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RESEARCH BRIEF

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US–China Military Technological Competition and the Making of Chinese Weapons Development Strategies and Plans

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How do Chinese decision-makers and strategists view the United States today as a military strategic competitor especially in light of the US Third Offset Strategy? This brief examines the nature, dynamics, and direction of intensifying US–China military strategic technology competition and how the Third Offset Strategy may influence implementation of Chinese strategies and plans for long-term development of its military technological and war-fighting capabilities.

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CHINESE STRATEGIC ASSESSMENTS OF THE UNITED STATES

The United States is China's primary military technological rival; however, Chinese authorities have carefully avoided public official identification of the United States as a military opponent. Internally since the mid to late 2000s, China's national security policymakers have viewed the United States as a direct military competitor and potential adversary in response to security frictions and competing interests that are deepening US-China strategic distrust. A central reason for this logic is a widely-held belief among Chinese strategists that the United States has designated China as its main strategic opponent since the second half of the last decade.

A 2011 study by analysts from the Chinese Academy of Military Sciences pointed out that "the United States does not want to see big powers like China and Russia grow stronger, and it particularly fears that China's rapid rise would hurt its own status as the hegemon. Therefore, it sees China as its potential strategic opponent." They recommend that "strategic balancing capabilities" be built in nuclear, space, and air deterrence even if this leads to an "intense arms race."¹

China's 2015 defense white paper, which focused on China's military strategy, avoided any direct criticism of the United States or mention of escalating China-US tensions. In discussing the regional security situation, the white paper pointed out mildly that

as the world economic and strategic center of gravity is shifting ever more rapidly to the Asia-Pacific region, the United States carries on its 'rebalancing' strategy and enhances its military pres-

ence and its military alliances in this region.

The white paper was even more circumspect in its assessment of intensifying global defense technological competition and did not name the United States:

World major powers are actively adjusting their national security strategies and defense policies, and speeding up their military transformation and force restructuring. The revolutionary changes in military technologies and the form of war have not only had a significant impact on the international political and military landscapes, but also posed new and severe challenges to China's military security.

THE PLA'S WEAPONS AND EQUIPMENT DEVELOPMENT STRATEGY AND CONSTRUCTION PLANS

The People's Liberation Army (PLA) has had a long-term Weapons and Equipment Development Strategy (WEDS 武器装备发展战略) since the early 2000s and has developed medium and long-term weapons construction plans to implement its strategy.

The WEDS provides planning stability for 20 years. Its integrated approach involves input from across the entire defense establishment, which lessens the effects of parochial bureaucratic interests and political intervention. The WEDS is closely coordinated with other key development strategies, including economic development, national security, military, and national science and technology (S&T) development.

Although the WEDS is classified and its contents are unknown, it is likely to include the following topics:

- Analysis and forecasting of the international strategic environment
- Assessments of China's regional security periphery
- National conditions and development strategy
- Military strategic guidelines
- Military equipment requirements in future conflicts
- Assessing the strengths and weaknesses of Chinese armament capabilities
- S&T development

KEY GUIDING PRINCIPLES

In a 2012 interview in a PLA-affiliated newspaper, Lieutenant General Li Andong, the executive deputy director of the General Armament Department, laid out the key principles guiding China's arms development.² He stressed:

The importance of unified central leadership: In his mind, the top requirement is strengthening arms integration between the service branches: "Raising the level of coordination and combination and preventing the establishment of separate standalone systems."

Establishing credible strategic deterrence capabilities: The PLA should ensure its strategic deterrence capabilities are operationally tested and deployed so that "effective and credible deterrence can be guaranteed."

Prioritizing offensive capabilities: For much of the PLA's history, the focus was on developing defensive capabilities, but today it is "on development of offensive weapons according to requirement of combining offense and defense."

1 Wang Faan, ed., *China's Strategy for Invigorating the Armed Forces Amid Peaceful Development* [Zhongguo Heping Fazhan Zhong De Qiangjun Zhanlue] (Beijing: Military Science Press, 2011).

2 Li Andong, "Implement the Scientific Development Concept, Strengthen the Strategic Direction of Armament Building," *China Military Industry News*, December 5, 2012.

Promotion of asymmetric development: “What we should do is to concentrate on developing our unique armaments that can effectively overpower the enemy through systems sabotage against the vital parts and system weaknesses of the opponent.”

Selective development of advanced armaments: “We should develop key defense technologies and weapons that will play a decisive role in future wars ... and spare no effort to achieve successful results in these crucial projects.” Likely candidates for development include stealth aircraft, hypersonic air vehicles, aircraft carriers, carrier-borne aircraft, precision missiles, and high-performance computers.

Indigenous innovation: Li urged the defense establishment to foster home-grown innovation to limit foreign dependence, but also noted that “we should grasp opportunities and actively carry out international cooperation.”

Civil-military integration (CMI): Civilian entities should be encouraged to participate in research, development, and production along with repair, maintenance, and other support services for the arms industry. CMI also would promote market competition by establishing a competitive procurement process.

Li’s instructions offer useful insights into the current state of China’s armaments strategies and plans. A major focus of current Chinese armament development is on how to counter a stronger adversary through credible deterrence and asymmetric capabilities. Armament development is making solid progress, and the Chinese defense S&T system is making a decisive shift from absorption and low-end innovation to development of more innovative capabilities. Despite this progress, the structure

and processes in which armament development is taking place continue to suffer from deep-seated structural problems such as compartmentalization, weak institutionalization, and heavy reliance on foreign technologies.

THE 995 NEW HIGH-TECHNOLOGY PROJECT: CHINA’S VERSION OF THE THIRD OFFSET STRATEGY

China has successfully managed select advanced technology projects despite the deep-rooted structural impediments that afflict its defense R&D system. Despite many failings, the top-down political system is able to mobilize and concentrate political interest, economic resources, bureaucratic coordination, and S&T capabilities on the handful of programs that receive close top leadership attention, such as the 995 Project, one of the most important Chinese defense S&T efforts.

The 995 Project (New High-Technology Project 高新技术项目) was started after the May 1999 bombing of China’s embassy in Belgrade by the United States, although its roots go back to the 1995–1996 Taiwan Strait crisis and the 1991 First Gulf War. In a 2012 public presentation, Major General Yao Youzhi of the Academy of Military Sciences said that the 995 Program was established as result of Belgrade bombing and described its purpose as accelerating research and development (R&D) of new weapons: “Without 995, the PLA would not have been able to get new generations of weapons as quickly as it has done.”³ Yao also referred to the 2009 National Day military parade as evidence of the success of the 995 Project.

From a competitive strategies perspective, the 995 Project has been very successful in narrowing the US–China technology gap and doing so in

a cost-effective manner by focusing on asymmetric capabilities. The 995 Project may have a rosy long-term future, especially if it is used as a key vehicle to respond to the Third Offset Strategy.

CHINESE VIEWS OF THE THIRD OFFSET STRATEGY

There is growing debate among Chinese military analysts about the implications of the Third Offset Strategy and what China’s strategic and programmatic responses should be. The prevailing school of thought argues that the Third Offset Strategy is an attempt to lure peer competitors to compete in areas that are strategically advantageous to the United States. Thus, China should “continue to stress and strengthen domains where we enjoy superiority, and not be influenced by the United States.”⁴

Chinese analysts think that the United States has the political, economic, geostrategic, and innovative will and capability to successfully implement the Third Offset Strategy. Tong Zhen of the Academy of Military Sciences has offered several reasons for this assessment. First, the United States is pursuing the Third Offset Strategy from a position of superiority compared to its opponents. Second, The US defense and civilian innovation systems have the technological expertise and innovative capacity to effectively implement the strategy.

However, Tong also points to challenges faced by the United States, including resource constraints and flat defense budgets; more complex and diverse threats compared to past offset strategies; the ability of adversaries to gain access to technologies that would allow them to compete more effectively; and coordination problems between the White House and US Congress.

3 Talk by Yao Youzhi at the Shenzhen Culture Forum, August 18, 2012, http://www.szccf.com.cn/Wqhg_content_662.html.

4 Zhao Yang and Liu Na, “The Best Way of Predicting the Future Is to Create the Future: An Analysis of the Technical Background of the United States’ High-Profile Presentation of the Third Offset Strategy,” *Liberation Army Daily*, May 6, 2016.

In assessing the implications of the Third Offset Strategy for China's defense S&T development, Zhang Xiaobin, a defense technology analyst at the State Administration for Science, Technology, and Industry for National Defense, believes that there will be a significant detrimental impact.⁵ It will be far more difficult for China to successfully pursue leap-frog style developments in disruptive innovation, an important feature of Xi Jinping's innovation-directed development strategy. This is because the US defense innovation system (led by the Defense Advanced Research Projects Agency) is far more capable of achieving technological surprises. Stepped-up efforts by the United States to develop lower-cost asymmetric capabilities such as unmanned systems and undersea warfare will put more pressure on China as it pursues such technologies.

China's efforts to develop core defense competencies in advanced areas could be undermined by being goaded into an arms race with the United

States, forcing China to invest in R&D that it can ill-afford and in technologies in which it is ill-equipped to compete over the long term. Zhang offers the example of the Reagan 'Star Wars' program during the 1980s in which an already economically exhausted Soviet Union wasted enormous resources with little return on its investment, a great example of inducing an adversary to engage in strategically self-defeating behavior.

Zhang concludes that China should rely on the long-standing strengths of the Chinese system that were responsible for successes such as the development of the nuclear weapons, ballistic missiles, and manned space programs. This includes the adaptive nature of its authoritarian, top-down management process, especially its ability to concentrate and mobilize resources for specific projects.

CONCLUSIONS

Strategic competition between the United States and China will be on-

going, but China will make steady inroads to narrow the military technological gap. Chinese authorities will likely adopt a wait-and-see attitude in response to the Third Offset Strategy and will continue to pursue the 995 Project and development of asymmetric technological capabilities. Xi has emphasized the importance of asymmetric S&T capabilities to China's efforts to follow its own development path and not simply copy others: "Develop asymmetric shashoujian capabilities and not just do exactly the same as developed countries are doing."⁶

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5 Zhang Xiaobin, "The Challenges Imposed by the US Third Offset Strategy on the Development of the Defense Science and Technology Industry, and Countermeasures," *Defense Science and Technology Journal* 36, No. 6, December 2015.

6 Chinese Communist Party Literature Research Office, 习近平关于科技创新论述摘编 [Selection of Xi Jinping's Comments on Science, Technology and Innovation] (Beijing: Central Party Literature Press, 2016), 41–49.