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RESEARCH BRIEF

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Long-Term Strategic Competition Between the United States and China in Military Aviation

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The intensifying security competition between China and the United States in the Asia-Pacific region has manifested itself in a myriad of ways, including dangerous air encounters. Given the bilateral tensions and importance of airpower to national defense, has long-term strategic competition between the United States and China in the military aviation sector emerged? To answer this question, this brief evaluates US and Chinese military aviation through three factors that shed light on the degree and nature of strategic competition: resource allocations, targeted platform development, and airpower employment concepts. While China has been competing with the United States for decades, China has only recently begun to drive US decisions. Cost-imposing strategies may not favor the United States, so innovation and technological developments in military aviation should focus on how to thwart China's ability to achieve its military objectives.

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INTRODUCTION

Security competition between China and the United States in the Asia-Pacific region has been heating up. This tension has manifested itself in a myriad of ways, including dangerous air encounters. In May 2016, Chinese J-11 fighter jets intercepted a US Navy EP-3E Aries aircraft conducting a routine patrol mission in international airspace over the South China Sea. The Chinese pilots flew within 50 feet of the US reconnaissance aircraft and forced it to descend to avoid a collision. In June, the Pentagon expressed its concern about another unsafe intercept, this time involving a Chinese fighter approaching at a “high rate of speed” as it intercepted a US Air Force RC-135 flying over the East China Sea.

Amid rumors that China might declare a new air defense identification zone (ADIZ) over the South China Sea, US Pacific Command Commander Admiral Harry Harris has reiterated that the US military would ignore such a declaration, in line with its response to the East China Sea ADIZ.

The United States has also responded to increased tensions by expanding its airpower role in the region. In March 2016, the United States and the Philippines announced the reopening of four Philippine air bases to the US military to reinforce rotational deployments near the South China Sea.

Military aviation has become a fundamental component of both countries' ability to achieve their aspirations in the Asia-Pacific. Xi Jinping often refers to the People's Liberation Army Air Force (PLAAF) as a strate-

gic force to indicate its crucial role in overall national security and military strategy.¹ Building strong airpower is an indispensable part of improving China's military capability.² The state of military aviation determines the PLAAF's ability to contribute to offensive and defensive operations, through providing strategic warning, air attack, anti-air, missile defense, airborne operations, and strategic airlift.³ General Ma Xiaotian, the commander of the PLAAF, has highlighted China's needs to leverage innovation and technological advancements to win future wars.

US official statements echo this sentiment. Military aviation is the backbone of each of the Air Force's core missions of air and space superiority; intelligence, surveillance, and reconnaissance (ISR); rapid global mobility; global strike; and command and control. The ability to command the air is critical to US national defense and its flexibility and adaptability to a changing strategic environment is its greatest asset. Recent US defense documents, such as the Air Force Air Combat Command Strategy 2015, have issued a call to action to address anti-access/area denial (A2/AD) challenges.

THE US FACTOR IN CHINESE MILITARY AVIATION

Although the PLAAF was once a bloated and mostly antiquated force relegated primarily to territorial air defense and support to other services, over the past decade it has been emerging as an increasingly capable service, one that is striving to become

a world-class air force with a broader set of missions and responsibilities. The PLAAF is also gaining bureaucratic stature along with these changes, an important development given the traditional dominance of the ground forces within China's military establishment. Indeed, since 2004, the PLAAF commander has been a member of China's powerful Central Military Commission. That year, the PLAAF also received its own service-specific strategy, under which it is responsible for “integrated air and space, simultaneous offensive and defensive operations.”

Today, the ongoing reorganization of the People's Liberation Army appears poised to further elevate its stature, and the modernization of the PLAAF is closely linked to the realization of Xi Jinping's “Dream of a Strong Army,” which in turn is intended to support China's broader foreign and security policy objectives. For China, the US military represents a model to emulate in certain respects. At the same time, however, Chinese strategists see US military power—and US airpower in particular—as the principal threat to China's ability to achieve these goals, motivating China to increase the level of resources devoted to defense (including strengthening its ability to counter US military intervention), modernize its armed forces (including its military aviation capabilities), and develop new force employment concepts. An evaluation of Chinese resource allocations, platform development, and airpower concepts leads to the conclusion that China's focus on countering the United States has become a major fac-

1 Shen Jinke and Li Hongbin, “*Zhujian buneng wangzhan chengwei kongjun guanbing gongshi gongwei*” [Do Not Forget That Warfighting Is the Consensus of Air Force Officers and Men], *PLA Daily*, May 24, 2016, http://www.81.cn/jmywyl/2016-05/24/content_7070722_2.htm; Ma Xiaotian, “*Jiakuai jianshe yizhi gongfang jianbei de qiangda renmin kongjun*” [Rapidly Build an Air Power with Both Defensive and Offensive Capabilities], *Qiushi*, November 1, 2014, http://www.qstheory.cn/dukan/qs/2014-11/01/c_1113046123.htm.

2 “*Xi Jinping: jiankuai jianshe yizhi kongtian yiti, gongfang jianbei de qiangda renmin kongjun*” [Xi Jinping: Accelerate the Building of an Integrated Air-Space Power with Simultaneous Offensive-Defensive Capabilities], *Xinhua*, April 14, 2014, http://news.xinhuanet.com/politics/2014-04/14/c_1110234957.htm.

3 “*Quanmian shishi gaige qiangjun zhanlue*” [Regarding Comprehensive Implementation of Military Reform and Modernization], *PLA Daily*, May 26, 2016, http://navy.81.cn/content/2016-05/26/content_7073171_4.htm.

tor in these decisions over the past ten years.

Resource Allocations

China's defense spending has increased dramatically in real terms over the past 20 years, averaging more than 10 percent increases annually over this period. Although the rate of growth in the defense budget appears to be decreasing along with China's slowing rate of economic growth, China has an impressive defense budget that enables it to make progress toward its objectives of modernizing its hardware, strengthening the quality of personnel, and improving its training and readiness. China does not publicly release information about the breakdown of its defense budget by service, or about the costs of specific programs, which makes it difficult (if not impossible) to estimate its spending on military aviation capabilities. Nonetheless, the new capabilities China has been developing and deploying in recent years make it clear that air power must be an important budget priority, along with other areas such as missiles, space, and naval power.

Platform Development

The development of advanced hardware is an important component of the PLA's attempts to transform itself 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 China, this is about both copying from and being prepared to counter US capabilities. For example, Chinese strategists writing on the PLA's quest to become a "strategic air force" explicitly highlight the US Air Force as an inspiration for the development of China's own air and space capabilities, including in areas such as stealth aircraft, unmanned systems, infor-

mation technology, airborne warning and control, early warning systems, and strategic transport capability. China's strategic objectives indicate that the PLA must be prepared to counter US military intervention, deal with less powerful rivals along its periphery, and protect China's interests in more distant locations through activities such as military operations other than war. Given this context, some, but not all, of the PLA's platform development can be seen as focused on competition with the United States. Based on sources such as China's official media, assessments by regional observers, and US DoD reports, the military aviation programs that seem to be the highest priorities for China include stealth fighters, large transport aircraft, unmanned aerial vehicles (UAVs), and strategic bombers.

Employment Concepts

Chinese military writings reflect considerable deliberation on the PLA's key conventional missions and the types of campaigns that the PLA would need to execute in future conflict scenarios. The reason for this is straightforward: Chinese military analysts assess that the Party leadership may well call on them to use force in support of China's policy goals. For example, the 2013 edition of the PLA Academy of Military Science's *Science of Military Strategy* notes that even though the probability of a "large-scale, high-intensity defensive war" resulting from a "hegemonic nation" attacking China to delay or otherwise interrupt its rise is very low, there is a higher likelihood the PLA will face another type of conflict. In particular, the authors of this volume assess that a war over the status of Taiwan, possibly involving US military intervention, is a greater danger and one the PLA must remain focused on as it continues to modernize. Additionally,

according to these authors, there is a growing risk of a conflict over one of China's maritime territorial disputes. Because US military intervention could threaten the PLA's ability to accomplish its objectives in any number of different scenarios, Chinese military publications make it clear that the PLA must be prepared to deter or, if necessary, counter US military intervention. The United States is not the only factor driving China's approach to the modernization of the PLA, as it has a broader set of missions, but it is clear that China's assessment of US air power is an extremely important factor in the development of Chinese military aviation.

THE CHINA FACTOR IN US MILITARY AVIATION

US military aviation is a key component of the overall US force structure.⁴ While advancements in aviation are appreciated by all the services, no service is as shaped by military aviation as the US Air Force. During the 1990s and 2000s, the rise of China did not greatly influence US decisions in the military aviation sector primarily because US global air superiority remained relatively unchallenged during that time. China has narrowed the gap in its ability to impact and deploy airpower, however. These developments compelled the DoD to focus more heavily on the challenges of Chinese military modernization and required responses. Looking at US resource allocations, platform development, and airpower concepts leads to the conclusion that China has increasingly become a factor in these decisions over the past ten years, as the United States has become a factor in China's decisions.

Resource Allocations

While DoD does not maintain records to assess whether resources devoted

⁴ The Army has 22 aviation brigades, the Navy 10 carrier air wings, and Special Operations has 259 mobility and fire support aircraft and 83 ISR aircraft. US Department of Defense, "Quadrennial Defense Review 2014," March 4, 2014, 40-41.

to defense in the Asia-Pacific have increased as a percent of total expenditures on defense over the past 25 years, other indicators suggest that China is influencing resource allocations in the air domain. The US Air Force “Force Structure Changes” of February 2012 states that the air force will shape itself to ensure it is “adaptable and capable of deterring aggression and providing a stabilizing presence, especially in the highest priority areas and missions in the Asia-Pacific region.”⁵ The 2014 Quadrennial Defense Review (QDR) issued by the DoD also pointed, albeit indirectly, to China when it states that “the Department’s investments in combat aircraft, including fighters and long-range strike, survivable persistent surveillance, resilient architectures, and undersea warfare will increase the Joint Force’s ability to counter A2/AD challenges.”⁶ Over the past four years, the total number of US Air Force military personnel deployed in the Pacific Air Forces (PACAF) area of responsibility has more than doubled, and total fighter and attack aircraft have increased from approximately 266 in May 2011 to 340 in October 2015.⁷ The United States also expanded the locations to which it deploys aircraft. PACAF A-10 ground attack aircraft flew the first air contingent to the Philippines to fly joint maritime patrols in the South China Sea in 2016, highlighting the US ability to leverage allies and partners to improve competitiveness in mili-

tary aviation.

Platform Development

From 1996 to 2015, the US military experienced significant cuts, with heavy bombers and fighter aircraft suffering the greatest reductions at 29 and 37 percent respectively. However, improvements were made with the advent of the fifth-generation F-22 air superiority fighter, the introduction of UAVs for ISR and attack purposes, and widespread use of precision munitions.⁸ There is no indication that China was a dominant factor in any of these decisions—the requirements of the wars in Iraq and Afghanistan, coupled with budget constraints, served as the dominant influences. The prioritization of military systems optimized for low-intensity conflict at the expense of systems needed for high-intensity conflict is further evidence of the limited influence of China in decisions about US military aviation during most of the 1990s and early 2000s.

However, over the past few years the strategic and operational focus has shifted to make China a major factor. The Third Offset Strategy articulates this shift to developing disruptive technologies that will ensure US superiority, even as potential adversaries continue to modernize their militaries—an obvious response to emerging threats emanating from China.⁹ The 2014 QDR demonstrated that defense analysts had begun to think about the developments in mili-

tary aviation needed to fight in potentially contested airspace and address the challenges of a near-peer competitor. The QDR specifically mentions three platforms that are a part of general modernization efforts, but are likely to be prioritized due to the China factor: the multi-role, fifth-generation F-35 fighter, which will provide improved survivability; a new, stealthy, long-range strike aircraft, “to maintain the ability to operate from long ranges, carry substantial payloads, and operate in and around contested airspace;” and the KC-46A next-generation tanker/cargo aircraft “to enable efficient and rapid long-range deployments.”¹⁰

Airpower Employment Concepts

One area where the United States has begun to cater to its strengths at the expense of Chinese weaknesses is flexibility and innovation in airpower employment concepts. The United States can no longer plan to respond to contingencies with rapid deployments of large number of fighters to bases and aircraft carriers close to China, followed by the establishment of air superiority necessary to allow the heavy use of ISR and tankers close to the enemy without complications.¹¹ AirSea Battle is an operational concept designed in 2010 to ensure access and maintain freedom of action in the global commons due to adversaries’ A2/AD capabilities. Due to its expanded joint nature, it is now known as the Joint Concept for

5 US Air Force, “USAF Force Structure Changes: Sustaining Readiness and Modernizing the Total Force,” Headquarters US Air Force, February 2012.

6 US Department of Defense, “Quadrennial Defense Review 2014,” 36.

7 As a comparison, the general trend according to US Air Force Almanacs from 2011 to 2014 shows a steady decrease in total USAF Europe military and civilian personnel from approximately 32,000 to a shade under 30,000 by 2014; USAF Europe aircraft numbers mostly stayed the same, hovering around 220 between 2011 and 2014.

8 Eric Heginbotham et al., *The US-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017* (Santa Monica, CA: RAND Corporation, 2015) 37.

9 Deputy Secretary of Defense Robert O. Work, “The Third US Offset Strategy and Its Implications for Partners and Allies,” speech given at the Willard Hotel, January 28, 2015.

10 US Department of Defense, “Quadrennial Defense Review 2014,” 28.

11 Jeff Hagen, “Potential Effects of Chinese Aerospace Capabilities on US Air Force Operations,” testimony before the US-China Economic and Security Review Commission, May 20, 2012, 4–5.

Access and Maneuver in the Global Commons, or JAM-GC.¹² The United States has also begun to focus on increasing the resiliency of its bases in the region. In addition, the QDR called for the capability to disperse land-based forces to other bases and operating sites and the ability to operate and maintain front-line combat aircraft from austere bases with a small number of logistical and support personnel and equipment.

CONCLUSION AND RECOMMENDATIONS

Given the long timelines associated with procurement, development, and acquisition, the United States will need to anticipate the next steps China will take in response to US actions. The United States should be investing in a number of areas to cater to its strengths and exploit China's weaknesses. Recent assessments by US strategists suggest that long-range bombers, long-range air- and sea-launched cruise missiles, aerial refueling aircraft, and long-range, long-dwell ISR platforms will play important roles in any future US concept of operations for power projection.¹³

Given China's geographic advantage, the United States should be primarily concerned with projecting power effectively from far distances, outside of China's threat ring. This requires not only new capabilities like tankers, ISR UAVs, and improved standoff weapons, but also new deployment and operational concepts. The base resiliency and AirSea Battle concepts discussed here were first

attempts to address the A2/AD challenge, but hopefully not the last.

China can be expected to continue to invest in the development of a world-class air force, one that is both in line with its status as a major power and capable of protecting its emerging global interests. That said, a deepening rivalry with the United States and its regional allies and partners would likely intensify the strategic competition in military aviation, and probably in other areas, by motivating China to focus even more sharply on the development of capabilities designed specifically to counter or undermine US advantages. Defense S&T competition could spill over into other domains, potentially causing greater friction in the US-China economic relationship, as evidenced by tension over cyber espionage and theft of commercial secrets in recent years.

The United States is likely to find that cost-imposing strategies and attempts to inspire self-defeating behavior would be less effective than strategies of denial, which "seek to prevent a competitor from being able to translate its operational means into the political ends that it seeks."¹⁴ It will be difficult, if not impossible, to get China to spend more than it can afford, as Chinese analysts have studied the collapse of the Soviet Union extensively and determined that one reason for its disintegration was spending too much on defense. China will be wary of responses to US actions that seem designed to achieve similar results.

Moreover, China's defense budget still accounts for a relatively mod-

est share of GDP. Slowing economic growth will likely compel China to reduce annual increases in defense spending. More technologically advanced and expensive programs like aircraft carriers and stealth fighters may lead to greater resource competition within China's defense establishment, but China does not seem to be close to the point at which it could no longer afford to compete with the United States militarily. Therefore, the United States should focus on developing platforms and operational concepts focused on denying China the ability to achieve its objectives by force. Such a strategic focus will be more effective in terms of deterrence, exhibits less uncertainty, and will do more to assure US allies and partners.

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¹² US Department of Defense, "Quadrennial Defense Review 2014," 38.

¹³ David Ochmanek, "The Role of Maritime and Air Power in DoD's Third Offset Strategy," testimony before the House Armed Services Committee, Subcommittee on Seapower and Projection Forces, December 2, 2014, 8.

¹⁴ Thomas G. Mahnken, *Cost-Imposing Strategies: A Brief Primer* (Washington, DC: Center for a New American Security, 2014), 6.