China’s Naval Rise and the South China Sea: An Operational Assessment

by Felix K. Chang

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Abstract: Over the last fifteen years, the steady rise of China’s naval capabilities has received a level of attention unmatched since the Soviet navy’s expansion following the Cuban Missile Crisis. Yet much of that attention has focused on what that rise has meant for Taiwan’s security or a possible contest with the United States. But Beijing’s seaward territorial concerns also reach far into the South China Sea. And it is there that the military balance has most swiftly swung in China’s favor as a result of its modernization program. This article will examine not only how the military balance has shifted, but also what Southeast Asian countries, particularly Vietnam and the Philippines, could do to best preserve their territorial interests in response to that shift.


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The perennial source of tension among China and the countries of Southeast Asia have been the contested waters of the South China Sea and the Paracel and Spratly Islands that lie within them. Beijing and six other governments claim all or parts of the area. China’s claims encompass nearly all the waters between its southern coast and the northern coast of Borneo. While all the claimants have detained fishing boats that encroach on their territories, only China has used force to assert its claims. In 1974, it seized the Paracel Islands from a politically isolated South Vietnam, and in 1988 it clashed with Vietnam in the Spratly group when its Soviet benefactor withdrew from the region. But for most of the following two decades, China largely refrained from direct confrontation, as it recognized that such belligerent actions could prompt Southeast Asian governments to welcome other powers into the region at a time when it was unprepared to deal with them.\(^2\) That

approach was well embodied in Deng Xiaoping’s guidance: “Coolly observe, calmly deal with things, hold your position, hide your capacities, bide your time, accomplish things where possible.”

Hence, the People’s Republic of China (PRC) tried to allay Southeast Asian concerns with a pledge of a beiping jueqi (peaceful rise) and with more recent aspirations for a bexie sbijie (harmonious world). It downplayed territorial disputes and stressed its peaceful intentions. Even so, the economic benefits that Chinese prosperity brought to the region were probably as persuasive as its diplomacy. No doubt Southeast Asian countries were relieved when China refused to participate in the competitive currency devaluations that swept the region during the Asian financial crisis of 1997–1998. They were further reassured when Beijing signed the Association of Southeast Asian Nations’ (ASEAN) Declaration on the Conduct of Parties in the South China Sea—more simply known as its code of conduct—in 2002 and its Treaty of Amity and Cooperation a year later. Many in Southeast Asia saw these acts as stepping stones towards gaining Chinese acceptance of the region’s multilateral norms.3

But Beijing never warmed to multilateral solutions. Rather, it continued to insist on bilateral negotiations, most notably with the Philippines in 2004. And as China’s economic influence and military strength grew, so too did its confidence. In late 2007, China upgraded the status of the administrative authority that governs the Paracel and Spratly Islands to a “county-level city,” part of its Hainan province. Then in March 2010, China listed for the first time its South China Sea claims among its “core interests,” alongside previously claimed Taiwan, Tibet, and Xinjiang.4

As a consequence, several Southeast Asian countries have deepened their military ties with the United States and Japan. In July 2010, Southeast Asian irritation with China boiled over during the 17th ASEAN Regional Forum, at which leaders from across Southeast Asia complained about China’s increasing assertiveness in the South China Sea. The United States followed up with an offer to facilitate a multilateral resolution to their overlapping South China Sea claims—breaking from its long-standing policy of non-involvement in the dispute. The offer incensed China, whose foreign minister responded with a warning not to “internationalize” the issue. With exceptional timing, three days later, the Chinese navy conducted a major combined-arms exercise in the South China Sea that featured many of its newest aircraft, ships, and submarines and included live-fire missile tests. With China’s most senior

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military leaders in attendance, many in Southeast Asia read the exercise as a clear deterrent message.5

At a ministerial-level conference a year later, Chinese General Liang Guanglie reaffirmed that Beijing would “never seek hegemony or military expansion” and its policy in the South China Sea was “purely defensive in nature.” But during the first half of 2011, Chinese ships unloaded construction materials on Philippine-claimed Amy Douglas Reef and harassed a Philippine ship and two Vietnamese oil exploration vessels—cutting the cables towing seismic equipment in the latter two cases. When Vietnam retaliated through conducting live-fire exercises, China responded with its own firepower display. Then in September 2011, Beijing warned both Hanoi and New Delhi over an Indian oil company’s exploration of blocks awarded by Vietnam in the South China Sea. Such heightened tensions have refocused attention on the region’s shifting military balance. Certainly prudent Southeast Asian analysts are taking closer note of China’s capabilities and are beginning to reassess their own countries’ strengths and vulnerabilities.6

**China’s Modernization**

China began to accelerate the modernization of its armed forces in the 1990s. After witnessing the overwhelming success of sophisticated American arms in the first Gulf war in 1991 and their own failure to deter American intervention during the 1995–1996 Taiwan Strait Crisis, Chinese leaders decided to embark on a far-reaching military modernization program. China’s military not only replaced its outdated equipment, but also revised its war-fighting concepts and professionalized its personnel. But while most of its new capabilities have been directed at meeting the contingency challenges posed by Taiwan and the United States, China could also use many of its new

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China’s Naval Rise

capabilities—particularly its modern air and naval platforms that extend its reach—to assert control in the South China Sea, where Beijing’s furthest maritime claims extend over 1,500 km from Hainan Island.

Without question China’s air and naval forces have become more capable. That advance can be largely attributed to qualitative improvements in, rather than a rapid expansion of, their force structures. China’s navy commissioned no fewer than ten new destroyer and frigate classes since the 1990s, many equipped with missile and radar technologies that filled gaps in its anti-air warfare abilities and enhanced its surface combat capabilities. And though its South Sea Fleet, which patrols the South China Sea, has historically been the last of China’s three fleets to modernize, it was often the first to receive new combatants for much of the last decade. Since 2000, its sub-surface force added two Shang-class nuclear attack submarines as well as four Kilo-class, three Song-class, and the first of the newest Yuan-class diesel-electric submarines. Meanwhile, its surface fleet added two Luyang II-class, two Luyang I-class, and a Luhai-class destroyers as well as two Jiangkai-class and four Jiangwei II-class frigates to its inventory. Just as significant, the South Sea Fleet upgraded its amphibious lift capacity with two Yuzhao-class LPDs, which can easily support the sort of ship-to-shore missions needed in the Spratly Islands, in addition to an assortment of new-build Yuting II-class LSTs, Yunshu-class LSMs, and Yubei-class LCUs.7

Similarly, the Chinese air force has received a steady flow of new combat aircraft, including fighters like the Su-27SK, Su-30MKK, J-10, and J-11—the Chinese-built version of the Su-27. But more importantly in the South China Sea, China’s naval air force, whose role it is to support naval operations, has started to take delivery of more modern aircraft as well, including Su-30MK2 fighters, JH-7A fighter-bombers, and Y-8J airborne early warning aircraft. It has also started to convert a small number of its H-6D bombers into aerial refueling tankers. While these new aircraft were first introduced to naval air force regiments in the North and East Sea Fleets, some have now begun to arrive in those assigned to the South Sea Fleet.

At Lingshui on Hainan, the 9th Fighter Aviation Division received a regiment of JH-7A fighter-bombers and will likely receive the naval air force’s second batch of 24 Su-30MK2 fighters to replace the aging J-8 fighters in one of its other two fighter regiments. The new fighters will greatly improve the division’s ability to conduct air superiority and strike missions. But even with the longer ranges of its new aircraft, the South Sea Fleet would have difficulty maintaining a robust air cover over the southern reaches of the South China Sea. Dedicated aerial refueling tankers, which have yet to arrive, would only partially solve the problem.

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What would better ensure a persistent and timely air cover over all the South China Sea is China’s new aircraft carrier. Finishing its initial sea trials in August 2011, it has already had a long history. Designed by the Soviet Union and laid down in 1985, it sat incomplete in a Ukrainian shipyard when the Cold War ended. Ukraine eventually sold the warship to China in 1998, but five more years passed before it was towed to Dalian. In the late 2000s, reports surfaced that China had begun to refit the ship. China’s naval chief confirmed these reports in June 2011. But as the aircraft carrier approached its commissioning, many opined that without a capable screen of escort ships, the vessel would not present a serious challenge for the United States. They are likely correct. However, if China’s Central Military Commission deploys it to the South China Sea with a complement of capable fighters, the new aircraft carrier would be an even match for most Southeast Asian air forces, in the absence of U.S. naval air power. While its short-takeoff flight deck may not be configured to support sustained strike missions, the aircraft carrier would substantially improve China’s ability to provide air cover for its naval forces operating in the region.8

Of course, the quality of that air cover will depend on the aircraft that the vessel embarks. At this writing, the most likely candidate is the J-15 fighter, which was unveiled in April 2011. The J-15 is the naval variant of the J-11 and incorporates some performance features gleaned from a Su-33 fighter prototype that China acquired from Ukraine. The J-15 is well suited for air superiority missions, though its range is likely to be shorter than the J-11’s because it must be light enough to take off from a ski-ramp flight deck. For the same reason, the J-15’s combat load is likely to be lighter as well, making it more difficult for the fighter to carry the heavy ordinance needed for strike warfare. In any case, the fighter must still complete its flight tests before it becomes available to the fleet.9

To better accommodate the South Sea Fleet’s new ships, China has constructed a major naval base at Yalong Bay at the southern tip of Hainan. Unlike the older Yulin naval base located in the heart of Sanya, the new base at Yalong Bay sprawls across a spacious tract of land about 15 km east of the city.


Construction on the base began in the early 2000s; and it is divided into two sections. The western section has two 1,000-meter piers that normally service surface ships. Located on a peninsula, the eastern section is more isolated, with only a single road connecting it with the base’s western section. The eastern section is also larger, with its own 800-meter wharf, four 230-meter piers for submarines, and most notably, a submarine tunnel. Given the tunnel, and the similarity of the structures near it, to those found at Jianggezhuang, China’s long-serving strategic submarine base, it was no surprise to see China’s new nuclear-powered submarines pier side. Continuing construction on the base and the submarine tunnel are clearly evident from commercial satellite imagery. While ship cranes and repair facilities remain absent, if installed, the base would be a strategic place from which to mount operations into the South China Sea (Fig. 1).

Observers have long postulated the role of China’s DF-21D ballistic missiles as anti-ship weapons to counter U.S. aircraft carriers. But in South-east Asia, it is China’s arsenal of land-attack ballistic missiles that pose the bigger challenge to Southeast Asian defenses. Given the difficulties involved in integrating the DF-21D with a sufficiently precise ocean surveillance and targeting system to hit a large emissions-radiating target like an aircraft carrier at sea, small warships operating in the littoral would likely pose too high a hurdle for the moment. Rather, Southeast Asian militaries should worry more about the disabling possibility of a conventional ballistic missile strike against their air and naval bases in concert with a naval operation. Over the last decade, China’s updated operational doctrines have suggested such a use for conventional ballistic missiles and its services have begun joint exercises.

Author’s analysis from commercial satellite imagery retrieved on Jul, 23, 2011 and Jul. 5, 2006.


Certainly the Chinese navy’s ability to conduct sustained operations in distant areas has improved with its modernization. But it was not until December 2008, when Beijing decided to send a small flotilla to the international counter-piracy effort in the Gulf of Aden, that China’s navy began accruing practical experience. For the first time, the navy confronted the complexities of supporting a distant deployment and learned how to navigate them. Since then, China’s East and South Sea Fleets have sent a number of flotillas—always comprised of two new destroyers or frigates with a Fuchi-class replenishment ship—in four-month rotations.13

While China’s naval modernization has been impressive, the PRC has not been alone. Both the United States and Japan have continued to modernize their own fleets and would be wise to continue to do so. But most countries in Southeast Asia have not modernized their air and naval assets at a similar pace, despite their importance to the security of their South China Sea claims.

13 Almost all of the Chinese South Sea Fleet’s newest destroyers and frigates served with the international counter-piracy patrol since December 2008. These include all its Luyang I-class and Luyang II-class destroyers and three of its four Jiangkai II-class frigates as of November 2011.
Southeast Asia’s Modernization

Alone among Southeast Asia’s countries, Singapore has fully modernized all three of its armed services and raised them to the first rank—making the island country an important regional security actor. Singapore invested not only in new F-15SG fighters, Archer-class submarines with air-independent propulsion, and Formidable-class frigates, but also in the joint-service training and information system integration necessary to maximize their combat potential. By 2012, Singapore’s 111 Squadron will have replaced its last E-2C airborne early warning and control aircraft with longer-endurance Gulfstream G550s equipped with more capable EL/W-2085 radars. Though it has no direct stake in the South China Sea territorial row, Singapore is a country whose economy is highly dependent on the trade that flows through its waters. As such its interests in freedom of navigation are often closely aligned with those of the United States.14

But beyond Singapore, the pace of Southeast Asia’s military modernization over the last decade has been spotty. Many of the region’s countries have seen the technological edge they once held over China during the early 1990s erode. Once hailed as “economic tigers,” countries like Indonesia, Malaysia, and Thailand embarked on ambitious modernization programs in the 1990s, which in Thailand’s case culminated in the acquisition of a small aircraft carrier in 1997. But when the Asian financial crisis ravaged their economies, many were forced to slash their defense budgets and most continued their fiscal restraint long after the crisis ended.

Only a handful of countries pressed ahead with their modernization efforts. Malaysia acquired two Lekiu-class frigates in 1999, two Scorpene-class submarines in 2009, and 18 Su-30MKMs beginning in 2007. But it had to forego two additional Lekiu-class frigates for six less-capable, but lower-cost, Kedah-class offshore patrol vessels. And even now as it looks to procure its next-generation fighter, it has had to defer its acquisition of airborne early warning and control aircraft and cut its training budgets. Meanwhile, Vietnam made incremental improvements during the 2000s, ordering two Gepard-class frigates, ten Tarantul V-class corvettes, and four Su-30MK2V fighters. But delivery of the ships has been slow—with only the two frigates and three of the corvettes now in service. Still, Hanoi decided to accelerate its modernization process, boosting its defense budget by 70 percent and placing orders for six Kilo-class submarines and 20 additional Su-30MK2V fighters in 2009.15

But Malaysia and Vietnam have been exceptions. For the most part, Southeast Asian countries entered an era of introspection and instability after the Asian financial crisis. A number of the region’s long-serving national leaders were swept from office, including Indonesia’s Suharto and Malaysia’s Mahathir Mohamad, while Thailand stumbled into a series of continuing political crises. At the same time internal insurgencies flared. The Abu Sayyaf and Moro Islamic Liberation Front became more active in the Philippines and a Muslim insurgency escalated in southern Thailand. To the south, Indonesia became embroiled with an insurgency in East Timor that led to its secession in 2002, and then was staggered by a tsunami that killed over 200,000 people in 2004.

Such incessant internal turmoil shifted attention away from external defense, especially when many Southeast Asian analysts believed that ASEAN’s multilateral engagement with China would lead to negotiations over territorial disputes. Above all, they pointed to how China’s interest in the region’s economic stability would mitigate the potential for military conflict. Such assessments peaked after Beijing signed ASEAN’s code of conduct. As a result, the combination of constrained defense budgets, focus on internal security, and optimism over the benefits of economic integration led many Southeast Asian capitals to devote only enough resources to maintain their military capabilities, rather than to truly modernize them.

Assessing the Military Balance

Southeast Asia’s failure to modernize at pace comparable to China’s since the late 1990s has tilted the military balance in the South China Sea. Many factors influence military power; among the most significant in naval operations are geography and technology. In the South China Sea, geography mostly favors Southeast Asia’s claimants. Brunei, Indonesia, Malaysia, the Philippines, and Vietnam are all relatively close to the waters that they claim, whereas China is more distant. In addition, Malaysia, the Philippines, and Vietnam operate small airfields in the Spratly group with more nearby on Borneo and Palawan islands.

That geographic advantage augmented Southeast Asia’s technological upper hand during the early 1990s. While no single Southeast Asian claimant could have secured the entire area, together they could have exercised a sea

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denial strategy that would have frustrated a Chinese attempt to assert persistent sea control in the South China Sea, had they tempered their territorial claims on one another. Although China won both engagements fought in the region, they were brief surface actions decided with gunfire and torpedoes. In the first action, Chinese torpedo boats sank a South Vietnamese minesweeper, whose navy withdrew after the United States declined to support it; in the second, two Chinese frigates simply overwhelmed three lightly-armed Vietnamese transports. In neither case was China’s navy forced to maintain sea control in the areas where it fought.\textsuperscript{17}

Surely the Chinese navy’s most critical operational shortcoming in the early 1990s was its inability to defend itself against aerial adversaries with standoff weapons. At that time, only a handful of its ships fielded surface-to-air missiles or close-in weapon systems. And none of its naval air force’s land-based fighters had the range to provide adequate air cover over the South China Sea. While its fighters could have used the Woody Island runway to refuel, its limited space would have made a high sortie rate doubtful. Even after the South Sea Fleet receives its new regiment of Su-30MK2 fighters, China would be hard pressed to maintain a combat air patrol of more than six Su-30MK2s over the South China Sea at any one time, due to the need to rotate fully-fueled fighters to the patrol and the long transit time from their base to the Spratly Islands. Only if the South Sea Fleet converts some of its H-6D bombers into aerial refueling tankers would some of that pressure be relieved.\textsuperscript{18} Still, without airborne early warning and control aircraft, coordination with ships at sea and effective interception would remain problematic.

Since the mid-1990s, however, China’s accelerated naval modernization has provided the South Sea Fleet with several ships equipped with capable air defenses, including Luyang II-class and Luyang I-class destroyers and Jiangkai II-class frigates. The Luyang II-class destroyer is fitted with vertical launchers armed with 48 HHQ-9 surface-to-air missiles, which have a range of 100 km—nearly outdistancing the air-launched AGM-84 Harpoon anti-ship cruise missile. The Luyang I-class destroyer also fields a vertical launch system, but one that houses 48 SA-N-12 surface-to-air missiles that have a shorter 35-km range. Finally the Jiangkai II-class frigate is armed with HHQ-16 surface-to-air missiles that are reportedly capable of a cold launch. All these ships are


\textsuperscript{18} Conceivably China’s naval air force could use its air force’s 10 H-6U aerial refueling tankers based at Leiyang in Guangzhou Military Region.
also equipped with two Type 730 close-in weapon systems, akin to the American Phalanx, to defeat incoming anti-ship cruise missiles. While adequate land-based fighter cover would remainlogistically troublesome, China’s aircraft carrier and its complement of J-15 fighters, could provide persistent and timely air support for Chinese ships operating in the region.

Meanwhile, China’s navy strengthened its surface warfare capability with new anti-ship cruise missiles. While the navy’s standard YJ-83 anti-ship cruise missile is still a formidable weapon with a range of 120 km, the YJ-62 anti-ship cruise missile, aboard its Luyang II-class destroyers, have an even longer range of 280 km. Finally China’s new attack submarines, such as the Shang-class, Song-class, and Yuan-class boats that are assigned to the South Sea Fleet, are all equipped not only with torpedoes, but also with the C-801A anti-ship cruise missile that has a 40-km range.

Given the number and reach of China’s anti-surface weaponry, Southeast Asian surface forces would be at a grave disadvantage. The Malaysian navy’s standard MM40 Exocet missile has a range of just 70 km and only its two Lekiu-class frigates are currently equipped with a surface-to-air missile capability. While its Kedah-class corvettes are built to accommodate anti-ship cruise missiles and air defenses, these add-on systems await future funding. Armed with SS-N-25 anti-ship cruise missiles that have a range of 130 km, Vietnam’s Gepard-class frigates and Tarantul V-class corvettes pose a more serious challenge to China’s surface forces at sea. But these ships have limited air defenses, with short-range surface-to-air missiles aboard the Gepard-class frigates being the most sophisticated. Clearly Southeast Asian surface combatants will have to carefully consider how they can best exploit the use of emissions, littoral clutter, and targeting data to get close enough to a Chinese naval force so that they can launch a sufficient number of missiles to penetrate its defenses.

The challenge of facing China’s formidable array of anti-surface weaponry raises the importance of Malaysia’s two Scorpene-class and Vietnam’s six Kilo-class diesel-electric submarines, especially since Chinese proficiency in anti-submarine warfare has yet to meaningfully improve. Difficult to detect underwater, Malaysia’s submarines can more easily approach a Chinese force to employ their SM39 Exocet missiles—one of which was successfully tested at a range of 40 km during fleet exercises in August 2010. And while it is uncertain what armament will accompany Vietnam’s new submarines, they will presumably field the same highly lethal SS-N-27 missiles with a range of 180 km found aboard China’s and India’s Kilo-class submarines. In a sustained contest, Southeast Asia’s submarines will be a crucial factor.

Control of the skies above the South China Sea is another important consideration. If the South Sea Fleet must rely on its land-based Su-30MK2
fighters for air cover, then Southeast Asian commanders should attempt to draw the Chinese fighters as far south as possible before contact, exacerbating China’s logistical problem. There Malaysia’s F/A-18 and Su-30MKM fighters or Vietnam’s Su-30MKV fighters could mass to engage and neutralize the likely smaller Chinese combat air patrol to achieve local air superiority. They then could target Chinese helicopters and unmanned aerial systems providing over-the-horizon surveillance and targeting data to the Chinese fleet, so that Southeast Asian warships could close for an attack. While Southeast Asian fighters could also mount a strike themselves with air-launched cruise missiles, given the need to first overcome China’s air cover, their commanders would have to carefully weigh the risks of sending fighters into aerial combat carrying such heavy ordinance. However, if the Chinese aircraft carrier were present, Southeast Asia’s air forces would face the even more daunting challenge of defeating a comparable number of well-fueled J-15 fighters. In that case, Southeast Asian success may hinge on their air forces acting in concert, which would require both prior political agreement and joint practice.

Even so, Malaysia’s and Vietnam’s fighters and submarines operate from a small number of bases, creating a vulnerability that China could exploit. All of Malaysia’s Su-30MKMs are based at Gong Kedak and all of its submarines will be located at a new base at Sepanggar Bay. Similarly, all of Vietnam’s Su-27s and Su-30MKVs are based at Bien Hoa and all of its submarines will likely be stationed at Cam Ranh Bay, where Vietnam has started a three-year upgrade of the port’s ship and submarine repair facilities. These centralized bases would make attractive targets for either Chinese long-range air or ballistic missile forces, should Beijing choose to escalate a conflict. While Malaysia’s land-based air defenses include several Rapier surface-to-air missile systems, they are only designed to respond to low-altitude threats and would be ineffective against ballistic missiles. Vietnam would stand a better chance. In 2003 it ordered the high-altitude S-300PMU surface-to-air missile system, which can hit fast targets with a reputed 70 percent accuracy, including ballistic missiles. While the order reportedly included two batteries, only one battery of 12 missile launchers and 62 missiles has been verified, and photography indicates that it had been deployed near Hanoi.20

Certainly China’s naval base at Yalong Bay makes it easier for the South Sea Fleet to support large-scale naval operations in the South China Sea. With the initiative, the Chinese navy could stage an assault from there to seize the

disputed islands with only H-6G bomber support, as some have suggested. But the success of such an operation—were it to meet protracted resistance—would require persistent maritime surveillance that could detect and discriminate approaching hostile targets from the littoral and commercial clutter. While China’s navy has access to a range of land-based HF-DF systems and over-the-horizon radars as well as to its shipboard sensors, integrating them to produce a coherent and dynamic awareness is still an important challenge for it to resolve.21

That is especially true when considering the more likely scenario in the South China Sea, in which a confrontation at sea escalates and forces are alerted and fed into combat. In that case, the operational and structural readiness of both Chinese and Southeast Asian forces would be vital in determining the correlation of forces at the point of contact. Given the distance from Yalong Bay to the northern edge of the Spratly group, South Sea Fleet warships surging from there would have to steam 30 hours at 20 knots to bring their mass to bear. Thus, if Southeast Asian forces, particularly those of Malaysia and Vietnam, were to maintain a higher state of readiness, they could deploy sufficient mass more quickly to balance the terms of engagement.

Still, China has clearly come a long way in overcoming its geographic disadvantage in the South China Sea by investing in technology at a faster pace than Southeast Asia. As a result, Southeast Asian countries must now play catch-up. While some, like Vietnam, are already well into the process of rearmament, others, like the Philippines, are just getting started.

Vietnam

Embarking on its own accelerated modernization in 2009, Vietnam clearly focused on technologies with a South China Sea contingency in mind. Vietnam’s air force not only ordered new Su-30MKV fighters, but also based them at Bien Hoa, close to the Spratly Islands, rather than near Hanoi. Meanwhile, appreciating China’s lead in surface warfare capability, Vietnam’s navy chose not to acquire additional surface ships, but instead invested in Kilo-class submarines and the port facilities needed to support them. And its purchase of six submarines ensured that at least two submarines could be on patrol at any one time. A similar operational calculation likely led to Vietnam’s negotiations with Russia in August 2011 for additional K-300P

coastal missile batteries armed with P-800 Yakhont ramjet-powered cruise missiles with a 300-km range. These mobile missile batteries operating from Vietnam’s coastline would help keep Chinese warships further offshore, though they lack the range to cover the Spratly group.22

Vietnam has taken many of the logical steps to rebuild a conventional military deterrent to China in the South China Sea. More could be done. Vietnam would do well to acquire additional S-300PMU surface-to-air missile batteries to protect its defense infrastructure at Bien Hoa air base and Cam Ranh Bay naval base. And at a more basic level, it could improve the concealment, survivability, and redundancy of its facilities. That may consist of hardened aircraft shelters and fuel storage, runway repair kits, and preparations for alternate support facilities, including tenders for its submarines.

Still, the Vietnamese military’s top task should be to improve the operational and structural readiness of its forces. For the most part that means higher levels of maintenance and training to ensure that more combat platforms are operational and capable of rapid deployment. But given that its only prior experience with submarines was with the four-man Yugo-class midget submarines that it acquired from North Korea in 1997, Vietnam’s navy will have a particularly steep learning curve when its Kilo-class submarines arrive. After China acquired its first Kilo-class submarines in the 1990s, it had to overcome a host of poor maintenance practices that led to equipment failures. In addition, Vietnam’s submariners would be wise to devote as much training for anti-submarine warfare as they would for surface warfare to exploit Chinese vulnerabilities. To do so, it could cooperate with foreign navies, like Japan’s, which have a particular expertise in anti-submarine warfare.

As for Vietnam’s air force, it will need to increase the number of flying hours for its Su-27SK and Su-30MKV pilots as well as incorporate more realistic combat training exercises. It should also supplement its land-based HF-DF and over-the-horizon radar capabilities or consider the purchase of additional surveillance assets, such as maritime patrol aircraft with airborne early warning and control systems, to ensure that its air and naval commanders can maximize the use of their smaller forces.

But possibly Hanoi’s biggest challenge is financing the cost of completing and maintaining its new hardware purchases. The contract value of the Kilo-class submarines, Gepard-class frigates, and 20 Su-30MKV fighters that it ordered in 2009 and 2010 totaled $3.6 billion. By comparison, Vietnam’s entire 2010 defense budget amounted to only $2.4 billion. In fact, payment for Vietnam’s last batch of Su-30MKVs was reportedly tied to the proceeds from the sale of its natural gas and nuclear power. Such a mechanism is more difficult to arrange when it comes to the fuel, equipment repair, and maintenance that will be needed to support operations and training. A single

diesel-electric submarine’s annual operating cost can average in the tens of millions. These added annual expenditures are sure to strain Vietnam’s defense budget, should its economy falter.\(^{23}\)

**Philippines**

With most of the Spratly Islands lying only a few hundred kilometers off its shores, the Philippines is well situated to defend its claims in the South China Sea. But it has almost no capacity to do so. After decades of counter-insurgency combat across its archipelago, its military has been completely oriented towards internal security. Heavily leaning on its mutual defense treaty with the United States for its external protection, the Philippines has allowed its air force and navy to decay. Like Hanoi, Manila has recognized its need to modernize its conventional forces, but until recently has not devoted the resources to fund such a reconstitution.\(^ {24}\)

In late 2005, the Philippines decommissioned its last F-5A fighters, leaving the country with no jet combat aircraft. Ten years earlier, these fighters played a role in asserting Philippine sovereignty over the Spratly group when China descended on Mischief Reef. At the time, the Philippine air force deployed them to Puerto Princesa on Palawan Island, where they could cover the Philippine navy as it removed Chinese markers from five other reefs and shoals. But when Chinese patrol ships confronted a Philippine survey vessel near Reed Bank in March 2011, Manila could only dispatch an OV-10 light attack aircraft and a BN-2 light transport to observe the area. By the time the two slow turboprop aircraft arrived overhead, the Chinese patrol ships had already left. Clearly the Philippine air force cannot offer any serious opposition over the South China Sea.\(^ {25}\)

The Philippine navy is in a similar state. While it operates scores of coastal patrol boats that support the army’s counterinsurgency forces, the core of its offshore fleet are three Jacinto-class corvettes, which were acquired from the United Kingdom following the dissolution of the Hong Kong Squadron. Until recently, the navy’s only other major combatant was the *Rajah Humabon*, a World War II-era destroyer escort. All armed with 76 mm guns and


without any anti-ship cruise missiles or anti-missile defenses, these ships have limited value in modern naval combat.

Still, at the end of 2010 few expected the Philippine military to make any significant acquisitions until the start of its 2012–2018 Capability Upgrade Program. But China’s renewed assertiveness in the South China Sea changed that. In 2011, Manila purchased two retired Hamilton-class high endurance cutters from the United States. Though the cutters are reportedly costly to maintain and no better armed than the Jacinto-class corvettes, they were once equipped with RGM-84 Harpoon anti-ship cruise missiles and sonar, which the Philippine navy could later retrofit if funding becomes available. Moreover, the cutters provide the navy with its first dedicated air search radar systems as well as its first shipboard helicopter platforms, which will accommodate two light helicopters that will extend the ships’ surveillance capabilities. Nevertheless, the cutters have no organic anti-air defenses and hence would require air cover to effectively operate in modern battle.26

Despite its recent purchases, Manila’s military modernization remains at a nascent stage. In early 2011, the Philippine navy requested designs for a class of offshore patrol vessels from the U.S. Naval Sea Systems Command, which provides engineering and maintenance support to the U.S. Navy. In the meantime, the Philippine air force has just begun to outline plans for the acquisition of a squadron of new-build multirole aircraft. So far the F/A-18 and MiG-29 fighters have been suggested as possible candidates, but a more likely choice would be the less-costly F-16C/D should budgetary constraints return. Equally important, the Philippine air force should not neglect the acquisition of long-endurance maritime patrol aircraft to provide persistent surveillance near the Spratly Islands, given the lengthy flight time from the air force’s main air bases on Luzon.27

Surely if Manila follows through with its renewed commitment to military procurement over the next five years, Philippine air and naval forces can be revived. But such procurement needs to be carefully considered, not only through the lens of air and naval operations, but also with an understanding of how such costly conventional forces can be sustained over the long run. One option Manila could pursue would be to maximize the advantage of its geographic position to the Spratly group, and meet the challenge of sea control in the South China Sea with an asymmetric approach. Rather than confront Chinese forces with like forces, it could also do so with a strategy built around coastal defenses that have lower procurement and maintenance costs.

Palawan Island sits just 450 km from even the most distant parts of the Spratly group that the Philippines claims. Mobile land-based missiles, such as America’s RGM-84L extended-range Harpoon, India’s PJ-10 BrahMos, or Russia’s P-800 Yakhont anti-ship cruise missiles with ranges of about 300 km, could cover most of the disputed waters. Two or three batteries of such missiles mounted on tracked vehicles and dispersed along Palawan’s long road network could deliver the massed firepower that the Philippines lacks, while reducing the likelihood that China could suppress them with air or ballistic missile attack. Nor would these forces have to face Chinese advantages in anti-air or anti-ship weapons technology. Of course, such coastal defenses would require maritime patrol aircraft to provide the over-the-horizon detection and tracking data for targeting and the coordination necessary to launch a synchronized missile salvo. But given the over 600 km detection range of the AN/APS-145 airborne early warning and control system, an E-2C operating it could patrol well within Philippine airspace and have surface-to-air missile systems protect it from the ground.28

The Philippines could then augment that core coastal defense architecture with a small number of air superiority fighters and high endurance cutters. Such a strategic concept would reduce the need to acquire, maintain, and train a much larger and more expensive air force and navy that would be needed to deliver an equivalent amount of firepower to penetrate Chinese naval defenses in the South China Sea.

Other Southeast Asian Claimants

Brunei and Malaysia also have claims in the Spratly Islands, while Indonesia has an overlapping sea claim with China further to the south. But beset with internal turmoil for over a decade, Indonesia has not modernized its military in any consistent manner since the 1990s. While its air force inventory includes ten F-16A/B, five Su-27SK, and five Su-30MK fighters, most are of doubtful serviceability. Meanwhile, its navy is largely equipped with outdated frigates and patrol craft, whose search radars have such limited detection ranges that they barely exceed the ranges of their anti-ship cruise missiles. Only after the Indonesian navy received the last of four new Sigma-class frigates in 2009 did it modestly improve its surface warfare capability. Meanwhile, Brunei’s ability to project power into the South China Sea is minimal.

Among the South China Sea’s other claimants, Malaysia has the most modernized air and naval forces. But its greatest operational challenge lies in its limited number of combat platforms. Thus, it needs to maximize the capabilities of every platform, which means eventually retrofitting its navy’s

Scorpene-class submarines with air-independent propulsion to extend their underwater cruising capability. And, like Vietnam, it needs to concentrate on improving its air force and navy’s operational and structural readiness.

Fortunately for Malaysia, it has air and naval bases near Kota Kinabalu and Labuan that can facilitate the rapid deployment of forces into the South China Sea. In addition, its Sri Indera Sakti-class logistic ships are designed to support naval combatants that are forward deployed to civilian ports along Borneo’s coast. But completion of its new naval base at Sepanggar Bay, 12 km north of Kota Kinabalu, has been repeatedly delayed after twelve years of construction. Nevertheless, the Malaysian air force and navy have stepped up their exercises in the region, and will hold a major joint field exercise based on a South China Sea contingency in 2012. Such efforts to raise readiness must continue with increasing intensity and realism if China’s advantages are to be offset.29

**Conclusion**

With China’s more assertive behavior in the South China Sea over recent years, Southeast Asia’s claimants have come to realize they face an exacting challenge. Their military capabilities cannot be rebuilt overnight and economic or political exigencies can derail their best-laid modernization plans. Since China’s modernization efforts have had the benefit of 15 years of consistent investment, Chinese air and naval forces will have a decided advantage over those of Southeast Asian countries, until their own modernization programs can make further strides.

Once China’s new aircraft carrier and its complement of fighters are fully operational, the Chinese navy will have largely overcome its earlier geographic and technological disadvantages in the South China Sea. In response, Southeast Asian countries will have to find ways to surmount the fiscal challenge of modernizing their own forces, take better advantage of their proximity to the disputed area, and maximize the operational and structural readiness of their defenses.

But until Southeast Asian countries can improve their military postures, only influence from an external power can restore the balance. Thus, once ASEAN’s major states altered their assessment of Chinese intentions, it was little surprise that they accepted greater American involvement in their regional dispute. For the United States, it must be wary of forever shouldering the bulk of the balancing burden. It must also avoid being drawn into a competition with China for allies in Southeast Asia through military and economic aid—a

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policy that bred corruption and reliance during the Cold War. While this opening presents the United States with an opportunity to strengthen its regional ties, it should be cautious not to become entangled in rigid arrangements that inadvertently overextend its forces, especially at the start of an era when American defense expenditures may decline. The most important thing the United States can do for Southeast Asian countries is to help them defend themselves through increased arms sales and military advice.

Fifteen years ago, I contended in Orbitis that: “Until Chinese leaders are convinced that their forces are strong enough to prevail or their adversaries are too weak to resist, they will continue to refrain from committing their forces to a full-fledged assault [in the South China Sea].” That remains true today. What has changed in the interim is that China’s forces have grown stronger and Southeast Asia’s have become relatively weaker. Many factors contributed to that situation, including periods of economic distress, political turmoil, and optimism that China’s territorial aims could be tempered by socialization into Southeast Asia’s multilateral norms. Only recently have Southeast Asian countries wholly woken to the shift in the military balance and to the depth of Beijing’s resolve in the South China Sea. How they manage their responses to these challenges now will critically influence their ability to safeguard their territorial interests for years to come.