

## China's Naval Modernization: The Implications of Seapower by Andrew S. Erickson



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Cover image: The Chinese People’s Liberation Army-Navy Jiangkai-class frigate Linyi (FFG 547) moors alongside the Luh-class destroyer Qingdao (DDG 113), Joint Base Pearl Harbor-Hickam, Sept. 6, 2013 (U.S. Navy photo by Mass Communication Specialist 1st Class Daniel Barker).

# CHINA'S NAVAL MODERNIZATION: THE IMPLICATIONS OF SEAPOWER

BY ANDREW S. ERICKSON

This month, the heads of the world's navies and coast guards converged on the Naval War College in Newport, Rhode Island, for the International Seapower Symposium (ISS). ISS assembles distinguished international naval leaders to enhance common bonds of friendship and to discuss challenges and opportunities, this time under the theme of "[Global Solutions to Common Maritime Challenges](#)." This was the 21st iteration of ISS, which was first held in 1969. It was the first [with Chinese attendance](#).

After years of invitations that Beijing did not accept, coupled with last year's cancellation of the event due to sequestration, the head of China's navy, Adm. Wu Shengli, led a nine-officer delegation. Participants in the plenary and regional breakout sessions no doubt wondered who exactly Wu is, what mandate he has, what sort of navy he leads, where it is heading and how it will be interacting with the U.S. Navy. This article addresses these timely questions.

## LEADING CHINA'S RAPID NAVAL MODERNIZATION

The son of a former vice governor of Zhejiang province, Wu is one of China's "princelings." According to a [report](#) by Cheng Li, director of the Brookings Institution's John L. Thornton China Center, Wu "formed a client relationship with Jiang Zemin in the late 1980s, when Jiang was party secretary in Shanghai and Wu was the deputy chief-of-staff of the Shanghai Base of the East China Sea Fleet."



*Dr. Andrew Erickson with Admiral Wu Shengli on his Sept. 20, 2014 visit to Harvard University. Photo courtesy of Adam Mitchell.*

Wu joined the People's Liberation Army (PLA) in 1964 at the age of 19, when he was admitted to the PLA Institute of Surveying and Mapping in Xian. Since graduating from the institute in 1968, he has enjoyed a [meteoric rise](#), attaining the rank of rear admiral in 1994, vice admiral in 2003 and admiral on June 20, 2007. Wu also serves on the PLA Central Military Commission (CMC), China's highest military decision-making body. In his capacity as a high-ranking Chinese Communist Party (CCP) member, Wu has been a full member of the CCP Central Committee since 2007, serving on the 17th and 18th Committees.

As PLAN Commander since August 2006, Wu has arguably had the opportunity to leave the greatest mark on the service since Adm. Liu Huaqing used the position to place the PLAN on a stable modern trajectory from 1980-1988. That Wu was retained in October 2012 when all other service-grade military leaders of his age were forced to retire suggests both the Chinese leadership's prioritization of naval modernization and its particular confidence in the admiral.

Subsequently, Wu's position has been greatly facilitated by support from Xi Jinping, who when he assumed all three offices of Chinese executive leadership in 2012 was not only determined to further China's maritime interests and capabilities but also unusually well-placed to do so. Having served as a provincial secretary in Zhejiang, Xi knew about the Wu family's service to the CCP. Xi may also feel a particular affinity to Wu, as they are both princelings comfortable with wielding power vigorously and determined to further bold programmatic reforms. This leadership combination provides a powerful surge for Chinese naval development.

## A NEWFOUND MARITIME FOCUS

Xi rode into office amid a rising emphasis on the importance of the maritime domain to China's ambitions. In November 2012, the [key report](#) of the 18th National Congress of the CPC outlined a "'maritime power' strategy, calling for enhanced capacity for exploiting marine resources, protecting the marine environment and safeguarding China's maritime rights and interests." At the 18th Party Congress that officially instated Xi in office, his outgoing predecessor declared, "We should enhance our capacity for exploiting marine resources, develop the marine economy, protect the marine ecological environment, resolutely safeguard China's maritime rights and interests, and build China into a maritime power." The [accompanying official report](#) advocated "building a powerful maritime state."

Larger reforms underway would entail consolidating and improving governance under Xi, including in the maritime dimension. Four of China's five largest civil maritime forces are being centralized under the State Oceanic Administration (SOA) as a unifying China Coast Guard (CCG). Following an abortive pilot program authorized by Premier Wen Jiabao in 2005, the CCG is gradually consolidating control over several tens of thousands of personnel and hundreds of vessels. Even as older CCG vessels are replaced with new, larger, more sophisticated platforms, hull numbers are projected to grow by a staggering 25 percent over the next few years. China's maturing civil maritime forces promote island and maritime claims in peacetime, applying pressure below the level at which Beijing believes Washington is likely to intervene and freeing the PLAN to focus on preparation for military operations and deployments further afield.

## PLAN'S ROLE IN BROADER MILITARY MODERNIZATION

Under Xi's patronage and Wu's determined implementation, the PLAN is receiving unprecedented resources. In addition to being one of the PLA's most technology-intensive services, it arguably has the most natural external orientation. The PLAN has five service arms: submarine, surface, naval aviation, coastal defense and marine corps. It has three fleets—North, East and South Sea—as well as naval air bases and testing ranges, and controls 25 coastal defense districts with roughly 35 artillery and missile units. This sweeping portfolio makes it relevant to the full range of external military operations that Xi might conceivably employ. Beijing's core internal priorities include ensuring the survival of the CCP and its continued popular legitimacy in China's core Han homeland; supporting the stable administration of borderlands with substantial ethno-religious minorities; and maintaining border security. In addition, PLAN forces support the next layers of China's strategic priorities, which radiate outward like the ever-diminishing ripples produced by a stone entering water.

The current focus of the PLA's development is raising the cost of U.S. intervention in island and maritime claims disputes in the "Near Seas"—the Yellow, East China and South China Seas—by developing potent "counterintervention" capabilities. It is strongly supported by PLAN land-based

aircraft, conventional submarines, offensive mines and cruise missiles. For projecting power into the Western Pacific, PLAN multirole area air defense destroyers and frigates are training in ever-larger and more sophisticated groups. These same vessels have been deploying on anti-piracy missions in the Gulf of Aden since 2008. They escorted Chinese citizens from Libya to safety in 2011 and chemical weapons from Syria to their destruction in 2014. And they routinely conduct naval diplomacy as far away as Europe and Africa. Meanwhile, China's first aircraft carrier, Liaoning, is working to develop deck aviation capacity that may undergird future blue water or "Far Seas" power projection. Leaders like policy options, and for Xi the PLAN is as close to a one-stop shop as the military realm can offer.

This is not to say that Wu's service will enjoy fair winds and following seas in every budget battle. Increasing emphasis on the roles, missions and capabilities of the PLAN and PLA Air Force (PLAAF)—as well as the Second Artillery Force (SAF), China's strategic missile command—enhances potential for another challenge that advanced militaries have long faced: inter-service rivalry. Growing Chinese external interests are gradually eroding the ground forces' still-pre-eminent power. Possible restructuring of China's Military Regions—including reorientation in favor of a more outward-looking posture—appears to be under consideration, but doubtless faces considerable organizational complexity and resistance. The PLA has thus far declined to make a definitive announcement, likely because negotiations remain underway and many rice bowls—primarily ground force officer billets—are at stake.

As the ground forces gradually diminish in relative power, competition among the "three services and one branch" will likely intensify. If increases in defense spending slow down or reverse, such competition will be even more severe as each service strives to develop in new domains and claim vital capabilities. With the most-external geopolitical orientation and operations, the PLAN would seem to have a strong claim to a growing piece of the budget pie. Moving from its current Near Seas-specific three-fleet structure, as some Chinese analysts and doctrinal publications such as 2013's "Science of Military Strategy" suggest, toward a "two-ocean [Pacific and Indian Ocean] navy" would demand more and better vessels. Yet the PLAAF is also striving to control China's burgeoning military space assets, a circumglobal capability vital to supporting information-age warfare. The SAF likewise seeks space responsibilities. Fielding a substantial operational nuclear ballistic missile submarine (SSBN) force might also generate friction between the PLAN and SAF.

## CURRENT AND FUTURE OPERATIONAL CAPABILITIES AND RANGE

China is currently developing and producing as many as six different classes of submarines, all of which are being prioritized as missile-delivery platforms. China's conventional submarines are already relatively quiet; the PLAN boasts the world's premier force. Since the early 1990s, China has deployed Russian-made destroyers and nine classes of indigenous destroyers and frigates. China's fast-attack craft include 60 stealthy wave-piercing missile catamarans. As limitations in air- and sea-lift are overcome, PLA amphibious forces supplemented by large civilian vessels can support an island invasion capability—e.g., in a Taiwan contingency—and perform humanitarian assistance and noncombatant evacuation operations in East Asia and beyond. While it traditionally lagged behind the PLAAF, the PLAN controls a formidable land-based air force of its own and is beginning to develop a carrier-based component.

Though still one of the world's largest, the PLAN's fleet has decreased in number but increased rapidly in quality, defensibility, strike and mission diversity. Together, these developments reflect emphasis on improving quality and Near Seas counterintervention, although the PLAN lacks substantial ability to safeguard contested sea lanes.

PLAN growth through 2020, the end of Xi's term in office, is projected to entail significant but readily anticipated qualitative and quantitative improvements. It is poised to yield a force that is modern by international standards, yet more numerous than China has enjoyed since the early 1990s, when it first began prioritizing quality. Deck aviation and surface vessels outfitted with

land-attack cruise missiles will offer new long-range power projection capabilities that China previously lacked.

Despite this impressive progress, the PLAN suffers a challenge pervading the PLA as a whole: China's defense industry is rapidly advancing in individual weapons systems hardware, but software and coordination lags well behind. Clearly determined to narrow this gap as much as possible, Xi is placing unprecedented emphasis on "combat-realistic training" to raise the PLA's efficiency and ability to execute "local wars under modern informatized conditions," the Near Seas-focused contingencies for which it has been increasingly charged to prepare. Training sophistication and realism, particularly with respect to joint operations, remains uncertain but is definitely improving. Meanwhile, Wu is working to consolidate the PLAN's eight schools into a system centered on a comprehensive academic institution, possibly to be located in Qingdao or Yantai. To this end, after ISS, he led his delegation on a visit to MIT and Harvard, where he peppered administrators with questions.

## THE COST OF CHINESE SEAPOWER

One of the greatest challenges facing Xi and the reforms he envisions is that even as comprehensive implementation will remain challenging over the next few years, larger structural factors are already beginning to slow China's economic rise overall. China's national power growth trajectory may be facing slowdown and dissipation. Beijing's leaders know what economic reforms are needed, but it remains unclear how, when and to what degree they can actually implement them without assuming unacceptable political risks. Gathering domestic problems could combine with rising nationalism to motivate Chinese leaders to adopt more confrontational military approaches, particularly concerning unresolved claims in the East and South China Seas. Rather than portending an impending "collapse," however, these factors may herald China's version of the same slowdown in national trajectory that has afflicted great powers throughout history. This has direct implications for PLA development.

One of China's greatest strengths in recent years has been its ability to allocate tremendous resources rapidly to programs for security, infrastructure and technology development. Many of these programs are seen as extremely inefficient. As competition for resources intensifies, the leadership's ability to allocate increasingly contested funds will face unprecedented tests. Domestic challenges may place increasing demands on, and funding claims by, China's internal security forces, whose official budget already exceeds the PLA's. This has a special significance for China's ability to continue developing its external military capabilities. Beijing has judged that it can sustain multiple overlapping advanced programs simultaneously. China's shipbuilding industry—which, aside from its missile, space and electronics industries, produces China's most advanced indigenous defense products—is producing multiple modern submarine and warship classes. But how long such dynamic investment can be sustained is unclear.

The closer the PLA approaches leading-edge capabilities, the more expensive and difficult it will be for it to advance further, or even to keep up with the general increase in global capabilities. China's cost advantages decrease as military equipment becomes less labor-intensive and more technology- and materials-intensive. The more sophisticated and technology-intensive PLA systems become, the less relative benefit China can derive from acquiring and indigenizing foreign technologies, and the less cost advantage it will have in producing and maintaining them.

Here China is on a demanding treadmill that has long bedeviled other nations developing advanced militaries. Maintaining a leading navy is increasingly expensive. Military shipbuilding cost escalation approximates that of other weapons systems, such as military aircraft, making this a revealing example. Cost control is complicated by relatively small production numbers in the best of cases and by rising standards, as today's ships and the conditions under which they are produced and operated are far more sophisticated than their predecessors. In "[The Cost of Seapower](#)," Philip Pugh marshals considerable historical data to suggest that while countries tend to spend a con-

stant percentage of their economy on defense over time, the cost of ships and weapons increases faster than inflation, typically at 9 percent. At 2 percent inflation, this would compound to costs doubling each decade. Pugh finds that even 2 percent per annum naval budget growth—excessively optimistic for most developed Western nations—would tend to require an annual average of 3.5 percent reduction in fleet numbers. In practice, navies find ways to save costs and innovate, for instance by shifting given missions to smaller platforms. In an example of its emphasis on civil-military integration, China is accomplishing just such a mission shift by strengthening its coast guard—consolidating its structure and increasing its size—and assigning it missions previously assigned to PLAN. Eventually, however, navies typically find that the cost growth challenge is constant and forces major numbers reductions over time.

RAND’s 2006 study “[Why Has the Cost of Navy Ships Risen?](#)” similarly concludes that the cost growth rate for U.S. Navy vessels over the past half-century is 7-11 percent, with economy-related factors approximating inflation and customer-driven demands accounting for the remaining majority. Of these, ship weight, power density and sophistication are the largest cost drivers. In Pugh’s analysis, such dynamics make it essential to avoid what he terms the “Everest syndrome”: constant selection of the most advanced ship possible over a more conservative approach based on competition with actual adversary capabilities. Mass production of the Type 056 Jiangdao corvette and Type 022 Houbei fast attack craft suggests that China is avoiding the “Everest syndrome” in pursuing proximate priorities thus far. A Chinese buildup of aircraft carriers and other large vessels, by contrast, could change that dynamic to Beijing’s detriment.

A combination of rapid GDP growth and shipbuilding prowess puts a country in an enviable sweet spot. Between the world wars, for instance, Japan’s rapid economic growth enabled it to bear ever-increasing ship development costs at a constant defense burden. World naval powers, including the Netherlands, the U.K. and the U.S., have likewise enjoyed such conditions in their years of rapid growth. Today China enjoys a similar combination of factors, but this is unlikely to last.

## REGIONAL IMPACT AND IMPLICATIONS

The abovementioned challenges are likely to manifest most strongly after Wu and Xi’s retirement. They would probably only reinforce a pre-existing pattern: Chinese prioritization of combat capabilities for Near Seas over Far Seas contingencies. Already, Beijing has significant power that it can bring to bear in the Near Seas. It is involved in disputes with all of its maritime neighbors and is using civil maritime forces—typically backed by PLAN forces waiting over the horizon—to pressure them. These forces frequently enter the territorial waters of the Senkaku/Diaoyu Islands administered by Japan and covered under Article 5 of the U.S.-Japan Security Treaty, with Beijing claiming that China administers the disputed area. They have driven Philippine forces from Scarborough Shoal in April 2012, [after a confrontation](#) in which Beijing reneged on an explicit agreement with Washington to return to the status quo ante. During the summer of 2014, they sprayed and rammed Vietnamese vessels attempting to approach a Chinese oil rig drilling in waters disputed with Hanoi, sinking one and triggering [violent riots across Vietnam](#).

Meanwhile, Chinese civil maritime and naval forces harass their U.S. counterparts conducting legal surveillance activities in international waters and airspace that Beijing believes threaten its security interests. The most prominent of many close encounters—many of which go unreported—are the aerial incidents of 2001 and 2014 respectively. On April 1, 2001, following a spate of dangerously close approaches by PLAN J-8 fighters to a U.S. Navy EP-3 reconnaissance aircraft, pilot Wang Wei accidentally flew his faster-flying jet into the lumbering American plane 70 miles from Hainan Island—nearly six times the 12-mile limit for national airspace. Forced to make an emergency landing there, the 24-member American crew was detained for 10 days until careful diplomacy resolved the issue; their aircraft was later returned in pieces after being scoured for secrets.

While dangerous Chinese intercepts abated for some time, new incidents emerged this year. On

Aug. 19, a PLAN J-11 fighter buzzed a P-8 reconnaissance plane conducting routine operations in international airspace 135 miles from Hainan, bringing its wingtips within 20 feet before flying up directly in front of the U.S. Navy aircraft and performing a barrel roll over its top. Official PLA statements claimed, improbably, that the J-11's behavior was safe and demanded that the U.S. stop such flights.

Such Chinese actions have triggered widespread regional concern. Many of China's neighbors are strengthening military capabilities and cooperation with the U.S. Simultaneously, however, China is their largest trading partner. And some, such as the Philippines, lack the capability or willingness to balance against China substantially. Washington faces challenges in sustaining a credible Asia-Pacific rebalance that deters any Chinese attempts to use force, or the threat of force, to undermine peace and stability in an economically dynamic region that remains haunted by history. This decade likely represents the most difficult window of vulnerability in this regard, as Washington confronts domestic budget constraints while Beijing is not yet slowed by its own.

Beyond the disputed Near Seas, however, there is already far greater potential for productive cooperation to support the security of the global maritime commons and the international system that relies on them. Since December 2008, China has dispatched 18 anti-piracy task forces of 3-4 ships each to the Gulf of Aden. While not integrating with foreign counterparts on principle, they [have protected](#) more than 6,000 Chinese and foreign vessels and saved 60 from some form of attack, with no end in sight. While China sent a spy ship uninvited to Rim of the Pacific (RIMPAC) 2014, the largest international maritime exercise, it also sent four invited ships to cooperate with other navies.

## CONCLUSION

Xi Jinping is presiding over a golden age of PLAN development, entrusting Adm. Wu to ride herd over the numerous forces necessary for successful implementation. This rising tide suggests that Wu will almost certainly be retained until the 19th Party Congress in 2016, giving him just over a decade as PLAN commander, more than even Liu Huaqing's path-breaking eight years. Wu's legacy is likely to be a PLAN that grows far more rapidly in quality than quantity; gives China unprecedented options for furthering Near Seas claims; coordinates closely with a consolidating Coast Guard to maximize peacetime progress therein; learns constantly from and cooperates increasingly with foreign navies in the Far Seas; strengthens nascent power-projection capabilities; deploys more vessels on increasingly diverse Far Seas peacetime missions; still lacks substantial combat capacity against a great power navy in the Far Seas; and costs ever more to develop, maintain and crew. All these factors will force important choices in coming years.

If Admiral Wu attends the 22nd ISS in 2016, he will almost certainly not see Chinese students at the Naval War College. The FY2000 Defense Authorization Act will likely continue to effectively prohibit PLA officers from studying at U.S. institutions under officially sanctioned exchanges. What he will see is an international naval community that is increasingly accustomed to, and welcoming of, PLAN participation in multinational exercises and forums. In the cooperative reaches of the world's maritime commons, there is considerable space for Wu's service to continue to develop its identity and global role. That alone would be an impressive legacy for China's longest-serving naval commander in the modern era. □

*The views expressed here are the author's alone. They do not represent the policies or estimates of the U.S. Navy or any other organization of the U.S. government.*

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