The Dragon's Teeth: The Growth of China's Military

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It would be difficult to dispute the statement that the expansion of Chinese influence in world affairs in the past few decades has been anything short of impressive. Consistently strong economic growth has allowed the government in Beijing to fund development projects across a wide range of policy areas.

This is perhaps most evident with the expansion and maturation of the People's Liberation Army (PLA). The rise of China's military is a common and hotly-debated subject for strategists, politicians, academics and journalists alike. From the impending launch of an aircraft carrier to the mysterious appearance of new prototype stealth fighters, policy-makers and commentators obsessively seek to reactively analyze China's symbolic achievements as a quickly-modernizing great power.

Yet, while there is little to dispute China's rapid advances, it is worth bearing in mind that such symbolic achievements often only hint at the shape of strategic realities in the long run. As even China's military commanders have noted, the deployment of an aircraft carrier, for example, is a far cry from the ability to actively deploy capable battle groups in blue waters. China is many years away from enjoying the kind of power projection capabilities of the United States and remains very much a continental-based force. As such, policy-makers and strategists in international defense establishments must consider advancements in those PLA capabilities, namely the airborne, nuclear and ballistic forces of the People's Republic of China (PRC), that have strategic depth and a practical role in any near-term grand strategy. Such analyses are crucial to the future stability of the region, as an accurate understanding of intentions and capabilities can surely help nations avoid miscommunications and unnecessary conflict.

It is clear that, in the interest of continued engagement and peaceful relations in East Asia, members of the international community must meet the region's emerging Sino-centric power dynamic with policies derived from strategic wisdom and a solid understanding of China's force structures, goals and doctrinal disposition. To this end, I posit that reliance on defensive and deterrent force structures in the near-term suggests a "Fortress China" mindset in Beijing. In other words, the PRC sees its national security objectives as a direct function of the ability to influence and control the course of international affairs in its periphery and the local region, and is developing the appropriate anti-access capabilities to affect this geopolitical reality. This concept can be drawn from an assessment of the doctrinal disposition and modernization efforts in the above-mentioned specific branches of the PLA.

Building the Fortress

China's military expansion in the last three decades is, at its core, the story of the development of air power. From the construction of China's first intercontinental ballistic missiles (ICBMs) in 1981 to the testing of anti-satellite capabilities 25 years later, advances in aerial and ballistic technologies have highlighted the growing significance of land-based air forces for PRC grand strategy. The rise of various challenges in the international arena, from disputes in the South China Sea to increasing tensions with Japan, have clearly brought PLA development programs in line with an overall strategic mindset that sees the rapid consolidation of defensive and deterrent forces as crucial to building a strong national security in the near-term.

Many of the challenges facing China have had distinct impacts on the way in which the PLA has chosen to develop

its capabilities and a contextual understanding of them is necessary for analyzing overall PRC strategy. Perhaps the single most prominent foreign policy issue facing China today is the Taiwan dispute. The two countries, separated as a result of civil war and the communist revolution of 1949, maintain that each is the true government of all of China. The resulting tensions have fueled the development of ballistic missile and aerial combat weapons programs in the PRC, with the maintenance of massive strike forces near Taiwan a function of the United States' thirty year old security relationship with the island as much as anything else.

Further international challenges include a variety of territorial disagreements in the South and East China seas, with Chinese forces both disputing and periodically encroaching into waters near islands held by Vietnam, the Philippines and Japan. While such encounters have rarely led to violence, they are a major cause of political and military tensions. For example, the expansion of Chinese air power in the past decade has been a primary factor incentivizing the update of military hardware and the directed-deployment of expensive balancing forces in Japan.

China's major competitor in the local international arena is India. While direct tensions across their shared border are minimal at present, both nations compete for control of the sea lanes and land-based resource routes that bring oil and gas from the Middle East and Central Asia. India's unique economic and military dynamic – essentially the product of a massive population and enduring conflict with Pakistan – finds itself at odds with Chinese interests in the Gulf and the Indian Ocean. India's continually modernizing nuclear armaments, a product of conflict with Pakistan, and the rapid procurement of aircraft-carrying naval capabilities add to the pressures China feels already from the presence of US and allied naval assets in the Western Pacific, Indian Ocean and the South China Sea. Such Indian capabilities also suggest that future challenges for China may include competition for control of the Straits of Malacca and other maritime access routes and shipping lanes.[1]

The combined challenge of these many issues must be addressed by an overarching Chinese grand strategy – a plan for dealing with these challenges in a manner most favorable to the People's Republic. For several years, Congressional reports have suggested that this grand strategy takes the form of a perimeter-based model of geo-strategic control, called the "island chain theory."[2] The theory essentially states that China must try to affect control over the area between its coast and two lines, one running between Indochina and Southern Japan and the other between eastern Indonesia and Northern Japan. The goal would be to prevent the incursion of extra-regional influences in the affairs of a China-dominated East Asia. This would allow China to resolve the challenges facing it in the international arena with a degree of relative control, by either revising the local international order in the long-term or denying access to the region to states it saw as belligerents.

The past several years have seen the deployment of numerous new types of modern ballistic missiles, nuclear delivery systems and combat aircraft to augment existing PLA force structures and it is clear, in today's geopolitical context, that this has come about as a direct result of China's self-perception of its near- to medium-term challenges in the international system. The proximate nature of these challenges have prompted the development of these new forces as bulwarks from which to deter threats and foster the future growth of real power and influence in world affairs.

The Paper Tiger in the 21st Century:

Nuclear Forces and Ballistic Missile Development in China

Since the last days of World War II, nuclear weapons have acted as a balancing agent between great powers in the international system. However, despite the important balancing role that they have played in defining the military activities of states in the last 60 years, atomic forces hold a curiously ambiguous position in the echelons of China's military capabilities.

For decades, Chinese leaders have eschewed nuclear force as an effective means of waging war. Mao Zedong often and famously referred to such weapons, and the great powers that wielded them, as nothing more than "paper tigers" – visibly fearsome, but, in reality, a weak military asset and a bluff. This belief has its roots in Mao's own concept of war-fighting, the People's War. The doctrine asserts that collective popular action provides all impetuses necessary

for victory in any conflict, going so far as to assume that massive force, organized military capabilities and even nuclear weapons are no match for the massed guerilla-style uprising of a united revolutionary force. This logic is strengthened, historically, by the reality that strategic-scale weapons can do little to destroy a large, dispersed enemy population.

As a result, Chinese military doctrine under the People's Republic relegated nuclear assets to a purely deterrent role. In history, the deployment of American bombs to Korea famously did little to affect China's inclination to aid the North Korean cause. Even the large-scale urbanization and industrialization of the Middle Kingdom since the Cultural Revolution has done little to change Chinese thinking in atomic matters. The basic truth is that, beyond maintaining the appropriate deterrent capabilities, the PRC does not see nuclear weapons as a viable military asset for use in any conflict.

Nevertheless, China is actively modernizing and expanding the two main components of its atomic arsenal – both actual warheads and the associated delivery systems – to combat what it sees as strategic threats from three primary sources: the United States, India and, to some extent, Russia.[3]

The augmentation of nuclear assets in China comes in the form of new fissile material production for use with an expanded force of ballistic missiles.[4] As far as actual bombs go, the PRC has historically maintained a low stockpile of active weapons for use in second-strike launch systems. This shows little sign of changing. The production of new nuclear stockpiles and the deployment of new ballistic missile technologies, detailed in varying degrees by the intelligence community in the past half-decade, suggests little more than a drive to retire old materials and adapt the nuclear deterrent to ever-changing security dynamics in the international system, namely the construction of anti-ICBM missile defense systems by the United States, Russia and others.[5]

While the maintenance of a limited deterrent keeps a lid on regional tensions, visible nuclear modernization efforts on the part of China maintain wider deterrent balances in the international system. Perhaps more importantly, such modernizations act to maintain nuclear parity with India, a nearby power that puts much weight behind its own atomic capabilities as a compensator for relatively weak conventional forces.[6]

Nuclear stockpile renewal in the PRC clearly suggests little change in the Chinese mindset of limited atomic utility. There is no overt reported increase in fissile material production of any significance. Delivery systems, however, are another story.

Until recently, China's deterrent ballistic forces have been composed of missiles first deployed over 30 years ago. The majority of active weapons since the early 1980s have been mated to medium-range, single-stage missiles like the Dong-Feng (DF)-3A, DF-4 and the submarine-launched JL-1, each capable of delivering between three and five megatons of explosive material over a range of up to 8,000 kilometers.[7] One of those aging missile, the DF-5A, is capable of hitting targets in the continental United States with a simple, strategic multi-megaton warhead. The continuing development of advanced missile interceptor defense systems by the United States, however, represents an obvious diminishment of the effectiveness of China's limited deterrent strike capability. Moreover, it is worth noting that, of the ballistic missile types currently in service in China, none are capable of carrying the multiple independently-targeted reentry vehicles (MIRVs) that would allow individual missiles to strike numerous targets and maximize the chances of evading interceptor defenses. It is clear that strategic advancements in missile defense technology and the increasing proximity of Chinese interests to arrayed foreign military assets in the world have been, for more than a decade, incentivizing China to modernize its military tech and compensate for the relative obsolescence of the PLA's ballistic corps.

As a result, new missiles have emerged in the past few years, addressing the changing needs of the Chinese nuclear deterrent and, interestingly, expanding the PRC's ability to cope with other near-term security needs. Short- and medium-range missiles are increasingly outfitting the PLA with all-aspect military capabilities that it otherwise lacks from want of still-modernizing blue water naval and aerial forces, including anti-space and anti-naval weaponry.

Alongside the DF-5A, itself the reported target of future upgrades to make it MIRV-capable, both the new DF-31 and

DF-31A missiles are capable of striking the continental United States, as well as any targets in the greater East Asian region, India and Russia.[8] While there appear to be limited numbers of these new missiles, much in keeping with China's traditional limited deterrent mindset, continued production of DF-31s is expected. Both the Pentagon and the Department of Defense in the United States point to the confirmed construction of new ballistic missile submarines in the Hulodao and Hainan Island shipyards as indication that sea-adapted DF-31s (tentatively called the JL-2) will add to the PLA's ability to shower targets across the region with both nuclear- and conventionally-armed payloads (in parallel fashion to coalition cruise missile strikes in the recent Libyan conflict).[9]

Further augmenting China's ballistic combat capabilities, the DF-21 series is a short-range (around 2,100km) nuclear- and conventional warhead-capable missile that can accurately hit targets across the region. The DF-21 is important because it represents an adaptive component of China's ballistic forces, with already-deployed specialized variants capable of striking non-traditional targets in tactical conflicts.[10] This includes moving sea-going vessels and even satellites, as demonstrated by the destruction of an obsolete satellite with a modified DF-21 missile in 2006.

The last major advance in China's missile technology comes with the incorporation of cruise missile functionality to the veteran H-6 strategic bomber. Though the Bulletin of Atomic Scientists have consistently estimated that a minute proportion of China's nuclear weapons are equipped for aerial launches, the Pentagon has, for several years, highlighted the pairing of the H-6 with short-range (1,500km) DF-10 cruise missiles.[11] In an era where the vulnerabilities of bombers to missile and fighter attack have all but discounted their use as nuclear delivery vehicles, the use of conventionally-armed DF-10s would nevertheless provide the PLA with the near-term ability to launch effective bomber strikes around China's periphery as a means of compensating for current relatively weak littoral defense forces.

Analysis of the above-described emergent systems points to an imbalance in mission profile capabilities. While each of these modern ballistic missiles is nuclear-compatible, the deployment of conventional variants and the lack of intense MIRV development suggests that the PLA would use these weapons as part of a concerted combined-arms grand strategy, augmenting the capabilities of current land-based air power to both protect China's periphery and act as a stop-gap force that can buy time for the maturation of true power projection capabilities.

Ruling the Skies

The Modernization of the PLA Air Force

The modernization of China's combat air forces, while not as rapid as recent ballistic missile development, has nevertheless seen accelerated progress in the past decade. The fulfillment of numerous foreign arms deals and the evolution of a competent domestic avionics sector have successfully furnished the PLA with a variety of practical and relatively modern aircraft series for use in the armed forces, allowing China to field competitive combat planes across East Asia and off the coast. While many critics of China's military expansion lambaste the mass production of modern weapons systems like, combat fighters and ballistic missiles, as unnecessary, such capabilities are clearly important for the fulfillment of PRC grand strategy. Therefore, an understanding of the advancing tactical abilities of the People's Liberation Army Air Force (PLAAF) is important for policy-makers and strategists in the international arena.

From the rise of the People's Republic in 1949 to the days following the Vietnam War, the institution of the People's War led to the prioritization of massive land forces as the sole effective combat branch of the military. The relative ineffectiveness of Soviet-imitated, second-generation combat fighters during the Korean and Vietnam Wars, however, demonstrated the need for a modern air force. This force had to be capable of securing airspace and protecting other components of the military from the kind of devastating bombing campaigns endured in the course of those two wars. Modernization efforts from the late 1970s onwards were slow, and the economic turmoil stymied the rise of any serious development regimes. Nevertheless, eventual economic retrenchment under Deng Xiaoping saw the funding of many development projects so that, by the early 1990s, the PLAAF had successfully developed the training and research programs necessary to start a real expansion of combat air assets.

Since the mid-'90s, a variety of construction and procurement initiatives have led to the replacement of much of China's Cold War-era fleet of combat craft with modern planes comparable to America's F-15, F-16, F-15E and F-18 fighter designs. While a large percentage of China's fleet is still composed of Chengdu F-7 and F-8 units, essentially analogous to the USSR's early-Cold War MiG-21 fighter design, the purchase of advanced Soviet Su-27 ground attack fighters in the early '90s provided the PLAAF with advanced fourth-generation fighter aircraft to both field and study. Further procurement ventures have led to deployment of Su-30MKK and Su-30MK2 multirole heavy attack craft, giving China the ability to project air power farther beyond its borders than ever before.[12]

Domestic versions of these aircraft, like the Chengdu J-10 and the Shenyang J-11, have recently been the cause of some international tensions, as China's main arms trade partner, Russia, has accused the military of illegally reverse-engineering many of the advanced flight and weapons systems delivered to the PLA under contract. Indeed, there is considerable evidence that China's current fighter production lines are merely homegrown versions of Russia's Sukhoi and Mikoyan (MiG) designs. Nevertheless, the increasing deployment of the J-10 and J-11 models, themselves close in capabilities to America's F-15E and F-16, has surely strengthened the strategic capabilities of the PRC. Both craft, like their Russian-built cousin's, have a flight range of just under 4,000km at altitude, allowing them to undertake mission profiles within the area that composes both of the "island chains."[13] The recently tested Chengdu J-20 fighter, reportedly an attempt to incorporate fifth-generation stealth features into a new multirole fighter series, will likely exhibit similar engine and flight range characteristics so that, even with the support of China's limited tanker fleet, the range of the PLAAF is regionally limited.[14] In many ways, this negates the need for sea-based launch platforms in the near-term, as Chinese forces can rely on natural barriers and the strength of land-based aerial and ballistic missile forces to effectively deter and combat threats in the region.[15]

Perhaps the most interesting facet of China's aerial modernization process lies in the fact that a disproportionate amount of funding, production efforts and material resources are funneled into the PLA Air Force as opposed to the Naval Air Force, a branch of the military that receives much attention from commentators in Western defense establishments. After all, the advancement of aircraft-carrying naval capabilities and the construction of sea-based combat aircraft like the J-15 multirole fighter, while an interesting forecast of strategic developments to come, are low-level indicators of China's current strategic mindset, as such forces do not yet practically fit into the effective force structure of the PRC.

It is clear that the massive expansion and technological maturation of PLA land-based aerial and ballistic forces indicates the rise of a "Fortress China" doctrine in Beijing. China sees national defense and regional security as a function of its own ability to control its local periphery and deter proximate foreign threats in the near-term. It therefore intensely funds and deploys continentally-based anti-access forces, from ballistic missiles to diverse aerial craft, to protect its continuing modernization and rise.

Whether or not this mindset continues to define grand strategy in the future will be up to the course of situational developments in the wider East Asian region. Ongoing modernization programs, fueled by the need to respond to perceived challenges in international affairs, will likely shift in focus as the established land-based capabilities of the Fortress China allows the PLA to securely extend its influence out towards, and even beyond, the island chains. With that being the case, it is clear that understanding of both the military capabilities and doctrinal leanings of the PLA will be of paramount importance in the future if policy-makers around the region are to successfully affect cooperative and engaging China policies.

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[1] Norris, Robert S., Kristensen, Hans M., *Chinese Nuclear Forces 2008*, Bulletin of Atomic Scientists, Vol. 64, No. 3, pp. 44

[2] Defense Department, Office of the Secretary of Defense, *The Military Power of the People's Republic of China 2009*, July 20, 2009, pp. 18

[3] Defense Department, Office of the Secretary of Defense, *The Military Power of the People's Republic of China 2005*, July 20, 2005, p. 45; Defense Department, *Military Power of the People's Republic of China* 2008, March 3, 2008, p. 56.

[4] Defense Department, *Military Power of the People's Republic of China 2008*, p. 2.

[5] Kan, Shirley A., *China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues* , Congressional Research Service, August 16, 2010, pp. 55. Kan's report identifies particular concern over the installation of ballistic missile defense (BMD) systems in Taiwan and the Western Pacific, negating its limited deterrent capabilities.

[6] Norris, Robert S., Kristensen, Hans M., *Chinese Nuclear Forces 2008*, pp. 44

[7] Defense Department, The Military Power of the People's Republic of China 2005, p. 45.; Norris, Robert S., Kristensen, Hans M., *Chinese Nuclear Forces 2008*, pp. 43

[8] National Air and Space Intelligence Center, Ballistic and Cruise Missile Threat, NASIC-1031-0985-06, March 2006, p. 20; Defense Department, Military Power of the People's Republic of China 2008, p. 25. These reports annual reports indicate that label MIRV-development in China as at the purely research level.

[9] Hans M. Kristensen, Robert S. Norris, and Matthew G. McKinzie, Chinese Nuclear Forces and U.S. Nuclear War Planning (Washington, D.C.: Fed- eration of American Scientists/Natural Resources Defense Council, 2006), p. 121.

[10] Defense Department, Military Power of the People's Republic of China 2008, pp. 23–24.

[11] CIA, National Intelligence Council, "China: Nuclear Test [Deleted]," National Intelligence Digest, CPAS NID 95-053CX, March 7, 1995, p. 11.

[12] Defense Department, *The Military Power of the People's Republic of China 2005*, pp. 22

[13] Defense Department, *The Military Power of the People's Republic of China 2005*, pp. 22

[14] Defense Department, *The Military Power of the People's Republic of China 2005*, pp. 38

[15] Defense Department, *The Military Power of the People's Republic of China 2005* , pp. 62; A good example of this comes from the last decade of modernization efforts that have lead to almost 500 combat aircraft capable to assaulting targets out beyond Taiwan from continental bases.

About the author:

Christopher Whyte is a Contributing Editor of e-IR. He completed his Bachelor's double degree in both economics and international relations at the College of William and Mary in 2010. He has recently performed research interning at the Cato Institute and is currently finishing his Master's thesis and coursework at George Mason University in Virginia in the United States.