THE DEVELOPMENT OF VIETNAM'S SEA-DENIAL STRATEGY

Shang-su Wu

In the past two decades, Vietnam's military investment has manifested a strategic shift of national interest from land to the maritime sphere, especially since 2000. This evolution reflects the country's altered external environment and its economic transformation.

During the Cold War, Hanoi focused on land warfare. Despite the existence of a small navy since the 1960s, land warfare represented the main security issue for Vietnamese decision makers, whether it concerned the Vietnam War against the United States and its allies, military intervention in Cambodia, or border defense against China.

Subsequently the normalization of relations with neighboring countries, particularly China, as well as a pivot toward a more trade-oriented economy, altered Hanoi's strategic circumstances. Whereas all of Vietnam's land borders have been accepted mutually in a series of treaties, Vietnam's water territory is still vulnerable, especially in the face of China's rising maritime power, because the maritime boundaries are unsettled. This threat affects not only Vietnam's management of its maritime resources but also the security of sea lines of communication (SLOCs), a critical factor in international trade.[1] Given the large gap in naval and air military capabilities between Hanoi and Beijing, the former's projects in pursuit of military modernization reflect a clear strategic focus on sea denial.[2]

However, a series of questions concerning Vietnam's sea-denial capabilities present themselves, and those questions cannot be answered fully yet.

Shang-su Wu is a research fellow in the military studies program of the S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore. After acquiring his PhD at the University of New South Wales, Australia, he worked in the Legislative Yuan in Taipei, Taiwan.

© 2017 by Shang-su Wu
Naval War College Review, Winter 2017, Vol. 70, No. 1

Why did Hanoi adopt a sea-denial strategy? What are the characteristics of that strategy? How much does Vietnam's sea-denial strategy serve its national interests? This article examines Vietnam's geostrategic circumstances to understand better its choice of a sea-denial strategy. Hanoi's current achievements in building its sea-denial capability, as well as the characteristics and limitations of that capability, are reviewed. Finally, as the United States and its allies vis-à-vis China increase their military presence in the South China Sea, the article discusses the effects of Vietnam's sea-denial strategy and the country's relevant military capabilities on the geostrategic situation.

VIETNAM'S STRATEGIC ENVIRONMENT AND NATIONAL INTERESTS

In Vietnam's geostrategic environment, Beijing poses the greatest threat to Hanoi's maritime interests. Other countries are unable or unlikely to pose any significant challenge.

A number of regional states, e.g., the Philippines, Malaysia, Brunei, and Indonesia, claim particular territories in the South China Sea, but their limited naval capabilities do not pose a credible threat to Vietnam. Given geographic adjacency, Cambodia and Thailand might be thought to have the potential for conflict with Vietnam over maritime interests, but in fact these countries cooperate on maritime and military issues.[3] With regard to capability, no country in the region possesses a navy strong enough to threaten Vietnam's. As for the great powers, only China has territorial disputes with Vietnam.

Despite several cases of bilateral cooperation, such as during the Vietnam War, Chinese geopolitical pressure on Vietnam goes back more than a thousand years. In the past, the countries' shared land borders presented natural points of access for projecting force, as evidenced in the war between them of 1979.[4] Therefore, history forms an indispensable part of Vietnam's strategic culture, and resisting China's dominance remains important.[5] Since the normalization of bilateral relations in 1991, Hanoi pragmatically has hedged its bets in relations with Beijing in the economic and political areas. In parallel, the countries have concluded bilateral agreements on land borders, which tends to reduce the risk of territorial disputes, a common cause of warfare.

However, the theater for bilateral territorial disputes has moved to sea areas. Since 2009, various events have confirmed some serious security concerns, such as Beijing's nine-dash line; its assertive attitude toward its territorial claims, backed by its strengthening military capability; and a series of maritime territorial conflicts employing violent means—Beijing's so-called salami strategy.[6] Since Vietnam's 2007 launch of its strategy to develop its maritime industries for greater contribution to its economy, followed by the introduction of a range of related

legislation and policy, the conflicts with China on territorial waters have become even more pressing.[7]

Given the geostrategic conditions and the nature of maritime conflict in general, three levels of possible scenarios for a conflict between Vietnam and China suggest themselves: low-intensity conflicts, medium armed conflicts, and a blockade conducted by China. (Higher-level scenarios, such as attacking onshore targets and conducting land warfare, would not be purely maritime conflicts, and thus are not covered in this article.)

Low-intensity conflict mainly would involve coast guards or other paramilitary forces. Military units might be involved, but without applying most weapon systems.[8] The category of medium armed conflicts covers a wide spectrum of military engagements; protecting or restoring control of an island and exchanging fire are two prospective scenarios. Instituting a blockade is classified as a major act of war because of the magnitude of the sphere of battle affected. Whereas an armed conflict that occurred in water territory might not endanger major economic activities or populations, both Hanoi and Beijing nonetheless might view it as an intense territorial collision. A naval blockade, having a broader and greater impact, in particular economically, would be seen as escalation, because it would represent a greater application of strategic pressure, or even a challenge to survival—which Vietnam's political leaders could neither ignore nor downplay. Since a considerable portion of the Vietnamese economy is based in the north and China's adjacent Hainan Island makes the Gulf of Tonkin a semiclosed body of water, even blockading only northern Vietnam would have significant effects. Blockading the entire Vietnamese coastline may not be impossible for China's People's Liberation Army (PLA) Navy (PLAN), but an operation of that scale would be more challenging.

Low-Intensity Conflict

As the maritime collisions that have occurred in the South China Sea in recent years have demonstrated, both Hanoi and Beijing use their coast guards, maritime police forces, and other law-enforcement entities to attempt to establish the legitimacy of their claims over territories while avoiding military engagement. Notwithstanding this, they do carry out aggressive actions such as deliberate collisions and ramming, the shooting of flares, and water cannoning.[9] In such scenarios, the direct involvement of Vietnam's military capabilities, such as fighter-bombers or submarines, is unsuitable. This leaves Hanoi with surveillance systems as the only support available to its coast guard operations. However, attempts to maintain control of islands or direct attacks on vessels and aircraft might escalate into armed conflict.

Vietnam's military deployments to a number of islands, particularly the Spratlys, are vulnerable to blockade, raid, and invasion owing to their isolation and limited firepower. According to satellite images, the Vietnamese posts in the South China Sea are too small to contain sophisticated weapon systems or related surveillance equipment.[10] Therefore, the Vietnamese troops at best may be armed with short-range surface-to-air missiles (SAMs), but likely only with light arms and antitank weapons.

As long as Chinese armed forces did not succeed in bringing about a fait accompli, i.e., accomplishing a takeover in one fell swoop, the Vietnam People's Army (VPA) Navy (VPAN) and the VPA Air Force (VPAAF) might focus profitably on denying Chinese access. Once an island was captured, Vietnam would experience considerable difficulty in retaking it by force, as doing so most likely would involve a joint operation. If Vietnamese forces were unable to retake such an island, they could isolate it by denying its SLOCs. However, this kind of siege tactic would take time to work, and the situation would turn into a war of attrition—which would be unfavorable for Vietnam. In a war of attrition, the small numbers of Vietnamese combat aircraft, surface vessels, and submarines likely could not sustain a blockade in the face of their superior Chinese counterparts. (A later portion of this article is given over to a comparison of the respective forces.)

Medium Conflict

Exchange of fire, either accidental or intentional, could occur in the South China Sea. Escalation is the key factor: no matter which side loses in the first round of combat, the subsequent response is critical. If one side sends in reinforcements, the other may do so as well. If an increasingly intense spiral of response develops, the situation may evolve into a war of attrition—again, a situation unfavorable to Vietnam.

However, unlike in the previous scenario (protecting or retaking an island, which involves concentration on a specific location), in an exchange-of-fire scenario Hanoi could apply guerrilla tactics by moving aircraft or vessels or both into other sea areas where Beijing has concerns. Although China's maritime forces are superior to Vietnam's, they cannot deploy everywhere. Thus, Hanoi could make use of any weaknesses in Beijing's military presence to launch attacks for tactical advantage.

Blockade

A Chinese blockade of Vietnam's SLOCs would constitute an intermediate scenario, representing an escalation above small-scale armed conflict but not yet reaching the level of an attack on the mainland.

Although it would not be easy for the PLAN's South Sea Fleet alone to achieve a full blockade of Vietnam's long coastlines, its submarines plus its surface combatants, supported by maritime patrol aircraft and satellites, have the potential to interfere with Vietnam's SLOCs from a distance. Given the ability to move reinforcements from its other fleets, the PLAN might be able to establish a near-total blockade.

Hanoi could negotiate land transport through Cambodia, via something like the famous Ho Chi Minh Trail, or use the ports in Rach Gia on the Gulf of Thailand to make sea-transportation connections via the water territories of Cambodia, Thailand, and Malaysia. However, since such alternative arrangements would involve foreign countries, their viability remains uncertain. In any case, the minor ports in Rach Gia would be insufficient to replace the existing major ones.[11]

VIETNAM'S SEA-DENIAL STRATEGY

In most scenarios—other than low-intensity conflicts that involve few or no military forces—the VPAN generally faces asymmetrical challenges from its Chinese counterpart. In such circumstances, a sea-denial strategy is appropriate, in contrast to sea control or a postmodern navy. Although sea denial is not mentioned in Vietnam's official publications, its practices demonstrate a preference for such an approach.

Sea Control

Sea control refers to fleets controlling a specific body of water at a certain time. This demands a broad formation of surface fleets incorporating comprehensive air/missile defense, antisubmarine warfare (ASW) and antiship capabilities, and additional assistance from aircraft and submarines. A navy exercising sea control intends to be able not only to expel hostile naval forces but to protect its country's maritime activities. However, implementation of a sea-control strategy is expensive, requiring the building of various vessels and aircraft, especially surface combatants equipped with excellent capabilities against air, surface, and underwater targets.[12]

In Southeast Asia, even Singapore, with its great financial capacity and its willingness to invest in defense, has only six *Formidable*-class frigates, which have some sea-control capability.[13] In the asymmetrical naval relationship between Vietnam and China, even if the former were able to muster defense expenditures similar to Singapore's, six to ten surface combatants would not rival any one of the latter's three major fleets, each of which has more than twenty major surface vessels.[14] Operationally, Hanoi's sea-control navy would be vulnerable to Beijing's sea-denial capabilities in the air, on the surface, and underwater. (The latter is also known as an antiaccess/area-denial [A2/AD] strategy.)

Postmodern Navy

A postmodern naval strategy is aimed at threats from nonstate actors such as pirates, terrorists, and criminals rather than at other states' navies. Such a navy concentrates on sea control, expeditionary operations, keeping order at sea, stability, humanitarian assistance, and cooperative naval diplomacy.[15]

Note that sea control is listed above as a major goal. However, vessels developed to counter nonstate actors lacking sophisticated military technology—such as the U.S. Navy littoral combat ships, which provide flexibility, maneuverability, and speed at relatively low cost—bring only limited capability to a conventional naval battle.[16] Given the present incidence of low-intensity conflicts in the South China Sea, a postmodern navy might have a role to play, and its relatively cheap assets would be affordable. However, neglecting conventional naval combat capability likely would leave a postmodern navy, with its limited firepower, unable to support escalation. Following this naval strategy would leave Vietnam with limited options by which to respond to maritime challenges from China.

Sea Denial

Sea denial refers to the prevention or disturbance of an enemy's use of the sea, particularly in areas adjacent to the defender's coast. This strategy has been applied widely by states lacking sufficient capacity or capability to exercise sea control.

The concept of sea-denial strategy has experienced evolution and enrichment as a result of the development of modern defense technology. Owing to the invention of torpedoes, then of antiship cruise missiles (ASCMs), as well as the various platforms on which each of these can be deployed, the strike range of sea denial underwent a gradual expansion, from distances in the visible range to hundreds of nautical miles. The importance of surveillance and targeting increased accordingly. Thus, a variety of platforms (e.g., land-based reconnaissance and strike aircraft, over-the-horizon [OTH] radars, ocean-reconnaissance satellites, ASCMs) have been applied to the problem, gradually enabling a multidimensional and networked system for sea denial.[17]

This result mainly flowed from the Soviet navy's efforts during the Cold War.[18] With its similarly asymmetrically limited resources, Vietnam might find that a variety of sea-denial technologies would present an economical solution by which it could counter China in the maritime environment. The building of submarines, missile boats, maritime strike aircraft, ASCMs, moderate surveillance capability (the South China Sea is relatively small), and other sea denial–oriented technologies is in fact the approach Vietnam has taken in its recent military buildup. Furthermore, a sea-denial strategy usually is constrained to a specific space, which presents it as a less-offensive posture; this fits well with Hanoi's official principle of self-defense.[19]

Vietnam's sea-denial strategy would focus on Chinese surface vessels—the main platforms for most maritime activities—in the South China Sea. Chinese submarines and aircraft are also valuable targets, but the stealth of submarines and the mobility of aircraft make them less feasible targets than surface vessels, which are comparatively slow and detectable.[20] Furthermore, most maritime activities, such as mining and fishing, are conducted using surface platforms, rather than aerial or underwater ones.

A Vietnamese sea-denial strategy might be conceptualized and executed as follows:

- The relatively small size of the South China Sea would allow Vietnamese reconnaissance aircraft, as well as other reconnaissance facilities such as satellites, to locate targets for the command center and the strike forces.
- Then Vietnamese combat aircraft, equipped with airborne ASCMs, would constitute a major strike force capable of covering the greater part of the South China Sea.
- Despite their slow speed, submarines would be the best platforms for anti-ship missions owing to their stealth and lack of need for air cover.
- Small surface vessels, such as missile boats, are valuable in defending coastal areas, as they are easy to hide and wield the considerable firepower of ASCMs. However, their narrow range in detecting targets, especially beyond the horizon, and their low durability would restrict them in such a large theater.
- Although major surface vessels, such as frigates, have better surveillance capability because of their larger space for equipment and shipboard helicopters, which might enable them to make a greater contribution to sea denial, their vulnerability to a saturated attack by ASCMs and their high cost constrain their use for sea-denial operations.

In addition to the sea surface, airspace is essential to sea denial. If the VPAAF is able to establish air superiority, or at least to constrain its Chinese counterpart's activities, it would make a sea-denial strategy more effective.

VIETNAM'S DEVELOPMENT OF SEA-DENIAL CAPABILITY

So far, Hanoi's recent military procurements generally have reflected the sort of strategy laid out above. Vietnam practiced a sea-denial strategy previously, during the Indochina War. As far back as the early 1960s, it acquired a number of Soviet P-4 and P-6 torpedo boats, and later introduced Project 183 and Project 206 missile boats armed with P-15 ASCMs. However, as most battles in that war occurred on land, Hanoi paid more attention to denying American airpower using numerous Soviet SAMs, such as the S-75, S-125, and 2K-12, as well as a range

of fighters, mainly MiG-21s. After unification in 1975, Moscow supplied a range of sea-denial weapon systems, such as Su-22 attacker aircraft equipped with airborne Kh-23, Kh-25, and Kh-28 air-to-surface missiles (ASMs), more missile boats, and S-35 coastal ASCMs, supported by better surveillance systems such as Be-12 flying boats and Ka-25/27 helicopters.[21]

However, following the political reforms of 1986, the rapprochement with China, Vietnam's withdrawal from its military interventions in neighboring countries, and the easing of international tensions overall at the close of the Cold War, Vietnam dramatically shifted application of its national resources toward economic development. This decreased military preparation, and therefore the country's sea-denial capability. In particular, the decrease in operational strike aircraft such as Su-22s significantly reduced Vietnam's sea-denial radius.[22]

After the Soviet Union collapsed, Hanoi lost financial and logistical support from that source. This led to a period of stagnation for the VPAN and the VPAAF, at the same time as their Chinese counterparts were increasing their modernization projects. After surviving the most difficult years in the early 1990s, Vietnam made minor efforts in the later 1990s to resume a slight buildup of its naval and aerial capabilities. It introduced two BPS-500 missile boats, four Project 1241 missile boats, and twelve Su-27SK fighters with Kh-35 ASCMs, all from Russia.[23] However, such small-scale projects constituted the VPAN and the VPAAF merely keeping up with progress in military technology rather than providing a strong response to the regional arms dynamic.

In the latter part of the first decade of the twenty-first century, Vietnam's improving financial capacity eventually allowed a large-scale military procurement. Since the end of the Cold War, Hanoi has maintained a gross domestic product (GDP) growth rate of more than 5 percent, except in 1999, and late in the following decade it increased its defense budget significantly, to an amount three times larger than it was in 1991.[24] For strategic and operational reasons, the increase in investment mainly went into maritime capability. However, the VPAN's Cold War legacy of Soviet vessels remains small and aging, and thus the service is incapable of properly protecting Vietnam's maritime activities within its water territory.[25] The recent increase in procurement reflects Vietnam's security concerns regarding China, especially the latter's increasingly tough approach to territorial disputes since 2007, as seen in a variety of bilateral conflicts at sea.[26] In this strategic environment, the VPAN and the VPAAF have been considered strategic priorities—despite the VPA's superiority in the Vietnamese military structure and its political influence—and their military procurement projects have been oriented toward denial.

The country's determination to improve maritime and aerial defense is evident.[27] The maritime buildups comprise ten additional Project 1241 missile

boats armed with Kh-35 ASCMs, thirty-six Su-30MKK fighter-bombers with Kh-29 and Kh-31 ASMs and KAB-500/1500 guided bombs, thirteen used Su-22M attackers from the Czech Republic and Ukraine, six Project 636 diesel-electric submarines (SSKs) equipped with fifty 3M-54 ASCMs, two Bastion-P coastal defense systems with forty P-800 supersonic ASCMs, four to six Gepard-3 frigates, two Dutch Sigma 9814-class corvettes, eight Project 10412 patrol vessels, and six Canadian DHC-6-400 and two Polish M-28B maritime patrol aircraft.[28] As fourth-generation fighters, the Su-30MKKs—with new avionics and an eight-ton payload for ground-attack munitions, especially for Kh-31 supersonic ASMs—form a considerable strike capability, in particular against surface vessels. Despite their old design, modernized Su-22 aircraft still can provide platforms for some ASMs, to supplement the Su-30s in sea-denial missions.[29] Hanoi also has shown an interest in purchasing non-Russian combat aircraft.[30] Russian Kh-35, 3M-54, and P-800 missiles also are used to deny adversary surface vessels beyond the horizon, with maritime patrol aircraft assisting in finding targets.[31] Vietnam's procurement of two S-300PMU-1 SAM systems (maximum range: 150 km) and its procurement in the near future of S-400 SAMs (maximum range: 400 km) may provide the capability to deny Chinese aerial activity in some offshore areas.[32] In contrast to other Association of Southeast Asian Nations countries, Vietnam's efforts in military modernization are outstanding. And they are concentrated fully on the maritime field—the VPA has received no major project.[33] The predominance of Russian equipment probably reflects the legacy of the Soviet sea-denial strategy that somewhat fit Vietnam's needs, as well as the tight bilateral relations.[34] However, the Russian dominance in Hanoi's arsenal may present operational and logistical obstacles for several non-Russian systems.

Sufficient training is an indispensable factor in the efficient use of military assets, and Hanoi is making improvements in this area. For decades, limited budgets constrained training of VPAN and VPAAF forces, but the new projects are bringing in additional capacity. Weapon systems from foreign suppliers come with the provision of training in operation, maintenance, and repair, as well as simulation facilities. In addition, joint exercises with foreign countries can strengthen training.[35] Internally, the personnel interchange program between the VPAN and the VPAAF that began in 2009 also may strengthen their ability to conduct joint operations.[36] However, the VPAN is still rather inexperienced in operating and maintaining sophisticated naval weapon systems and operations, especially those for submarines.[37]

Despite its lack of mention in official Vietnamese materials, such as the defense white paper, Vietnam's enhancement of its naval and aviation assets may represent Hanoi's intention to prepare for multilevel conflicts. As the economic

importance of maritime resources grows, the naval and aviation buildups indicate some concern about control of the Vietnamese exclusive economic zone (EEZ). The patrol vessels, corvettes, frigates, maritime patrol aircraft, and fighters are designated to protect the EEZ in an armed conflict up to a medium level. In other words, Vietnam's military buildups suggest that Hanoi is concerned about more than just sea denial. In the case of larger-scope warfare scenarios involving China's massed forces, the VPAN and the VPAAF likely would be ineffective at protecting aerial and maritime activities, or even simply providing escorts, so they would concentrate on denial operations. The Vietnamese missile boats, SSKs, coastal ASCMs, and SAMs are intended specifically to deny particular aerial and maritime targets.

However, in contrast to their earlier capabilities, the VPAN and the VPAAF now can extend their denial power by using longer-range arms with greater destructive capability. For example, the maximum range of the 3M-54 ASCMs is at least 220 km, a figure that could be multiplied depending on the mobility of their submarine platforms. The supersonic P-800 ASCMs with 300 km range are less likely to be intercepted than the older subsonic ASCMs.[38] The S-300PMU-1 SAMs have the potential to cover a range of airspace over some coastal waters, while the Su-30MK2's wide combat radius and beyond-vision-range capability can extend the range of engagement.[39]

Moreover, the longer-range weapon systems not only enable Hanoi to deny hostile aerial and maritime activities beyond its EEZ but also present opportunities to strike certain Chinese military facilities. A prime candidate would be Yulin on Hainan Island, the home base of the PLAN's South Sea Fleet—a major facility less than 300 km from Vietnam's coastline.[40] Hanoi's R-17 and 3M-54 missiles could reach the Chinese naval base, and the act of striking its vessels and facilities could be seen as part of a sea-denial strategy.[41] However, as previously discussed, attacking onshore targets almost certainly would be classified as escalation, and Vietnam would face even greater retaliation from China. Furthermore, the shortness of the distance between the Vietnamese coastline and Hainan Island would be convenient in turn for the PLAN and other Chinese military units to launch retaliatory attacks, thus leaving Vietnamese facilities vulnerable. Therefore, while such threats may help in deterrence, they may be disadvantageous to carry out.

THE CAPABILITY GAP

Despite considerable investment, several factors constrain Vietnam's current capability to achieve fully its strategic goal—denial of China's maritime activities in the South China Sea.

First, Vietnam's surveillance capability may be insufficient, or at least weak. Long-range weapon systems rely on targeting; the platforms themselves, whether

vessels or aircraft, may have limited detection capability. Vietnamese surveillance currently relies on the country's VNREDSat-1 natural resource satellite, which uses French technology, and several aerial platforms such as the VPAN M-28, DHC-6 maritime patrol aircraft, and Vietnamese Coast Guard C-212 maritime patrol aircraft. Strike aircraft such as the Su-22, -27, and -30 add limited detection capability.[42] Hanoi's current remote-sensing cooperative effort with New Delhi may contribute to surveillance as well.[43] Land-based radars, signal-collection facilities, and surface vessels also may be important for Vietnam, although little information is available on Hanoi's planning in this regard. A central and networked command system could be established, as long as the VPAN takes significant lessons from the Soviet sea-denial strategy.[44]

Given the above, Vietnam may be able to observe the whole South China Sea area. However, several questions arise regarding this surveillance arrangement, relating to integration and survivability.

Integrating and sharing the collected intelligence among various aerial platforms, the command chain, and strike units would not be easy. Owing to its earth-observation function and foreign management, the VNREDSat-1 might not provide real-time information. A similar situation might occur regarding the Vietnam-India space cooperative venture.[45] Because Vietnam's existing aerial-surveillance platforms come from various sources, such as Russia and Israel, their integration would present another challenge.[46]

With regard to survivability, Vietnamese propeller-driven maritime patrol aircraft lacking VPAAF escort would be vulnerable in the air to Chinese fighters; and even when escorts were available, VPAAF fighters would be outnumbered by their Chinese counterparts. In the Guangzhou Military Region alone, the PLAN Air Force and the PLA Air Force (PLAAF) deploy four times as many fourth-generation fighters as the VPAAF, not to mention potential reinforcements from other areas in China (see table 1).[47] The recent formation of the Chinese Southern Theater Command, which has broader coverage than the Guangzhou Military Region, may allow its commander to concentrate even more assets.[48] China's air superiority also includes better intelligence and command, accommodated by its airborne warning and control system (AWACS) aircraft and longer-range air-refueling aircraft.[49] In addition, in the near future PLAN fighters based on aircraft carrier(s) or on forward bases on some of the Spratly Islands may present a further feasible option.[50] This would mean that the VPAAF's surveillance capability could be decreased significantly, if not neutralized, during wartime. Ground facilities in Vietnam also may be exposed to Chinese strikes, particularly from ASMs.[51] The Vietnamese Suhkoi Flanker aircraft, with their high mobility and air-to-air combat ability, may be more likely to survive, but they likely would be occupied with various other missions, such as aerial combat, rather than with

TABLE 1
COMPARISON OF AIRPOWER BETWEEN VIETNAM AND CHINA

Fighter Generation	Vietnam	Guangzhou Military Region, China (combined PLAAF and PLANAF units)
3rd	MiG-21Bis/UM: 33; Su-22M/UM: 28	J-7s: 3 regiments and 1 brigade, about 120; J-8s: 1 regiment, about 24
4th	Su-27SK/UBK: 11; Su-30MK2: 36 (29 delivered)	J-11/B (Su-27): 4 regiments, about 96; J-10: 2 regiments and 1 brigade, about 72; Su-30MKK: 1 regiment, about 24

Note: PLANAF = PLA Naval Air Force

Source: IISS, *The Military Balance 2016,* pp. 244–45, 248, 298; van Creveld, *The Age of Airpower,* pp. 198–204.

detecting maritime targets. Without aerial intelligence from fixed-wing aircraft, the VPAN would be dependent on its Ka-27 helicopters and sonars alone to detect targets beyond the horizon. But those helicopters easily could fall prey to attack by China's fighters, and the availability and quality of information from sonar are sometimes unstable owing to fluctuations in maritime conditions.

In short, the VPAN and other forces may not be able to provide sufficient information on targets beyond the horizon.

Second, the majority of Vietnamese weapon systems share the same Russian origins as their Chinese counterparts. For example, both Hanoi and Beijing purchase the Su-30MK2 and Project 636 SSKs, although the former's submarines may be more advanced than the latter's.[52] Thus, the general technological characteristics and even the details of Vietnam's supposed "trump cards" may be transparent to China already. The Vietnamese crews may learn different doctrines and tactics as a result of training in India; however, the Chinese operators of those Russian aircraft and submarines have had more time than their Vietnamese counterparts—owing to earlier procurement and perhaps to reverse engineering—to master similar weapon systems.[53] Besides the fighters and submarines, the VPAAF's Kh-31P antiradar missile is valuable in destroying enemy radars, AWACS, and other surveillance systems, or threatening to shut them off, but it would not be as formidable against the PLAN or the PLAAF, again owing to China's earlier procurement advantage.[54] Although Hanoi has begun to purchase non-Russian arms unavailable to Beijing, such as the Dutch Sigma corvettes, it will be difficult for it to change the Russian-dominant nature of its military in the near future.

Finally, quantitative inferiority would constrain the durability and credibility of Vietnam's A2/AD strategy, and Vietnam's limited logistical facilities and training may not help the situation. As most modern sea-denial platforms, such as submarines and fighter-bombers, require intensive maintenance as well as excellent training to retain their operability, even Hanoi's increased investment

TABLE 2
COMPARISON OF NAVAL POWER BETWEEN VIETNAM AND CHINA'S SOUTH SEA FLEET

Type of Vessel	Vietnam	South Sea Fleet, China
Surface combatants	Frigates: 2 (total of 8 involved in current deals)	Destroyers: 7; frigates: 20
Submarines	SSKs: 6	SSNs: 2; SSKs: 16

Note: SSN = nuclear attack submarine

Source: IISS, *The Military Balance 2016,* pp. 248, 298.

to date may not be sufficient.[55] Although Russia is assisting Vietnam with missile manufacture and shipbuilding, Vietnam remains restricted by its limited defense industry and its resultant dependence on foreign supply for some critical parts, such as engines. Most VPAN and VPAAF weapon systems, especially non-Russian ones, also would face supply issues during conflict.[56] Apart from the above-mentioned quantitative gap in the number of combat aircraft, the numbers of Vietnamese major surface vessels and submarines are much lower than those of the PLAN's South Sea Fleet (see table 2).[57] Despite the sometimes advantageous asymmetrical nature of Hanoi's sea-denial strategy, Beijing's sheer numerical superiority may allow it to absorb losses Hanoi would inflict during warfare, and eventually to coerce the latter toward the former's strategic goals.

Vietnam might achieve a tactical or operational victory in the initial phase of a conflict. However, owing to integration issues, dependence on Russian arms, and quantitative inferiority, it is doubtful that Vietnam could sustain that victory in the face of China's superior military capability.

In cases of protecting or restoring control of an island and exchanges of fire, Beijing easily could reinforce its Guangzhou Military Region from other regions with more vessels and aircraft to prolong the war, and even to transform it into a war of attrition. A positive outcome for Vietnam would be a decisive victory that caused China to withdraw because of serious damage to either its military capability or its international reputation. With regard to achieving this strategic goal, the VPAN's Project 636 SSKs, with their stealth characteristics and long-range ASCMs, would be most likely to survive and might succeed in launching several waves of attacks on the surface vessels of the PLAN's South Sea Fleet. The Sukhoi aircraft and surface vessels also could contribute their respective ASCMs to sea-denial strikes. Since major surface vessels are a significant—and expensive—component of China's sea power, the sinking of a number of frigates and destroyers, or even an aircraft carrier, might force Chinese decision makers to cease fire. However, the South Sea Fleet's sixteen SSKs plus two nuclear attack submarines might constrain or even neutralize the Vietnamese SSKs' tactical advantages, as submarines often make effective ASW platforms.[58] By the same

token, Vietnamese aircraft and vessels may bear considerable losses in the face of dominant Chinese countermeasures, especially if the latter can attack the former's bases ashore.

In a blockade scenario, the VPAN—limited in ASW capacity, frigates, helicopters, and aircraft—would be unlikely to neutralize or expel the PLAN's numerous submarines or to be able to escort merchant vessels through the SLOCs to a safe area. VPAN and VPAAF ASCMs could keep the PLAN's surface vessels at some distance from the Vietnamese coastline, but Vietnam might fail to deal effectively with a blockade established at a greater distance, owing to its inadequate surveillance capability and the limited ranges of its surface vessels and strike aircraft. The VPAN's small flotilla of Project 636 SSKs would pose a considerable threat against major Chinese surface ships, but their number may be too small to create a real impediment to China's access to SLOCs, given their limited long-term durability, the narrow margin for loss, and the risk of attacking vessels from other countries. In other words, Beijing would be likely to press Hanoi through blockade, and the latter's countermeasures might not be enough to neutralize the former's operation.

In summation, the VPAN and the VPAAF, using an asymmetrical approach and employing their denial capabilities, may not achieve their strategic goals in all wartime scenarios by fully neutralizing their Chinese counterparts' superiority. With Hanoi's cautious attitude on defense expenditure—allocating roughly 2.5 percent of GDP to the defense budget—it will take a few years to complete its recent procurements, making future projects rather unlikely, or at least likely to be of smaller scale.[59]

It can be deduced from the scenarios outlined that Vietnam faces limited chances of overall military success, but nonetheless has strengthened its deterrence against China. Given the inherently asymmetrical nature of bilateral relations between Hanoi and Beijing, the former's deterrence helps its "hedging engagement" with the latter by adding considerably to the costs of using force.[60] Compared with a decade ago, the cost to China of conducting armed conflict against Vietnam has become higher, and the outcomes have become less certain. Before the VPAN and the VPAAF acquired additional assets, Hanoi only had a declining number of aging Su-22M attacker aircraft to react to any contingency on the islands it has occupied or the water territories it claims. Although the gap between the military capabilities of the two sides remains wide, Hanoi now has expanded its options compared with previous periods. This means the PLAN and the PLAAF now need to deploy more units in any operation against Vietnam if they are to maintain superiority. This both increases the preparation time and effort needed, thus reducing the possibility of a surprise attack, and potentially paints China with the more aggressive image on the international stage.

Tactically, this may make Beijing less likely to use its military units to provoke small-scale conflicts, especially in cases that involve an unnecessary risk of loss or defeat.

Since China is involved in other territorial conflicts, such as those relating to Taiwan and the Senkaku Islands, concerns over any one of them may prevent Beijing from concentrating enough force to achieve absolute superiority over Hanoi. Without sufficient Chinese superiority, Vietnam's sea-denial strategy would prove especially effective, or at least influential, within the broader regional geostrategic picture, as opposed to the purely bilateral relationship. In this way, Vietnam's military investment may contribute to stabilizing or ameliorating the changing maritime balance of power currently being driven by China's increasing naval might.

Hanoi's sea-denial strategy had its foundation in the Cold War era. The current version can be interpreted as a moderate form of military modernization and a reasonable, asymmetrical response to Beijing's superior military power.

Vietnam's beefed-up denial capability may mean that China would not perceive it to be the "easiest prey" in the South China Sea; in terms of pure military capability, the VPAN and the VPAAF are indeed much stronger than their Philippine counterparts. However, Manila can rely on extended deterrence by strengthening its alliance mechanisms with the United States, such as the Enhanced Defense Cooperation Agreement (EDCA), and with other countries, such as Japan. As the Philippines and Vietnam are two frontline states facing China's expanding sea power, once the Philippines achieves better deterrence, or even if Chinese decision makers simply perceive this to be the case, Vietnam may suffer heavier strategic pressure because of its nonallied international stance.[61] In this context, Hanoi's pursuit of a sea-denial strategy helps to ensure that, overall, it is not weaker than Manila when facing Beijing.

Vietnam's denial capability serves as a diplomatic bargaining chip. During peacetime, Hanoi's military investment demonstrates its commitment to security and serves as a form of defense diplomacy. Commitment to defense is a sign of shouldering responsibility rather than free riding, a matter of importance to countries considering forming alliances, other cooperative security efforts, or both with Vietnam. Defense diplomacy (e.g., joint exercises and friendly visits) represents an effective means by which the VPAN and VPAAF can strengthen relations with their foreign counterparts.[62]

If Vietnam had no substantial defense capability, an external third power would face relatively high costs of intervention, especially in the case of a direct confrontation with China; those costs might be so high that the power would refrain from taking any substantial action. Since Hanoi is developing the

capability to take its own steps to resist Beijing's military initiative during an initial period, a third party—which most likely would be Washington—would have more options, including providing arms or putting military pressure on Beijing's other fronts, such as in the East China Sea. Additionally, if China succeeded in presenting the world with a fait accompli it would render subsequent external intervention less meaningful, but Vietnam's resistance might prevent this. However, despite improving Vietnamese-U.S. military ties, as demonstrated by some partnering and cooperation, U.S. intervention may remain uncertain owing to the lack of a formal alliance like that with the Philippines. In this context, Vietnam's sea-denial capability would be a critical factor for decision makers in the United States.[63] Such a strategy would provide Hanoi with some breathing space to wait for changes to occur on a domestic or international level, as influenced by third parties.

The similarity between the Russian-originated weapon systems that Vietnam and China both use, Vietnam's quantitative inferiority, and its limited surveillance capability make it unlikely that Vietnam's denial-oriented military strategy will be able to counter fully the might even of China's Guangzhou Military Region alone. Thus—unless the VPAN and the VPAAF develop some new tactics that would constitute a significant surprise to their Chinese counterparts—Hanoi's present military assets likely are insufficient to achieve the asymmetrical effects at which its sea-denial strategy aims. Strengthening that deterrence at least would ameliorate Vietnam's situation in the geostrategic landscape, including in its bilateral relations with China.

When considering the development of Vietnam's sea-denial strategy, three points are worth further discussion: the country's alliance or defense diplomacy, further procurement, and political leadership.

Despite an official emphasis on nonalliance, Hanoi is not bound by any treaty to remain neutral, leaving it free to change its diplomatic policy. In a fashion similar to the Philippines' use of the EDCA to strengthen its deterrence against China, Vietnam also can set up some type of security arrangement with a third-party power, whether it be an alliance in name or not. There might be some future breakthrough in Vietnamese-U.S. relations, although Vietnam's long relationship with Russia in defense and economic matters may affect such a process.[64] Once any alliance is formed, the role of Vietnam's sea-denial strategy may be adjusted accordingly. Even at a level below an alliance, joint exercises and other forms of military cooperation also may affect Hanoi's sea-denial strategy, in addition to increasing Beijing's uncertainty about its strategic calculation regarding Hanoi.

As for further procurement, the means by which Vietnam deals with the weak points in its sea-denial capability will be crucial. Adding surveillance systems, whether OTH radar, maritime patrol aircraft, or maritime satellites,

would improve targeting and the organization of attack and command, thereby strengthening the overall efficiency of sea-denial operations. A more integrated chain of command would enhance sea-denial capability immediately. Regarding means used for strikes, ASCMs and aerial platforms would be preferable because of their high mobility and lower costs of procurement and training compared with submarines. If financial capacity is limited, land-based ASCMs present an economical solution.

Finally, it is possible that the new Vietnamese leadership, given its pro-China record, may adjust the pace and content of military modernization to stabilize bilateral relations.[65] Such a development would require time to manifest itself, because Hanoi's present arms contracts have not been filled yet, and the situation will not become clearer until Vietnam launches a new wave of military procurement —or does not. As deterrence is an indispensable part of Vietnam's current China policy, investment in defense is not likely to be dropped entirely from the country's list of priorities; but if Vietnam achieves relatively stable relations with China, it may pay greater attention to economic or other issues, and the pace of building a sea-denial strategy for Vietnam might slow down.

NOTES

1. The Sino-Vietnam land borders and the maritime ones in the Gulf of Tonkin are settled by treaties. Ian Storey, *Southeast Asia and the Rise of China: The Search for Security* (London: Routledge, 2011), pp. 111–14.
2. Carl Thayer, "The Tyranny of Geography: Vietnamese Strategies to Constrain China in the South China Sea," *Contemporary Southeast Asia* 33, no. 3 (December 2011), p. 352.
3. Prashanth Parameswaran, "Vietnam, Cambodia Boost Defense Ties," *Diplomat,* 10 March 2015, thediplomat.com/; Tran Truong Thuy and Nguyen Minh Ngoc, "Vietnam's Security Challenges: Priorities, Policy Implications and Prospects for Regional Cooperation," in National Institute for Defense Studies, *Security Outlook of the Asia Pacific Countries and Its Implications for the Defense Sector* (Tokyo: 2013), p. 109.
4. The land borders were the origin of various bilateral disputes that resulted in the war in 1979. Although China's military preparation was not aimed at full-scale invasion, it proved the possibility of land invasion. James Mulvenon, "The Limits of Coercive Diplomacy: The 1979 Sino-Vietnamese Border War," *Journal of Northeast Asian Studies* 14, no. 3 (September 1995), pp. 72–73.
5. Le Hong Hiep, "Vietnam's Hedging Strategy against China since Normalization," *Contemporary Southeast Asia* 35, no. 3 (December 2013), pp. 339, 343–49.
6. James Hardy, "Sands of Time: China's 'Salami Slicing' in South China Sea," *IHS Jane's,* 28 July 2014, globalsso.ihs.com/.
7. Nguyen Hung Son, "Vietnam: A Case Study in Naval Modernization," in *Naval Modernisation in South-East Asia: Nature, Causes and Consequences,* ed. Geoffrey Till and Jane Chan (London: Routledge, 2013), pp. 122–24.
8. Sarah Raine and Christian Le Mière, *Regional Disorder: The South China Sea Disputes* (London: International Institute for Strategic Studies [hereafter IISS], 2013), pp. 68–70.
9. Carl Thayer, "China's Oil Rig Gambit: South China Sea Game-Changer?," *Diplomat,* 12 May 2014, thediplomat.com/.
10. Center for Strategic and International Studies, "Washed Away: Typhoon Melor Spotlights

Vietnam Island Building," *Asia Maritime Transparency Initiative,* 2016, amti.csis.org/.

11. *CIA World Factbook,* s.v. "Vietnam," www.cia.gov/.
12. Eric Grove, *The Future of Sea Power* (Annapolis, MD: Naval Institute Press, 1990), pp. 12–15; Geoffrey Till, *Seapower: A Guide for the Twenty-First Century,* 3rd ed. (London: Routledge, 2013), pp. 32–33.
13. Richard A. Bitzinger, "A New Arms Race? Explaining Recent Southeast Asian Military Acquisitions," *Contemporary Southeast Asia* 32, no. 1 (April 2010), p. 56.
14. The PLAN's North Sea Fleet has one aircraft carrier, four destroyers, and sixteen frigates; the East Sea Fleet commands eight destroyers and eighteen frigates; and the South Sea Fleet operates seven destroyers and twenty frigates. IISS, *Military Balance 2016* (London: Routledge, 2016), pp. 244–45.
15. Till, *Seapower,* pp. 35–40.
16. Jesus M. Perez, "The US Navy Stumbles into the 21st Century," *Postmodern Wars,* trans. Alan Furth, 13 April 2013, available at postmodernwars.org/.
17. Norman Friedman, *Seapower and Space* (London: Chatham, 1998), pp. 129–72; Theodore Ropp, "Continental Doctrine of Sea Power," in *Makers of Modern Strategy: Military Thought from Machiavelli to Hitler,* ed. Edward Mead Earle, Gordon A. Craig, and Felix Gilbert (Princeton, NJ: Princeton Univ. Press, 1971), pp. 446–48.
18. Colin S. Gray and Roger W. Barnett, *Seapower and Strategy* (Annapolis, MD: Naval Institute Press, 1989), pp. 313–15.
19. *Vietnam National Defence* (Hanoi: Ministry of National Defence, 2009), p. 19.
20. Michael E. O'Hanlon, *Technological Change and the Future of Warfare* (Washington, DC: Brookings Institution, 2000), pp. 80–81.
21. Stockholm International Peace Research Institute (SIPRI), SIPRI Arms Transfers Database, 2015 [hereafter SIPRI Arms Transfers Database], www.sipri.org/.
22. William S. Turley, "Vietnamese Security in Domestic and Regional Focus: The Political-Economic Nexus," in *Southeast Asian Security in the New Millennium,* ed. Richard J. Ellings and Sheldon W. Simon (New York: M. E. Sharpe, 1996), p. 186.
23. SIPRI Arms Transfers Database.
24. "Data," *World Bank,* data.worldbank.org/; "The SIPRI Military Expenditure Database," *SIPRI,* 3 November 2015, www.sipri.org/.
25. Nguyen, "Vietnam: A Case Study," p. 126.
26. Carlyle A. Thayer, "Vietnam's Security Outlook," in National Institute for Defense Studies, *Security Outlook of the Asia Pacific Countries and Its Implications for the Defense Sector* (Tokyo: 2012), pp. 78–79.
27. *World Navies—Vietnam* (London: IHS Global, 2014), p. 6; Carlyle A. Thayer, "Military Politics in Contemporary Vietnam: Political Engagement, Corporate Interests, and Professionalism," in *The Political Resurgence of the Military in Southeast Asia: Conflict and Leadership,* ed. Marcus Mietzner (London: Routledge, 2011), pp. 71, 78–79.
28. SIPRI Arms Transfers Database.
29. "Military Aircraft," *Sukhoi,* www.sukhoi.org/; "Kh-31A," *Tactical Missiles Corporation JSC,* eng.ktrv.ru/; Martin van Creveld, *The Age of Airpower* (New York: PublicAffairs, 2011), pp. 198–204.
30. Robert Farley, "A Coming Shift in Vietnamese Military Aviation?," *Diplomat,* 16 January 2015, thediplomat.com/.
31. "Kh-35E," *Tactical Missiles Corporation JSC,* eng.ktrv.ru/; Thayer, "Vietnam's Security Outlook," pp. 79–80.
32. SIPRI Arms Transfers Database; IISS, *Military Balance 2015* (London: Routledge, 2015), p. 302; "S-300 PMU," *Federation of American Scientists,* 30 June 2000, fas.org/; Richard A. Bitzinger, *Russian Arms Transfers and Asian Military Modernisation* (Singapore: S. Rajaratnam School of International Studies, 2015), p. 9; "Ultimate Defense: Russian S-400 Undergoes Firing Exercise," *RT,* 23 August 2012, www.rt.com/.
33. *Jane's Sentinel Security Assessment—Southeast Asia, Vietnam, Procurement* (London: IHS Jane's, 2014), p. 2.
34. Vietnam Ministry of Foreign Affairs, "Vietnam-Russia Relations," *Ministry of Foreign Affairs,* www.mofa.gov.vn/.
35. *World Navies—Vietnam,* pp. 3, 6, 9.

36. IISS, *Military Balance 2013* (London: Routledge, 2013), pp. 275–76.
37. Jane Perlez, "Q. and A.: Lyle Goldstein on China and the Vietnamese Military," *Sinosphere* (blog), *New York Times,* 5 July 2014, sinosphere.blogs.nytimes.com/.
38. Thayer, "Vietnam's Security Outlook," pp. 79–80.
39. Yefim Gordon, *Flankers: The New Generation* (Hinckley, U.K.: Midland, 2002), p. 35.
40. Office of the Secretary of Defense, *Military and Security Developments Involving People's Republic of China 2015* (Washington, DC: 2015), p. 84.
41. SIPRI Arms Transfers Database; "Ballistic Missiles," *Missile Threat,* missilethreat.com/.
42. SIPRI Arms Transfers Database; IISS, *Military Balance 2014* (London: Routledge, 2014), p. 296.
43. "Vietnam, India Cooperate in Remote Sensing Technology," *Vietnam+,* 17 May 2015, en.vietnamplus.vn/.
44. Friedman, *Seapower and Space,* pp. 129–32.
45. "VNREDSat-1," *Airbus Defence & Space,* www.space-airbusds.com/.
46. The maritime radar on the DHC-6 is from Israel; the radar for the M-28 has not been delivered yet. SIPRI Arms Transfers Database.
47. IISS, *The Military Balance 2016,* pp. 244–45, 248, 298; van Creveld, *The Age of Airpower,* pp. 198–204.
48. "China's Military Regrouped into Five PLA Theatre Commands," Xinhua, 1 February 2016, available at news.xinhuanet.com/.
49. IISS, *Military Balance 2015,* pp. 245, 295.
50. IISS, *Military Balance 2016,* p. 211.
51. Andrew Erickson and Jingdong S. Yuan, "Antiaccess and China's Air-Launched Cruise Missiles," in *Chinese Aerospace Power: Evolving Maritime Roles,* ed. Andrew S. Erickson and Lyle J. Goldstein (Annapolis, MD: Naval Institute Press, 2012), pp. 279–83.
52. "Vietnam Building Deterrent against China with Submarines," *Thanh Nien Daily,* 8 September 2014, available at www.thanhnien news.com/.
53. Alexander Korablinov, "India to Train Vietnamese Pilots to Fly Sukhoi Fighters," *Russia & India Report,* 27 August 2014, available at in.rbth.com/.
54. SIPRI Arms Transfers Database.
55. Jan Joel Andersson, "Submarine Capabilities and Conventional Deterrence in Southeast Asia," *Contemporary Security Policy* 36, no. 3 (2015), pp. 488–89.
56. "Russia Assists Vietnam in Molniya Missile Boats Construction," *RusNavy,* 26 October 2011, rusnavy.com/; "Russia, Vietnam to Jointly Manufacture Anti-ship Missiles," *Sputnik World,* 15 February 2012, sputniknews .com/.
57. IISS, *Military Balance 2016,* pp. 248, 298.
58. IISS, *Military Balance 2015,* p. 245.
59. Tran and Nguyen, "Vietnam's Security Challenges," p. 106.
60. Le, "Vietnam's Hedging Strategy," p. 356.
61. *Vietnam National Defence,* p. 21.
62. Carl Thayer, "Vietnam's Navy Crosses," *Diplomat,* 2 December 2014, thediplomat .com/.
63. Nguyen Manh Hung, "U.S.-Vietnam Relations: Evolving Perceptions and Interests," in *U.S. Alliances and Partnerships at the Center of Global Power,* ed. Ashley J. Tellis, Abraham N. Denmark, and Greg Chaffin (Washington, DC: National Bureau of Asian Research, 2014), pp. 296–98.
64. "Vietnam, Russia Agree to Beef Up Defence Ties," *Vietnam Net,* 26 April 2016, english .vietnamnet.vn/; "Russia Completes Ratification of EAEU-Vietnam FTA," *Vietnam Investment Review,* 3 May 2016, available at www .vir.com.vn/; Phuong Nguyen, "What Should the United States Do about Cam Ranh Bay and Russia's Place in Vietnam?," *CogitASIA* (blog), 16 March 2015, cogitasia.com/.
65. Adam Schwarz, "Vietnam's Economic Reform to Continue under New Leadership," *Diplomat,* 30 January 2016, thediplomat .com/.