strategic operations.”<sup>37</sup> *Armed Forces Building Systems Analysis* argues that “the reason why the US Air Force could have an outstanding performance in Kosovo and Afghanistan was inseparable from possessing a highly-qualified rank-and-file soldier force.” The authors argue that foreign militaries “cultivate military talent” by “relying on the strength of public education” and “the superiority of military academies and schools.” Since the battlefield of the future will be shaped by soldiers’ knowledge and talent, without knowledgeable or skillful troops, “it will be difficult to build modernized armed forces, and also difficult to triumph over and possess the enemy with high-tech superiority.”<sup>38</sup>

Second, Chinese PME texts note that the United States’ ability to rely on nearby allies for basing access or other resources and well as its ability to manage logistics flow from overseas. One source muses that “modern warfare is not just fighting a military battle; it is also a fighting an economic battle.”<sup>39</sup> A lessons learned report on the Kosovo War highlighted US use of pre-positioned stocks and “floating warehouses” of ship-based materiel as well as logistical support from allies’ bases.<sup>40</sup> In contrast, the authors note that Russian convoys to Yugoslavia were detained by neighboring Hungary, and other neighbors permitted NATO basing within their borders, improving NATO’s ability to surround Yugoslavia and thereby worsening the country’s plight.<sup>41</sup>

## Chinese assessments of and responses to current US conventional military power

This section examines Chinese assessments of contemporary US conventional military power, including Chinese views on the main strengths and weaknesses of the US military. It focuses on those areas that have the greatest potential relevance to Chinese interests – US air and naval power, US space and cyberspace capabilities, and the US military’s network of regional bases.<sup>42</sup> This section then addresses how China has incorporated these lessons into its military modernization as responses to US capabilities.

Given the threat US military intervention could pose to the PLA’s ability to achieve its objectives in a regional conflict, it should come as no surprise that China’s response to this problem has involved modernizing its military capabilities, with an emphasis on developing “counter-intervention” capabilities to deter US military intervention, or if that fails, to ensure that US involvement does not prevent the PLA from accomplishing its goals. As Timothy Heath and Andrew S. Erickson argue, these capabilities were developed as a coherent set targeted at perceived US weaknesses. They assert that “the evidence likewise leaves little doubt that Beijing is developing a broad range of capabilities aimed at deterring – or if necessary, defeating – US intervention in any conflict involving China.”<sup>43</sup> Although nuclear deterrence is still seen as absolutely essential to China’s national security, Chinese military publications like the 2013 edition of *The Science of Military Strategy* emphasize the



growing contribution of technologically advanced conventional forces to China's overall strategic deterrence posture.<sup>44</sup> Moreover, if deterrence fails, these conventional "counter-intervention" capabilities are intended to ensure that US conventional forces will be unable to prevent China from achieving its military and political objectives in a regional conflict.

Chinese military modernization has already resulted in major improvements in some of the PLA's operational capabilities that are targeted specifically at perceived key US vulnerabilities. According to Under Secretary of Defense Frank Kendall in 2015, "the US [is] being challenged at an unprecedented rate," as China has "developed [capabilities] very consciously to defeat the American way of projecting power," including "missiles, [...] electronic warfare capabilities, [...] anti-satellite capabilities and a spectrum of things to defeat our space systems."<sup>45</sup> These advances include a wide range of advances in China's capabilities for "counter-intervention" operations, which US analysts generally refer to as A2/AD capabilities.

For example, Chinese assessments of US air power recognize its key strengths, though they also see it as beset with certain vulnerabilities. For Chinese observers, the US Air Force (USAF) represents a model for at least some aspects of the PLA Air Force's (PLAAF) transformation into what Chinese analysts refer to as a "strategic air force," one that is capable of performing a broad range of missions that go beyond its traditional focus on territorial air defense. For example, two Chinese contributors to a volume on the PLAAF's quest to become a "strategic air force" explicitly highlight the USAF as an inspiration for the development of China's own air and space capabilities, including in areas such as stealth aircraft, unmanned systems, information technology, airborne warning and control, early warning systems, and strategic transport capability.<sup>46</sup>

What Chinese defense analysts tend to emphasize more strongly, however, is not the USAF as a model for emulation but the USAF as a serious threat to China's own conventional military power. Indeed, many Chinese assessments suggest that air power is one of the key factors that would make the US military an extremely challenging potential opponent for China in the event of US intervention in a conflict between China and another country in the region. Chinese analysts also highlight the US military's reliance on regional bases, such as those it maintains in Japan and Guam, recognizing the importance of US military bases to project US air and naval forces essential to the US ability to fight a war in the area, and as a vulnerability that the PLA can exploit in the event of a conflict. One PME text argues that the PLA should seek "an advantage in timing...to weaken our enemy's air strike ability." The text continues: "When our future enemy decides to perform a massive air strike on us, there is a chance... [they] will ask for support from military allies around us," including by deploying troops at regional air bases. "We have to coordinate our troops to counter-attack selected important targets so that we can maximize the damage to our enemy's air strike system."<sup>47</sup>

Given this reliance on regional air and naval bases, deep inventories of long-range and accurate land-attack missiles could stymie US operations in the event of a conflict. In recent years, China has invested substantial resources in the development of conventional cruise and ballistic missiles to strike targets like US military bases in the region.<sup>48</sup> According to the Department of Defense's (DoD) 2014 report on China's military power, "the development of China's conventionally armed missiles has been rapid, even in the context of overall Chinese military modernization." In the mid-2000s, China had only a few hundred short-range ballistic missiles (SRBMs), and "effectively...no capability to strike many other locations in or beyond the first island chain (such as US bases in Okinawa or Guam)."<sup>49</sup> The 2016 edition of the report notes that today, China has approximately 1,200 SRBMs in addition to conventional MRBMs, IRBMs, and ground-launched and air-launched land-attack cruise missile.<sup>50</sup> Moreover, the Defense Department notes that improvements in the accuracy of Chinese missiles enable better targeting of base logistics facilities and other infrastructure, while special operations forces and Chinese cyber warfare capabilities could also contribute to degrading operations at regional bases.<sup>51</sup>

In addition, China has sought to level the air-to-air playing field with the development of modern fighters, particularly stealth aircraft. Indeed, China is investing considerable resources in the

domestic development of advanced fighters, including the test flights of the J-20 stealth fighter in January 2011 and the J-31 in October 2012.<sup>52</sup> This should come as no surprise, as for many years Chinese strategists have argued that the PLAAF must not only improve its ability to defend against attacks by enemy stealth aircraft but also develop its own stealth airplanes as quickly as possible, and US stealth aircraft capabilities appear to be a key inspiration for these developments. China has also invested in foreign surface-to-air missile systems and developed indigenous variants with ranges greater than 100 kilometers to guard against air strikes in its periphery and over Chinese territory. Lastly, China is reportedly developing counter-stealth technology.<sup>53</sup>

Chinese assessments of US naval power generally, and specifically aircraft carriers, emphasize the unparalleled power projection capabilities they provide to the United States, yet they also highlight what they see as potential vulnerabilities. For example, China has developed and started to deploy anti-ship ballistic missiles (ASBMs) to hold US aircraft carriers at bay.<sup>54</sup> US capabilities for undersea warfare are also of great interest to Chinese observers, particularly submarines.<sup>55</sup> In all, Chinese military analysts see the US Navy's submarine force as the world's most technologically advanced and operationally capable submarine force. According to one study, "China aspires to be a submarine power and hopes to emulate certain aspects of American experience. However, it is equally clear in these writings that the US submarine force is seen as a key challenge in any military confrontation between Beijing and Washington."<sup>56</sup> In particular, Chinese observers assess that American submarines are highly stealthy. This makes them an extremely serious threat to China's military, particularly given its relative weakness in anti-submarine warfare (ASW) capabilities. However, recent reports indicate that China has begun to augment its aerial, surface, and undersea ASW capabilities with new weapon systems and platforms.<sup>57</sup>

Chinese analysts perceive US space and cyberspace capabilities as serious threats to Chinese interests as well. China clearly views the United States as the world's most advanced military space power. For example, China's 2013 defense white paper makes what appears to be a thinly veiled reference to US space and cyber warfare capabilities. According to the white paper, "major powers are vigorously developing new and more sophisticated military technologies so as to ensure that they can maintain strategic superiorities in international competition in such areas as outer space and cyber space."<sup>58</sup> The 2013 edition of *The Science of Military Strategy* characterizes the United States as "the strongest space power in the world," and adds that it "has been consolidating its position of space superiority and trying to widen the gap that separates it from other countries, in order to effectively control space."<sup>59</sup> Indeed, Chinese military publications frequently highlight the US military's unparalleled ability to use space for important force enhancement missions such as ISR, communications, early warning, and navigation and positioning as among its most important strengths. They also appear to believe that the United States maintains or is developing formidable space control capabilities, including anti-satellite (ASAT) weapons, and seeks not only to protect its own space systems but also to deny the use of space to an adversary in the event of a military conflict with another major power. Indeed, a review of Chinese writings on military space operations indicates that Chinese strategists see US space policy as inherently threatening to China's interests because of its emphasis on space dominance.<sup>60</sup> China's assessment of the importance of space and information dominance, and its analysis of US dependence on potentially vulnerable space systems and computer networks, have also motivated Beijing's development of space and cyber warfare capabilities.<sup>61</sup>

As a result, according to the 2014 DoD report on Chinese military developments, "China is investing in military programs and weapons designed to improve extended-range power projection and operations in emerging domains such as cyberspace, space, and electronic warfare."<sup>62</sup> In particular, China is developing an impressive array of counter-space systems. Indeed, China is developing a broad range of space control capabilities in addition to the direct ascent ASAT weapon it successfully tested in January 2007, which demonstrated its ability to destroy satellites in low-earth orbit. As the DoD reports, "China is developing a multi-dimensional program to improve its

capabilities to limit or prevent the use of space-based assets by adversaries during times of crisis or conflict.”<sup>63</sup>

Similarly, Chinese military authors see the United States as the world’s most cutting edge cyber warfare power, and they believe this presents serious challenges to Chinese interests in cyberspace. Notwithstanding widespread Chinese cyber espionage activities such as computer network intrusions and theft of intellectual property, many Chinese military officers and security analysts clearly believe it is the US military that has the upper hand in this cyberspace struggle and is an unparalleled threat, not the PLA. For example, according to the 2013 edition of *The Science of Military Strategy*, in comparison with China’s “main strategic adversary,” almost certainly a reference to the United States, China still occupies a decidedly inferior position in the realm of “network confrontation.”<sup>64</sup> China’s pursuit of quantum technology is one effort to diminish this US advantage. In August 2016, China launched a quantum satellite to experiment with secure, long-distance communications characterized as “hack-proof” by Chinese media.<sup>65</sup>

PLA publications indicate that China still has a long way to go in its quest to develop a more advanced military capable of protecting Chinese interests. Articles in official PLA newspapers often highlight the PLA’s shortcomings by referring to gaps between the PLA’s actual capabilities and its requirements.<sup>66</sup> For example, the PLA is working to recruit and retain enlisted personnel, NCOs, and officers needed to operate increasingly sophisticated weapon systems and platforms, as well as increasingly coordinate operations with other branches and services across the PLA. One Chinese PME text notes that decreasing a military’s size by reducing total personnel can contribute to realizing the improvements in troops’ “quality” required for modern high-technology warfare.<sup>67</sup>

### Chinese assessments and responses to future US conventional military power

Even as China’s 25-year modernization drive begins to bear fruit, with the military increasingly able to challenge its US counterpart in waters near Chinese shores, the PLA remains concerned about catching up to the US military. Given China’s assessment of the United States as a potential strategic threat, its recognition that the United States remains the world’s foremost conventional military power and its keen interest in US military strengths and weaknesses, it should come as no surprise that Chinese analysts spend a considerable amount of time evaluating a wide range of advanced conventional military capabilities the United States is developing or may choose to pursue in the future. This section reviews Chinese assessments of future US conventional military capabilities and addresses the Chinese military’s efforts to continue modernization through innovation as it closes the gap with the United States. Chinese analysts ultimately believe the technological gap is closing with the United States, though lack of real world fighting experience means personnel training and operations proficiency will still lag the United States for some time. Yet in order to overtake the United States as the world’s strongest military, the PLA will be required to move beyond using it as the model for its reforms.

As discussed above, one key area of interest for Chinese analysts is Washington’s development of “Air-Sea Battle,” an operational concept for responding to A2/AD threats. Indeed, PLA officers have published a number of assessments of “Air-Sea Battle” in recent years, including several articles in *Foreign Military Arts* (外国军事学术), a Chinese military journal devoted to assessments of foreign military developments.<sup>68</sup> Moreover, many Chinese observers see “Air-Sea Battle” as aimed primarily at countering China’s growing military power. For example, according to the 2013 edition of *The Science of Military Strategy*, the “Air-Sea Battle” concept envisions the Western Pacific as the main battlefield and views China as the US military’s principal opponent in a future conflict.<sup>69</sup> Chinese analysts are clearly concerned about the potential implications of this new operational concept, but some have raised doubts about Washington’s ability to fund the new capabilities it envisions. Chinese military researchers have also followed debates among US analysts pitting “Air-Sea Battle” against “offshore control” and related approaches that call for a distant blockade designed to maximize economic pressure on China.<sup>70</sup> Additionally, at least one well-known analyst, Li Jie of

the PLA Navy Research Institute, has opined that the greatest danger to China's military would arise from an approach that combines elements of both approaches. According to Li, "the variation and combination of the two theories will generate more complex situations than a single theory does, and will bring an even more negative effect to the Chinese navy."<sup>71</sup>

Chinese analysts also devote careful attention to specific US military capabilities that are under development or undergoing testing. For example, Chinese military and civilian analysts closely follow the discussion and debate surrounding US development of conventional prompt global strike (CPGS) capabilities.<sup>72</sup> Chinese military publications indicate that PLA analysts view CGPS as a potential threat not only to Chinese conventional forces but also to the credibility of China's nuclear deterrent. According to the 2013 edition of *The Science of Military Strategy*, this is one of several factors that makes China's nuclear security situation "increasingly complex." Specifically, according to that volume, "once [US CGPS] has functional capabilities, if used to launch conventional strikes against China's nuclear missile forces, this could force China into a passive position and greatly influence China's nuclear counterstrike capabilities and weaken our nuclear deterrent effectiveness."<sup>73</sup> In particular, Chinese analysts are concerned that the combination of US missile defense and CGPS capabilities could degrade the effectiveness of China's nuclear deterrent in ways that would leave China vulnerable to US nuclear coercion.<sup>74</sup>

Chinese military publications also highlight concerns about other ways in which the United States seeks to maintain or even expand its military technological lead, most recently with the Third Offset strategy. According to the 2013 edition of *The Science of Military Strategy*, "over the past few years, Western military powers have been working hard to develop new deterrence resources, such as informatized conventional deterrence, outer space deterrence, and information deterrence."<sup>75</sup> Chinese military analysts clearly view the United States as the country that is at the forefront of these trends. As the 2013 edition of *The Science of Military Strategy* puts it, "at the same time as [the United States] seeks to consolidate and expand its conventional military superiority, it is also making great efforts to develop its space and cyber warfare capabilities, as well as other new types of combat power."<sup>76</sup> The US Defense Innovation Initiative, announced in November 2014 by then-Secretary of Defense Chuck Hagel, aims to "ensure that [the United States does] not lose the military-technological superiority that [it has] long taken for granted."<sup>77</sup> This drive for the Third Offset includes "a new long-range research and development planning program [that] will identify, develop, and field breakthrough technologies and systems that sustain and advance the capability of US military power." Peter Wood notes that, "Chinese academics and military practitioners are closely watching the 'Third Offset' and considering how to recalibrate China's own modernization plans in response."<sup>78</sup>

In turn, China has accelerated the pace of (and publicity surrounding) its modernization by developing some new military systems in step with the United States, most notably a long-range bomber and hypersonic vehicle. The US military has long considered building a new long-range strategic bomber program, dating back to the mid-2000s.<sup>79</sup> However, the program only awarded a contract for development in October 2015.<sup>80</sup> Yet less than one year later, PLAAF commander Ma Xiaotian publicly confirmed that China is "now developing a next generation, long-range strike bomber that you will see sometime in the future."<sup>81</sup> While rumors had been circling of such a program for several years, the reveal caught western analysts by surprise.<sup>82</sup> Additionally, the development of the Wu-14 hypersonic glide vehicle (HGV) has kept pace with the United States; the Wu-14 was first tested in 2014, only four years behind its US counterpart, and has undergone additional tests through 2016.<sup>83</sup>

Moreover, China has recently demonstrated some ability to develop advanced technologies ahead of the United States. Remarking on China's recent progress ahead of US capabilities, Under Secretary of Defense Kendall told the US Congress that, "the Chinese...are going beyond what we have done. They are making advances beyond what we currently have fielded."<sup>84</sup> China's August 2016 launch of its first quantum satellite, which is intended to provide secure communications, has led analysts to say that, "it is very likely that China is going to win...the race to produce a quantum satellite."<sup>85</sup> As

two analysts explained, “the Chinese government is aware that they are growing particularly susceptible to electronic espionage,” and this is driving its innovation.<sup>86</sup> The analysts noted that, “these technologies could neutralize the technological advantages associated with today’s information-centric ways of war, epitomized by the US model.” Indeed, “the successful development of even one or two of these quantum technologies might ultimately enable an ‘offset’ of [China’s] own, which could decisively change the future strategic balance.”<sup>87</sup>

Nonetheless, some Chinese analysts have expressed doubts about the ability of the United States to sustain a defense budget sufficient to fund its modernization priorities, and Chinese analysts follow US defense budget developments very closely.<sup>88</sup> Even in areas where Chinese analysts typically see the United States as having major advantages in technology and operational capability, they sometimes suggest that the United States will see its edge diminish as a result of tighter budgets. For example, some Chinese analysts expect the inventory of US submarines will decline because of budget constraints.<sup>89</sup> Chinese analysts have also raised questions about whether the United States will be able to maintain focus on the Asia-Pacific region when it is faced with so many problems in other parts of the world.

### How do Chinese assessments and capability development match up to operational requirements?

Although the PLA discusses dozens of different types of campaigns that could apply to one or more of these conflict scenarios in its professional military literature, this article focuses only on the subset of those campaigns that appear to be most closely related to scenarios in which US conventional military intervention is most plausible and could potentially directly threaten the PLA’s ability to achieve the CCP’s objectives. Consequently, Chinese military publications make it clear that in many of the scenarios that might involve execution of one or more of these campaigns, in order to achieve its objectives, the PLA must be prepared to deter or, if necessary, counter US military intervention.

These include the following PLA campaigns: First, a *conventional missile attack campaign* would involve a “series of conventional missile attacks” aimed at the enemy’s “important targets.”<sup>90</sup> The PLA Rocket Force (PLARF) would take the lead role in this campaign, but PLAAF and PLAN units could also play important roles. Such a campaign could be executed as a stand-alone campaign for coercive purposes or to help China seize air, sea, and information superiority in support of other campaigns such as the “joint blockade campaign” or “joint island landing campaign.”<sup>91</sup>

US threats to PLA operations in this campaign could increase missile defenses, hardening, and dispersal, and conduct offensive counterair or other operations via nearby air bases or carrier strike groups (CSGs). In response, China has developed more capable aircraft and ships to conduct the non-PLARF elements of this campaign, as well as much deeper magazines of missiles, particularly with regard to land attack missiles to close bases or ASBMs to hold CSGs at bay.

Second, the PLA’s joint blockade campaign is a “protracted campaign” undertaken to “sever enemy economic and military connections” with the outside world and thereby compel the enemy to submit to China’s demands.<sup>92</sup> Although the target is left unspecified, the campaign is clearly most relevant to Taiwan. PLA literature suggests this campaign is envisioned as including conventional air and missile strikes and information and electronic attacks against the enemy to shatter its ability to resist the blockade. Similarly, a third relevant campaign, the joint island landing campaign, is designed to “seize and occupy a whole island or important target.” To successfully accomplish this objective, the PLA must also achieve numerous intermediate campaign goals, such as sea-crossing, destruction of the enemy’s defenses, and securing a beachhead.<sup>93</sup> As with the blockade campaign, the obvious target is Taiwan.

If the PLA attempted to execute a joint blockade campaign against Taiwan, the US military could leverage its advantages in undersea warfare and other areas to break the blockade. The United States could seek to defeat a Chinese joint island landing campaign against Taiwan by taking actions such as destroying Chinese ships attempting to cross the Taiwan Strait. In response, longer ranges and



larger inventories of Chinese missiles and IADS could make it harder for the United States to operate near Taiwan. Chinese surface assets are still prone to attacks by US submarines, but China is developing its ASW capabilities.

Fourth, the PLA's coral island and reef offensive campaign involves operations aimed at the seizure of coral island and reef areas<sup>94</sup> and is presumably the campaign the PLA sees as relevant to potential conflicts with rival maritime territorial claimants, such as against the Philippines or Vietnam in the South China Sea.

If the PLA attempted to execute this campaign to gain control over disputed features in the South China Sea, the United States could respond by using its air and maritime power to sink Chinese ships in the area or target PLA systems operating on the disputed features. Were such a conflict to escalate, however, sustained operations by US assets in the region could be contested by long-range PLA missile strikes to degrade nearby bases.

Although the PLA needs to be prepared to deal with US military intervention in a number of types of campaigns, there does not appear to be a specific campaign devoted to countering US military intervention. However, there are several campaigns that could be directly relevant to that task, depending on the scope and scale of US military intervention. First, in the joint anti-air raid campaign, the PLA must defend the Chinese homeland from air and missile strikes. This is a joint campaign that aims to defend China against enemy air raids, but it is far from purely defensive as it seeks not only to defeat incoming attacks over or near Chinese territory but also to deal with them at their source through Chinese air and missile strikes against the enemy's air bases or aircraft carriers.<sup>95</sup> Chinese military publications highlight the importance of the anti-air raid campaign in terms of gaining, or losing, the operational initiative, and for China's national security more broadly. Specifically, the 2006 edition of *Science of Campaigns* states, "the practice of recent local wars demonstrates that air raids have already become the enemy's main means of achieving strategic and campaign goals, and in the future it will be one of the greatest threats the PLA faces in the organization and implementation of joint operations."<sup>96</sup> Similarly to the conventional missile attack campaign, US operations would be challenged by increasing quantities of longer range Chinese missile and IADS, which would make it harder for the United States to operate near the Chinese coast.<sup>97</sup>

Second, Chinese military publications characterize the sea-line protection campaign as a defensive campaign "waged to ensure the safety of, and free passage along sea lines,"<sup>98</sup> one that could be relevant in the event of an enemy attempt to conduct a distant blockade against China, which some US strategists have proposed as an alternative to the operational concept of "Air-Sea Battle." In response, China has increased its naval capabilities, including modern surface ships capable of conducting sustained operations further from Chinese shores.

## Implications

China's steady progress with regard to military modernization poses two core and interrelated challenges for the US military in Asia: maintaining its military advantage in an era of rapid technological change, and preserving deterrence against growing Chinese ambitions in the region. Remarking in 2009 on China's modernization efforts, then-commander of PACOM Admiral Robert Willard said, "in the past decade or so, China has exceeded most of our intelligence estimates of their military capability and capacity every year. They've grown at an unprecedented rate in those capabilities."<sup>99</sup> Deputy Secretary of Defense Robert Work acknowledged in 2015, "there's no question that US military technological superiority is beginning to erode."<sup>100</sup>

China may now be arriving at the point in its modernization where there are few traditional low-hanging fruits left to pursue. However, rapid technological change could undermine long-standing US advantages in developing high-quality weapon systems and platforms. As Deputy Secretary of Defense Work noted, "today, almost all of the technology that is of importance in the future is coming from the commercial sector, and all of the technology base is global."<sup>101</sup> This "means any



competitor and any adversary is going to have access to these types of technologies, and they can quickly mimic even the most powerful state.” Some analysts have suggested that this era of open technology reinforces the centrality of high-quality human capital in employing these capabilities.<sup>102</sup> Work expressed confidence that “tech-savvy people who’ve grown up in a democracy, in the iWorld” would outperform “people who grow up in the iWorld in an authoritarian regime” on the battlefield.<sup>103</sup> Indeed, Lai notes that “China’s learning from the United States is about hard power and factors at the operational level,” and “the impact of this learning on China’s military thoughts and traditions is limited.”<sup>104</sup> On the other hand, the rapid pace of technological change could erode US advantages in human capital as China pursues similar programs and benefits from innovation within its own commercial sector.

Overall, the American push for technological innovation is intended to ensure continued deterrence in Asia. According to Deputy Secretary of Defense Work, the Third Offset is intended to make the United States “think more and more about conventional deterrence. And that is why we’re looking at the capabilities being developed by both Russia and China, two great powers, not because we think we’re going to go war with them. We’re not planning for any war. What we’re planning to do is preserve peace.”<sup>105</sup> However, this comes at a time when at least some PLA officers appear to have concluded that China already has substantial capabilities to deter, or if necessary, directly respond to US military intervention in a conflict along China’s maritime periphery. For example, in a June 2014 rebuttal of a US magazine article that highlighted the gap between US and Chinese military technology, former Nanjing Military Region Deputy Commander Lieutenant General Wang Hongguang argued that although the PLA remains far behind the US military in many respects, it already has a number of capabilities that would allow it to respond to US military intervention.<sup>106</sup> Wang stated that although US aircraft carriers are much more advanced than China’s first aircraft carrier, they are vulnerable to ASBMs and other Chinese weapons such as anti-ship cruise missiles launched by aircraft, surface ships, and submarines. Similarly, he argued that even though America has the world’s most advanced stealth fighters and bombers, China has a variety of advanced air defense and aircraft detection systems capable of countering stealth aircraft.<sup>107</sup>

In addition to the challenges the PLA’s new capabilities could pose for the United States, Chinese analysts also appear to see geographical proximity as working to their advantage in likely conflict scenarios involving US military intervention, despite the US military’s overall lead in terms of equipment and personnel.<sup>108</sup> For example, according to retired PLAN Read Admiral Yin Zhuo, a frequent commentator on maritime security issues, “if the United States and China get into a conflict in the future, it will likely take place on China’s doorstep. To put it bluntly, if we are fighting on our doorstep, we fear no one.”<sup>109</sup>

As these developments continue to unfold, closely tracking and assessing Chinese perceptions of US conventional military power is becoming increasingly essential. Indeed, understanding Chinese perceptions is much more than an academic exercise; a deeper understanding of Chinese perceptions can help to better inform US and allied policy decisions in areas such as acquisition, basing, strategy and doctrine. It is also required to help shape an effective strategic communications approach, one that can support a strategy of deterring China from using force to resolve its maritime territorial disputes or otherwise employing military power to coerce US allies or partners.

It is also important for the United States to concentrate on convincing the PLA that the US military is capable of mitigating the vulnerabilities identified in Chinese assessments and developing new concepts and capabilities that would allow it to prevent the PLA from achieving its objectives in any regional conflict. This would demonstrate that the US military will remain an extremely challenging potential operational opponent even as Chinese capabilities continue to improve. The purpose should be to ensure that Chinese leaders cannot conclude that they could successfully employ military power to achieve their political objectives, or at least that they could not be confident of doing so rapidly, decisively, and at low cost.

Toward this end, the US military should continue to conduct exercises and demonstrate capabilities that highlight its ability to operate effectively in stressing “counter-intervention” or A2/AD situations. This could include actions such as demonstrating the ability to operate from numerous, dispersed, and potentially unexpected locations; emphasizing US denial and deception capabilities to generate uncertainty about China’s ability to observe and assess US actions; demonstrating capabilities that enable it to interfere with Chinese military operations from longer distances, beyond the reach of China’s counter-intervention capabilities or at least at ranges where they are more limited; and highlighting capabilities and operational concepts that would enable the US military to successfully operate in an environment in which an adversary has degraded US space systems, computer networks, and other information technology capabilities. The United States should also continue to take military and diplomatic actions – such as bilateral and multilateral training and exercises, high-level visits and exchanges, and other working-level initiatives – that help underscore its determination to protect US security interests and support US allies and partners in the region.

## Notes

1. For example, speaking at the Shangri-La Dialogue in June 2011, then-Chinese Minister of National Defense General Liang Guanglie stated that despite impressive achievements in the modernization of the PLA since the 1990s, “there is still a big gap” between China’s military equipment and that of the United States and the world’s other high-technology military powers. See: Institute for International and Strategic Studies, “Shangri-La Dialogue 2011 Fourth Plenary Session Q&A, General Liang Guanglie, Minister of National Defense, China” (June 5, 2011).
2. Ralph Peters, ed., *The Book of War: Sun-Tzu’s “The Art of War” and Karl Von Clausewitz’s “On War”* (New York, NY: Modern Library War, 2000).
3. Janine Davidson, *Lifting the Fog of Peace: How Americans Learned to Fight Modern War* (Ann Arbor, MI: University of Michigan Press, 2010), p. 9.
4. China’s main focus in terms of lessons learned from recent foreign military operations is clearly the United States, and Chinese assessments of US military operations are most relevant to this article given its focus on Chinese perceptions of US conventional military power. It should be noted, however, that China has also learned from military operations by other countries, most notably British operations in the Falklands War and Russian military actions in Georgia and elsewhere. See Alexander Nemets, “The Russian Origins of China’s Revolution in Military Affairs,” *China Brief*, Jamestown Foundation, Vol. 4, No. 13 (June 24, 2004); Lyle Goldstein, “China’s Falklands Lessons,” *Survival*, Vol. 50, No. 3 (June 2008), pp. 65–82; Andrew Scobell, David Lai, and Roy Kamphausen, eds., *Chinese Lessons from Other People’s Wars* (Carlisle, PA: Strategic Studies Institute, US Army War College, 2011); David Lai, “The Agony of Learning: The PLA’s Transformation in Military Affairs,” in Roy Kamphausen, David Lai and Travis Tanner, eds., *Learning by Doing: The PLA Trains at Home and Abroad* (Carlisle, PA: Army War College, 2012), pp. 337–384; and Yevgen Sautin, “The Influence of Russian Military Reform on PLA Reorganization,” *China Brief*, Jamestown Foundation, Vol. 16, No. 6 (March 28, 2016), pp. 13–16.
5. People’s Republic of China, Information Office of the State Council, *China’s Military Strategy* (May 2015).
6. *China’s Military Strategy*.
7. *China’s Military Strategy*.
8. Larry Wortzel, “PLA Command, Control, and Targeting Architectures: Theory, Doctrine, and Warfighting Applications,” in Roy Kamphausen and Andrew Scobell, eds., *Right Sizing the People’s Liberation Army: Exploring the Contours of China’s Military* (Carlisle, PA: Army War College), pp. 191–192.
9. Wortzel, “PLA Command, Control, And Targeting Architectures,” in Kamphausen and Scobell, eds., *Right Sizing the People’s Liberation Army*, p. 197.
10. *China’s Military Strategy*.
11. Michael McDevitt, “China’s Far Seas Navy: The Implications of the ‘Open Seas Protection’ Mission,” CNA Corporation (April 2016). An earlier version of this paper was presented at the “China as a Maritime Power Conference,” CNA Corporation, July 28–29, 2015.
12. McDevitt, “China’s Far Seas Navy.”
13. For a discussion of the role of the PLA in bolstering the CCP’s legitimacy via patriotic nationalism, see Maria Hsia Chang and Xiaoyu Chen, “The Nationalist Ideology of the Chinese Military,” *Journal of Strategic Studies*, Vol. 21, No. 1 (March 1998), pp. 44–64.
14. Jordan Wilson, “China’s Expanding Ability to Conduct Conventional Missile Strikes on Guam,” US–China Economic and Security Review Commission (May 10, 2016), pp. 1–22.

15. For analysis, see Phillip C. Saunders and Julia G. Bowie, "US-China Military Relations: Competition and Cooperation," *Journal of Strategic Studies*, Vol. 39, Nos. 5-6 (August 26, 2016), pp. 662-684.
16. Timothy R. Heath, "China and the US Alliance System," *The Diplomat*, June 11, 2014.
17. For an assessment of Chinese views, see Michael S. Chase, "Fear and Loathing in Beijing? Chinese Suspicion of US Intentions," *China Brief*, Jamestown Foundation, Vol. 11, No. 18 (September 30, 2011), pp. 2-7.
18. People's Republic of China, Information Office of the State Council, *China's National Defense in 2010* (March 2011).
19. *China's Military Strategy*.
20. *China's Military Strategy*.
21. Ely Ratner, "Rebalancing to Asia with an Insecure China," *The Washington Quarterly* (Spring 2013), pp. 21-38; Andrew J. Nathan and Andrew Scobell, "How China Views America: The Sum of Beijing's Fears," *Foreign Affairs* (September/October 2012), pp. 32-47; Kenneth Liberthal and Wang Jisi, *Addressing US-China Strategic Distrust* (Washington, DC: Brookings, March 2012); and Michael S. Chase, "Chinese Suspicion and US Intentions," *Survival* (June-July 2011), pp. 133-150.
22. For example, Chinese scholar Niu Xinchun has argued that US policy is aimed at balancing Chinese influence and assuring US friends and allies, and greater US involvement thus should be seen as competition but not as "containment." See Niu Xinchun, "Eight Myths of US-China Relations [in Chinese]" *Contemporary International Relations* (May 2011), pp. 5-12.
23. For a concise overview, see Daniel Hartnett, "Air-Sea Battle, China, and the US Rebalance to Asia," Center for National Policy (November 2013).
24. Heath, "China and the US Alliance System."
25. Quoted in David Lai, "Introduction," in Roy Kamphausen, David Lai, and Andrew Scobell, eds., *The PLA at Home and Abroad: Assessing the Operational Capabilities of China's Military* (Carlisle, PA: Army War College), p. 13.
26. Lai, "The Agony of Learning," in Kamphausen, Lai, and Tanner, eds., *Learning by Doing*, pp. 337, 349.
27. Lai, "Introduction," in Kamphausen, Lai, and Scobell, eds., *The PLA at Home and Abroad*, p. 17.
28. *The Science of Military Campaigns*, p. 91.
29. See David M. Finkelstein, "China's National Military Strategy: An Overview of the 'Military Strategic Guidelines,'" in Kamphausen and Scobell, eds., *Right-Sizing the People's Liberation Army*, pp. 69-132.
30. *The Science of Military Strategy*, 2013 ed., p. 93.
31. On the enormous impact of the May 1999 accidental bombing of the Chinese Embassy, see Zhang Wannian, *Biography of Zhang Wannian [in Chinese]* (Beijing, China: Liberation Army Publishing House, 2011), pp. 414-421.
32. Dean Cheng, "Chinese Lessons from the Gulf Wars," in Scobell, Lai, and Kampenhausen, ed., *Chinese Lessons from Other People's Wars*, pp. 153-200.
33. *The Science of Military Strategy*, 2013 ed., p. 138.
34. *The Science of Military Strategy*, 2013 ed., p. 140.
35. Martin Andrew, "The Influence of US Counterinsurgency Operations in Afghanistan on the People's Liberation Army," in Scobell, Lai, and Kamphausen, ed., *Chinese Lessons from Other People's Wars*, pp. 237-276.
36. Frank Miller, "People's Liberation Army Lessons Learned from Recent Pacific Command Operations and Contingencies," in Scobell, Lai, and Kamphausen, ed., *Chinese Lessons from Other People's Wars*, pp. 201-236.
37. *The Science of Military Strategy*, 2001 ed., p. 380.
38. *Armed Forces Building Systems Analysis*, p. 120.
39. *The Science of Military Strategy*, 2001 ed., p. 376.
40. *Research into the Kosovo War*, pp. 83-84.
41. *Research into the Kosovo War*, p. 37.
42. It does not consider areas that are of little or no direct relevance to US-China military competition in Asia, such as US capabilities for counter-insurgency operations, even though these may be of interest to Chinese military observers.
43. For the most recent analysis on China's A2/AD strategy, see Timothy Heath and Andrew S. Erickson, "Is China Pursuing Counter-Intervention?" *Washington Quarterly* Vol. 38, No. 3 (2015), pp. 143-156. For a counter-argument, see M. Taylor Fravel and Christopher P. Twomey, "Projecting Strategy: The Myth of Chinese Counter-intervention," *Washington Quarterly* Vol. 37, No. 4 (2014), pp. 171-187.
44. *The Science of Military Strategy*, 2013 ed., p. 152.
45. Andrew Erickson, "Under Secretary of Defense Frank Kendall, Senior Pentagon Weapons Developer, Describes Rapid Chinese Ballistic & Cruise Missile Advances-Even 'Going Beyond What [the U.S. has] Done,'" AndrewErickson.com, blog post (January 28, 2015).
46. See Huang Sujian and Zhang Zhengping, "The Development of the Essential Properties of the US Strategic Air Force and Its Inspiration for China's Air Force Building," in Zhu Hui, ed., *Strategic Air Force [in Chinese]* (Beijing, China: Blue Sky Press, 2009), pp. 277-282. For more information on the "strategic air force" concept,

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