

CHINA'S MATURING NAVY

Rear Admiral Eric A. McVadon, U.S. Navy (Retired)

The East Asia security environment in which China is emerging demands that the matter of a maturing Chinese navy be put in a political context. Tension across the Taiwan Strait has recently relaxed. In Beijing, the leaders of economically successful and internationally active China do not want to jeopardize the nation's prospects for a bright future by initiating military conflict with Taiwan and the United States—quite the contrary. In Taipei, despite profound disagreement with Beijing and a major stir in domestic politics, a cautious posture in relations with Beijing now prevails. So, remarkably, amid deep, persistent, and mutual distrust, the current prospects for avoiding conflict across the Taiwan Strait are

good. Well-informed Chinese officials and prestigious Americans who have had exchanges with senior Chinese leaders confirm the relaxed circumstances and express the conviction that Beijing is confident about the situation as Chinese leaders see it developing and that Taiwan, again content with the status quo, will remain measured in its actions. War across the Taiwan Strait is not looming.

Nevertheless, Beijing is, by modernizing its military, ensuring that things will not go awry in Taiwan, that its policy of intimidation continues to work. The indisputable reality is that this military—the People's Liberation Army (or PLA), and particularly its naval component, the PLA Navy (or PLAN)—is growing greatly in capability; further, it is a growing concern

*Rear Admiral McVadon is a consultant on East Asia security affairs and part-time director of Asia-Pacific Studies at the Institute for Foreign Policy Analysis, specializing in international security factors shaping the Asia-Pacific region. During a thirty-five-year career in the U.S. Navy, he served in a variety of operational and policy planning positions, including commanding officer of a Pacific Fleet P-3C squadron; Deputy Director for Strategy, Plans and Policy, on the Navy Staff; Commander, Iceland Defense Force; and U.S. defense and naval attaché at the American embassy in Beijing. Recent publications include the book *China's Foreign Military Relations* (1999). He holds an MS in international affairs from George Washington University and is a distinguished graduate of the National War College, the Naval War College, and the Naval Postgraduate School.*

to defense and naval leaders in Washington, D.C., and other capitals, including Tokyo and Taipei. In a time of American preoccupation with the global war on terrorism, it is appropriate to draw attention to the crucial features of this modernization of components of the PLA. Beijing, if the “Taiwan problem” were to suffer a dramatic reversal, would have available an impressive force acquired for this purpose. If that force were effectively deployed, it would be sufficient in terms of hardware to undertake a two-pronged, PLA Navy–led campaign, with a big maritime component, against Taiwan and U.S. forces in a fashion that could be termed “jointness with Chinese characteristics.”

A MILITARY TO DEFEND AND DETER

When pressed on the subject, Chinese officials began some months ago to deliver both publicly and privately (to the author and undoubtedly many others) the consistent message that the military budget is not excessive, manpower is shrinking, and the newly modernized PLA is not a threat.¹ Chinese characterize the PLA instead as a deterrent force—as were U.S. forces during the Cold War, they are quick to remind. When pressed further, they accept unabashedly the retort that the modernization surge is, so far, narrowly focused on the Taiwan contingency. It is directed to deterring Taiwan’s movement toward independence, which they consider the top “threat to Chinese sovereignty,” and to curbing the ability of the United States to intervene rapidly and effectively were China compelled, as Beijing perceives it, to use military force against Taiwan.²

So the concern is that hard-liners in Beijing, obsessed by the “Taiwan problem,” might not allow prudence to prevail in decision making in a crisis and, consequently, could order the use of military force because of what they perceive as intolerable “splittist” conduct by Taipei. In evaluating the risks of an imprudent decision by Beijing, it might be asked rhetorically whether the current Chinese Communist Party is capable of as bad a choice in a future Taiwan crisis as most observers think the party made with the Great Leap Forward, the Cultural Revolution, and the actions in 1989 now referred to simply as “Tiananmen.” Some observers increasingly find reason to be optimistic, but it is hard to offer unqualified assurance that Beijing could not again make a very bad decision.

It is the result of decisions obviously made several years ago that a new, modern, and much more capable PLA Navy has, along with the Air Force and 2nd Artillery Corps (the ballistic- and long-range-cruise-missile force), been acquired and deployed. A stunning modernization effort continues. Regardless of how Beijing’s intentions are viewed, the surge in PLA modernization has radically changed the military situation for Taiwan. Taipei is more than ever forced to look to Washington to cope with this more advanced, capable PLA, with the strategic depth of huge China behind it.

Moreover, the PLA now hopes to bring to reality concepts its strategists have written about, such as how an inferior force can prevail against a superior opponent—that is, China versus the United States. Specifically, the critical aspects of a new navy and the highly significant synergies that may develop between it and the missile and air forces warrant full attention, because they are directed specifically at deterring, delaying, or complicating timely and effective American access and intervention. U.S. forces must be able, should the Taiwan pot boil over, to turn the tables and deter Beijing from using its proclaimed deterrent forces—or to ensure a favorable outcome if mutual deterrence fails. The ultimate American goal, however, should be to make the chances of conflict even less than they are. Understanding the important developments described here seems a necessary step toward that goal.

STARTING WITH QUESTIONS

The following questions and answers may be an unusual way to begin probing the specific naval aspects of the issue, but they focus on an often neglected, but arguably the most surprising, single PLAN acquisition program—its bold move to build quickly a modern nuclear submarine force despite its troubled past in this arena. These incisive questions—posed to the author in 2005 by experts on the Chinese submarine force—are especially useful in that they take the PLA's Taiwan obsession fully into account but also look beyond. They reveal the layers of complexity and uncertainty inherent in the very rapid and impressive modernization of the PLA Navy—a navy that, it is worth emphasizing, is arguably the only one in today's world that the U.S. Navy must deter or be able to defeat, but also a navy that under different circumstances could become a high-seas partner.

- *How “mature” is China’s navy? Does the PLAN have the requisite human capital, organizational practices, and exercise regimen to become a world-class fleet?* The PLAN is most nearly mature with respect to platforms and weapons but, approximately in the order listed, progressively less so in human capital, organizational practices, and exercise regimen. It is working to become better in each.
- *Are nuclear submarines a good fit for China’s emerging naval strategy? Will the balance of forces (i.e., nuclear versus diesel submarines) change in the future?* The currently emerging balance is a good fit, especially vis-à-vis China’s current set of potential adversaries. If the Taiwan problem were eliminated somehow, a shift toward nuclear submarines to protect more distant sea-lanes would be a logical option. This makes the PLAN nuclear submarine program a possible bellwether for future naval policy more generally.
- *What are the trends in undersea warfare and antisubmarine warfare (ASW) in the western Pacific region?* The superiority of the U.S. nuclear submarine

force will continue; however, the Chinese are apparently developing ballistic missiles with maneuvering warheads and terminal seekers to hit ships at sea. This capability to lob numerous accurate ballistic missile warheads high over the heads of all defenders could effectively circumvent the anticipated quiet and capable U.S. nuclear attack submarines. The PLAN has previously seen these submarines as all but impossible to penetrate with its own submarines (or surface ships) to reach the carriers and cruisers it wants to disable. Despite the PLAN's ineptitude at antisubmarine warfare, short of a (plausible) major breakthrough, the trend in submarine/ASW competition is going China's way: the PLAN's submarine numbers and diversity trump, or at least could saturate, likely ASW opposition for the foreseeable future, especially in case of the short war Beijing contemplates. With respect to Taiwan's ASW capability (almost an oxymoron now), the Republic of China (ROC) Navy would still have to learn to use its P-3C antisubmarine patrol aircraft after getting them; its prospective new submarine force of eight diesel submarines, if approved for acquisition (as currently seems unlikely), would be a decade or more from operational status and even then inadequate for antisubmarine warfare against what would by then have become a remarkably numerous, diverse, and advanced PLAN submarine force.

- *What strategic dilemmas might Washington encounter as a result of China's new nuclear submarine force?* Beijing's smug confidence that Washington must always keep in mind China's status as a nuclear power will be reinforced if the PLAN is successful with its ongoing program to build several modern Jin-class (Project 094) nuclear-powered ballistic-missile submarines (SSBNs). Its sequential construction of Shang-class (Project 093) nuclear-powered attack submarines (SSNs) adds the component of reach (range and speed) to the existing qualities of numbers of its nuclear and conventional submarines, as well as quietness for a growing portion of that force and potency of weapons for a similar portion—especially for the new Kilo-class diesel submarines from Russia, with their long-range, supersonic, sea-skimming antiship cruise missiles (ASCMs). A “new PLAN” with these new nuclear-powered submarines and stunning array of other new and modern platforms and weapons is highly likely to view itself in a different strategic light, as yet unrevealed, than has the “old PLAN.”

A MATURING BUT STILL ADOLESCENT NAVY

Harking back to the title of this article, the PLA Navy might best be described as an adolescent rather than mature navy, with the caution that adolescents can

exhibit qualities across the range from juvenile to adult, often commit crimes that warrant treatment as adults, and mature unpredictably. To extend the adolescence analogy a bit more, the PLAN is growing remarkably in size and strength, even “bulking up” (in the American vernacular); all observers remark how it has grown since the last time they saw it.³

Simply fielding more modern units does not make the PLAN a truly modern operational force. The limits on how China’s and the navy’s leaders are able to employ their new capabilities represent significant shortcomings, and success in the effort to overcome them is far from assured. Put another way, the PLAN has matured remarkably insofar as acquiring platforms and equipment (ships, submarines, aircraft, radars, and so on) and weapons (antiship cruise missiles, air defense missiles, torpedoes, and the like) is concerned, but this “new PLA Navy” has not matured fully in exercising its forces and developing the command and control capabilities, coordination means, and intelligence and targeting support needed to make that force fully operational—especially in comparison with its most important and most capable potential adversary, the U.S. Navy.⁴

Better officers are on the way up—if they make it. The PLAN recognizes that to conduct complex joint operations, exercise greatly enhanced command and control, and effectively employ modern weapons it needs a better-educated, more worldly officer corps, and it is striving to do that, or so it says.⁵ PLAN officers are taking more prominent positions in institutions that do strategic thinking; for example, in two recent firsts for naval officers, Admiral Zhang Dingfa headed the Academy of Military Science (he now serves as the commander of the PLAN), and Rear Admiral Yang Yi is still director of the Institute of Strategic Studies at the National Defense University in Beijing. The PLA Navy seeks officers educated in first-rate civilian universities.⁶ The emphasis, however, appears to be on specific technical and scientific education;⁷ this approach neglects, it seems, the parallel need for specialists in operations, security issues, strategic studies, and international affairs.⁸

Details aside, an important and yet unanswered question is whether the PLA Navy wants officers better educated or considers them better Red. That is, will competent, forward-thinking officers be selected for flag rank, or will party loyalty and personal connections continue to prevail as the paramount selection criteria?⁹ This author has lectured and conferred at the National Defense University and other PLA institutions on several occasions at which junior officers asked all the questions and did all the talking while flag and general officers who were students remained silent—at least in part, it appeared, for fear of being outshone in these lively and insightful discussions. It would seem that at some point the demands of a modern PLA will force the promotion of more of the officers who have all the intelligent questions and original thoughts.

Organization is improving, but maybe not yet enough. The PLA Navy structure has been streamlined: naval aviation no longer stands alone as though an almost separate service; closer ties have been established with the PLAN's marine corps; and there are fewer layers in the chain of command.¹⁰ Nevertheless, the author has observed and been told, there is still much deadwood at the top: individuals in green uniforms with two or more stars on their shoulders (PLA ground-force generals) who persist in treating the PLAN as mostly an adjunct to the army, and senior officers who, through lack of vision, fail to move decisively toward true joint operations. These generals represent obstacles at a time when real coordination with the 2nd Artillery Corps and the PLA Air Force would lead to enormous advances in the ability to polish off Taiwan, threaten American intervention capabilities, and keep Japan off balance.

China's navy is still failing to conduct exercises needed to develop its potential capability. It continues to steam in the littoral for the most part. However, the PLAN aspires to, and is erratically striving to conduct, training and exercises in more distant waters; to make its training more like combat; to challenge itself in exercises with active, maneuvering opposition forces; and otherwise to add realism to its training and exercise activity. It has even been so bold as to engage, in August 2005, in a major multiphased exercise with the Russian Navy, a notable advance beyond the minor, very basic exercises it has conducted with the French, British, Australian, Pakistani, and Indian navies in recent years.¹¹ A few years ago the PLAN would not have participated in such exercises at all, fearing not only prying (as well as spying) but embarrassment, that its shortcomings and backwardness would be revealed. Chinese naval leaders now seem sufficiently confident in their crews to seek international partners for exercises. (It will be interesting to see if several unflattering post-exercise Russian media reports rejuvenate concerns that bilateral exercises lead to ridicule and embarrassment.)¹²

Still, the import of the Russian-Chinese exercise should not be overstated. It was initially described by many as preparation for countering U.S. forces in the region. As later and more accurately described, however, it primarily demonstrated that Sino-Russian bilateral relations are strong, especially military-to-military relations and arms sales. The exercise itself, held in waters just off the Shandong Peninsula, was hardly a simulation of access denial against approaching U.S. forces. Its significance in that respect would seem to be less direct. The fact that it was held at all suggests that the Russians are more likely than we might have surmised to provide logistic and possibly intelligence support—specifically, to offer to resupply missiles and spare parts for the key Russian weapon systems that China would employ in combat with Taiwan and the United States.¹³

If it would be exaggeration, then, to assess this exercise as a sign of emergence as a fully mature force, the PLAN is creeping toward real blue-water exercises

with composite task forces including surface combatants, submarines, and aviation. So far, only in occasional and isolated distant submarine transits does it approximate the task of confronting an enemy, the U.S. Navy, that it might need to keep at arm's length, many hundreds of miles from the Chinese coast.¹⁴ In short, the PLAN is not visibly conducting exercises, alone or with other services, that rehearse confrontation with approaching U.S. Navy forces. The United States should be alert to such a development with this new force, a force designed to have the capabilities that could make such operations feasible.

ATTACKS FROM SEVERAL AXES

A new aspect of budding maturity, what could facetiously be termed “socialization,” is looming and demands attention—the prospect that the PLAN and the 2nd Artillery Corps could (and should) join hands to bolster the nation’s capability to attack Taiwan and pose a significantly greater and more diverse threat to the ability of the United States to intervene in the region. The greatly increased number and highly improved accuracy of China’s medium- and short-range ballistic missiles (MRBMs and SRBMs), plus strategic and technical writings, suggest strongly that senior Chinese military leaders have recognized the enhancement of naval capabilities that would result from support by ballistic and land-attack cruise missiles. China’s MRBMs (the DF-21C) and SRBMs (DF-15 and -11), with conventional warheads, have capabilities well beyond the psychological intimidation of Taiwan.¹⁵ Prospective synergies stem from the ability of these potent missile arsenals to suppress Taiwan’s offensive and defensive air power, support amphibious and airborne assaults on the island, strike American bases in the region, and possibly damage heavily Taiwanese naval forces before they could leave port.

However, the most important aspect of the increasing ballistic-missile threat is the prospect that within a few years China may be able seriously to threaten not only American land bases but also carrier strike groups, with maneuvering reentry vehicles (MaRVs).¹⁶ MaRVed missiles, with conventional warheads, would maneuver both to enhance warhead survival (defeat missile defenses) and home on mobile (or stationary) targets.¹⁷ The implications for the PLAN of this prospective 2nd Artillery capability are, of course, profound; they include the ability to degrade U.S. air and missile defenses (including the Aegis systems and carrier flight decks). That would allow follow-on attacks by layered, diverse, and appropriately redundant PLAN submarine, air, and surface forces firing large numbers of very modern and capable ASCMs, torpedoes, and even their guns if the earlier attacks suppress most defenses.¹⁸ This and what follows are in clear outline the sort of threat the PLA and PLA Navy wish to pose to U.S. Navy forces. The precisely focused force the Chinese have built and what they have

written about its use leave no doubt about the concept—although there are grave doubts about their ability to conduct it.

Whether, or how soon, the ballistic-missile threat becomes a factor in the ability of the PLAN to deter, confuse, and delay or, alternatively, confront approaching U.S. Navy forces, the ability to launch lethal antiship-cruise-missile attacks is an area where the PLAN is already near or at maturity—even if the targeting of American forces at which to launch them has not reached a mature state. The PLAN became early a cruise-missile navy, as a way of overcoming other deficiencies. Now it must be described as a *modern* cruise-missile navy, at least with respect to the platforms and lethal, evasive missiles it is deploying.¹⁹ The PLAN's four newest classes of submarines, armed with potent ASCMs, fall just below MaRVed ballistic missiles in the hierarchy of potential or emerging threats to U.S. forces.

At the top of the submarine component of the overall threat are the eight new Kilo-class diesel-electric submarines from Russia that are now being successively delivered to China. These submarines threaten carrier strike groups through their ability to launch, while submerged over a hundred miles away, the SS-N-27B/Sizzler antiship cruise missile.²⁰ After a subsonic flight to the target area, the SS-N-27B makes a supersonic, sea-skimming, evasive attack.²¹ It is described by its marketers and others as part of the best family of cruise missiles in the world and, in the opinion of some, as able to defeat the U.S. Aegis air- and missile-defense system that is central to the defense of carrier strike groups.²²

Shang-class (Type 093) SSNs are possible partners for the new Kilos. The surprisingly rapid construction of successive units in this new class of nuclear-powered attack submarine implies special utility in a Taiwan contingency. The Shangs could, if they prove sufficiently quiet and fast and are properly equipped with sensors, be part of the net by which the PLAN locates and identifies approaching U.S. carrier strike groups.²³ If used this way, they could be part of a matrix composed of such detection and reporting means as satellites, merchant ships, and even fishing boats with satellite phones.

Having served as part of the matrix that detects targets for the ballistic missiles and Kilos, the Shangs could then join with the Song- and Yuan-class non-nuclear submarines (SSs) in attacks against selected U.S. forces that have, as expected in the sequenced PLA attack concept, suffered by that point significant degradation of their air and missile defenses.²⁴ These three classes of submarines could carry out, from several attack axes, submerged launches of large salvos of subsonic, but still very capable, ASCMs. Of course, further follow-on attacks by torpedoes cannot be discounted if they appear to be needed.

China's other new nuclear-powered submarine program, the Jin-class (Project 094) ballistic-missile submarine, is primarily a part of China's strategic deterrent,

but it will necessarily play a role as backdrop for this Taiwan scenario.²⁵ As with China's modernized and augmented land-based intercontinental ballistic missiles, Beijing can act more confidently in bold undertakings vis-à-vis the United States when its strategic forces are more secure. With the Jins, Beijing is adding a layer of insurance that American missile defenses could be saturated—and that Washington would know it. Washington, of course, would have to take into account the fact that it is dealing with a capable nuclear power whose missiles have become very mobile and hard to detect.

A DAUNTING ASW CHALLENGE

The success of the described PLAN submarine attacks using submerged-launch antiship cruise missiles depends to some degree on thwarting or coping with U.S. antisubmarine warfare capabilities, primarily aircraft (P-3Cs and to a lesser extent shipborne helicopters) and SSNs. One method by which the Chinese might complicate the ASW picture for the Americans is to use large numbers of submarines, including the score or more older submarines—Han-class SSNs and Romeo- and Ming-class SSs—which may be noisy but cannot be ignored. In round numbers, the PLAN might, in a campaign where it has chosen the time to ready the crews and initiate operations, be able to deploy more than twenty modern SSNs and SSs and roughly the same number of older submarines.²⁶ The long range of the ASCMs carried by the new Kilos means that those submarines need not come within a hundred miles of the target ships, if targeting information can be obtained remotely—greatly expanding the areas that American SSNs and P-3Cs would have to search. The speed and practically unlimited underwater endurance of the new Shang SSNs could allow them to close targets promptly to launch their shorter-range ASCMs after the initial attacks by longer-range missiles have degraded defenses.

The role of Taiwan in antisubmarine warfare deserves some attention. Taiwan's current ASW capability is minimal. That capability might improve in the foreseeable future were Taiwan to obtain from the United States the much-discussed P-3Cs, but that will depend on how seriously the ROC Navy pursues the demanding task of learning how to do antisubmarine warfare with that aircraft. If it does that well, Taiwan's P-3Cs might offer a measure of help in the big ASW problem that the PLAN could create in the East China Sea and beyond.²⁷ The Japanese Maritime Self-Defense Force would offer another measure of assistance, if Tokyo were to make a political decision to involve its forces in that way. All this said, China's growing and improving submarine fleet has outpaced U.S., Japanese, and Taiwanese ASW in the difficult littoral waters of the region, which generally favor submarines seeking to escape detection.²⁸ Open-ocean areas may be a slightly riskier proposition for the PLAN's

submarines, unless they actually achieve the elusive new levels of stealth to which China aspires.

The previously described antisurface-warfare roles seem the most likely ones for the PLAN's new Shangs. It does not seem likely that the PLAN, inexperienced compared to the U.S. Navy in undersea warfare, would use its few new SSNs—precious to the Chinese but almost certainly not comparable to American SSNs in capability and stealth—in an effort to strip the carrier groups of their submarine protection. So far, China has conceded that aspect of the game to the United States and chosen to avoid dueling with the superior American submarines. By electing to develop a land-based ballistic-missile threat against ships at sea, China is pursuing a path that could keep U.S. submarines from blocking a critical initial attack on carrier strike groups. If in the event the ballistic-missile concept is not usable or fails in execution, the new Kilos with the SS-N-27B, the many other submarines with ASCMs, and the increasingly capable PLA naval air force B-6s, FB-7s, and Su-30MK2s (to be mentioned in more detail later) provide other alternatives that largely avoid American underwater-warfare superiority. The point is that as the Shangs are introduced into the fleet, it seems unlikely that they will be expected to take on American SSNs directly.

ENOUGH TO MAKE WASHINGTON PAUSE?

The intensity and persistence of PLAN attacks on U.S. Navy forces could well be affected by Beijing's perception of the fragility of a government on Taiwan subjected to a major assault from everything from ballistic missiles to aircraft to special forces—and much more. It should be remembered that the primary purpose of denying or delaying access by U.S. forces would be to convince Taipei that waiting for help is futile, that capitulation and negotiation—on Beijing's terms—are the only reasonable option. Success against U.S. forces is, therefore, important largely for its effect on Taipei's will to fight on. Success in such conflict would be sweetest for the PLA if the United States never became actively involved, concern about the capabilities of a modernized Chinese force having led American leaders to delay or withhold carrier strike groups.

Returning from strategic considerations to the fight itself, were one to occur, the Chinese can be expected next to deliver air-launched antiship cruise missiles once the air defenses of the U.S. strike groups, and possibly regional bases as well, are degraded. So this “layer” in the assault might be the PLA Navy Air Force, attacking several hundred miles out to sea from China (in some cases possibly much farther) with potent new air-launched ASCMs fired from new aircraft from Russia (the Su-30MK2) and indigenous long-range B-6s (a new version with new missiles) and FB-7 maritime interdiction aircraft, also with new ASCMs.²⁹ (Note how many times the word *new* appeared, correctly, in that

sentence.) Some PLA Air Force aircraft have similar capabilities. At a minimum, the U.S. Navy would have to be concerned about vulnerability to such an attack and, if it had, indeed, sustained damage, might feel it had to retreat. Beijing would make sure that such a development was not lost on Taipei—and we are seeking here to understand more fully how Beijing envisions a conflict with its modernized forces, not necessarily the reality.

Surface combatants would be a final layer if a supposedly casualty-averse Washington and teetering Taipei have not yet taken the point. Cleanup attacks might in such a case be intended, with very capable ASCMs from the several new or upgraded classes of destroyers and frigates. These warships are led, with respect to lethal firepower, by Russian *Sovremennyy*s (soon to increase from two to four) with supersonic, very evasive SS-N-22s.³⁰ China has built or is building enough new and modernized destroyers and frigates to form several modern surface action groups, each capable of long-range attacks with almost equally lethal, although subsonic, ASCMs. Also—and here it is finally beginning to overcome a long-standing shortcoming—the PLA Navy is on the way to acquiring good fleet air defenses using surface-to-air missile systems.³¹

To capture succinctly the scope of the modernization of the surface combatant force, it can be said that the Chinese are now building and dramatically upgrading more *classes* of modern destroyers and frigates (these combatants clearly outmatch those of Taiwan) than previous rates suggested they might acquire *ships* in this decade.³²

The question that cannot now be answered is whether such a visible and slow-moving force, even with dramatically improved air defense, could actually engage even a damaged U.S. force and not be subject to devastating attack by other American strike forces. There are, however, broader uncertainties for the PLAN. As noted, the concepts outlined above emerge from the force Beijing is building and from PLA doctrinal and other writing. Beijing has made hard decisions and executed expensive programs in the ongoing surge in the modernization of the PLA, with great emphasis on naval, air, and missile forces for such operations as described. But surveillance and targeting support will be needed if this force is to deter or confront American intervention efforts. To that end, it appears that China is making significant efforts to gain a varied capability from space, land, sea (including undersea), and air to locate, identify, track, and target naval forces.³³ China is lagging in this arena—real success in the intelligence, surveillance, and reconnaissance (ISR) arena could take a decade—but one might make a guess that some rudimentary, if not reliable and consistent, capability could be cobbled together within a couple of years. In other words, there is impending danger that U.S. ships could be detected and effectively targeted. At least equally important is whether China will be able to coordinate, command,

and control such operations—that is, what of the C4* to go with the ISR? The PLAN, although now more realistic and somewhat bolder in its training and exercises, as mentioned above, has not, for example, touted or otherwise given evidence of rehearsals of encounters with simulated carrier strike groups hundreds of miles east of China, as it might do as part of a deterrence scheme.

There is, as described, no doubt about the acquisition of modern platforms and threatening weapons, but there remains puzzlement as to whether and how promptly the PLA Navy and the other crucial components of the PLA will make all this capability truly operational. There is, nevertheless, an additional serious corollary as to whether Beijing would feel compelled in some circumstance to initiate hostilities against Taiwan and to confront U.S. forces even if preparations were short of optimal. It is hard to relax with respect to Beijing and Taiwan, even if we think Chinese command and control is not up to the task.

This all adds up to a complex planning and execution challenge for an inexperienced PLA. In the scenario depicted above, it would be conducting two major campaigns simultaneously: one to subdue Taiwan and the other to delay effective American intervention. The campaign against Taiwan would likely include initial ballistic-missile and land-attack cruise-missile attacks; special forces, fifth-column sabotage, and other such actions; information operations; major air attacks; and amphibious and airborne assaults to secure lodgments to allow occupation and control of Taiwan. The campaign against the United States, in addition to being preceded by extensive efforts temporarily to cripple American C4ISR,[†] would, it should be remembered, consist of the described ballistic- and cruise-missile attacks on carrier strike groups and possibly regional U.S. bases, submarine attacks using various forms of antiship cruise missiles, and then selections from such follow-on options as ASCMs from air or surface forces. This would be an extraordinarily demanding undertaking against a daunting foe for a PLA leadership that has no experience in such combat.

The author's guess is that the PLA would quickly succeed against Taiwan but would probably falter against U.S. forces, against which it would encounter surprises, countermeasures, and other capabilities that would likely cause severe reversals. It must also be remembered, however, both that China's best strategic and military minds are working on these problems and that Beijing may feel it has to act against Taiwan regardless of how challenging the prospect may appear. Moreover, it is unlikely that the leaders of today's modernized PLA would tell the civilian leadership that their military is not ready. On the contrary, Beijing and

* C4: command, control, communications, and computers.

† C4ISR: command, control, communications, computers, intelligence, surveillance, and reconnaissance.

the military have reason to believe that their forces are of such a nature as to avoid American strengths, like SSNs and advanced C4ISR, and to make the most of China's strengths, such as its ballistic and cruise missiles and new conventional and nuclear submarine forces. The United States has the task not only to deter this modern military that could embolden Chinese leaders but also, irresistibly yet subtly, to lead those leaders to the conviction that a decision to attack Taiwan is not in China's interests and would not likely result in reunification.

BEYOND "THE TAIWAN PROBLEM"

The PLA, especially the PLAN, now seems almost wholly, even obsessively, focused on the Taiwan problem. Two other factors should be taken into account, however, and already seem to be intruding into Chinese strategic thinking. First, an emerging China wants to build a military appropriate to the country that it is becoming. Second, China's all-important national economic growth, which keeps the Communist Party in power, is dependent on ocean commerce. As the PLA Navy tries to look beyond Taiwan or to decide what, even now, it should be thinking about besides that, it sees a long-term capability to secure sea and land routes for the flow of oil and natural gas, as well as other commodities, as a leading priority for China.

Will we see an organic air capability and a shift to more nuclear submarines? A PLA Navy able to carry out that mission would almost certainly have some form of organic air, so that it could effectively operate beyond the range of land-based aircraft—far south in the South China Sea, the Strait of Malacca, even to the Indian Ocean. Current shipyard work on the incomplete aircraft carrier *Varyag* may be the start of a move in that direction, unlike so many Chinese aircraft-carrier rumors of past decades.³⁴ Another consideration could be a leaning toward submarines with greater range, speed, and independence from land bases. This could mean that nuclear-powered attack submarines, despite the added cost, might be preferred over diesel-electric or even air-independent-propulsion submarines.

SSNs are a possible bellwether of PLAN strategic thinking. China is now building and buying three classes of nonnuclear submarines: the Kilos, the Songs, and the Yuans (some speculate about the exact character of the Yuan propulsion system). These submarines, along with the older Mings and remaining Romeos, represent a major investment and will almost certainly constitute a majority of the submarine fleet for the next fifteen years or more. It will, nevertheless, be worthwhile to keep an eye on China's success with the Shang attack class, to ascertain whether it will feel the need suggested above for a faster, more independent force to protect distant sea lanes, and whether an emerging China will follow the American example and diversify its SSN fleet to include land-attack

cruise-missile capabilities and the ability to insert special forces—or possibly other, novel capabilities needed in emerging missions for an emerged China.

China's navy has developed in many remarkable ways, but perhaps the biggest test of maturity is the bold attempt to leap to a new status in the prestigious and unforgiving domain of nuclear submarines—where it had previously faltered. To a significant degree, the success or failure of its new nuclear-powered submarines, the Jin-class ballistic-missile class as well as the Shangs, is likely to determine future decisions for the Chinese submarine force. The American example in diversifying its nuclear submarines may also become a factor, in the form of an example. The outcome for the nuclear submarine force could set the tone for a navy that either comes to feel that it ranks with the best or, having “tried out for the pros,” finds that once more it has faltered.

In any case, it is instructive to imagine a particularly intelligent and competent young Chinese naval officer just beginning his service. That junior officer must today see the prospect, at least, of a promising career ahead as a nuclear submariner in a globally capable “real navy”—the prospect of professional challenge and esteem comparable to that of an American counterpart. That in itself is a remarkable and telling change from a few years ago, when serving on troubled Chinese nuclear submarines was thought by some to be as much a joke as a job. Such success as the Chinese submarine force attains would tend to be infectious and to bolster the professionalism of other components of the modern PLAN, where newfound pride is thriving as well. The PLA Navy is not fully mature, but it has established its potential for that status in the air, on the sea, and, conspicuously, under the sea.

NOTES

This article is adapted from a paper delivered at the Naval War College's “China's New Nuclear Submarine Fleet” Research Symposium, 26–27 October 2005.

1. Previously, the author had been told privately that the PLA was surging in capability because it finally had the funds from Beijing, the technologies and assistance from Moscow, and the realization that Washington was not going to accept Beijing's position on Taiwan. Prominent in the recent public exchange was the Chinese response to three events: first, Secretary of Defense Rumsfeld's complaints about the large PLA budget, made at a conference sponsored by the International Institute for Strategic Studies in Singapore on 4 June 2005;

second, his similar comments in Beijing in October 2005; and third, the 2005 annual Department of Defense report to the Congress on PRC military power. Typical of the strongly stated disagreement were the widely noted immediate objection expressed by Cui Tiankai, top Chinese representative at the Singapore conference, and the sharp retort of Vice Foreign Minister Yang Jiechi, the former Chinese ambassador in Washington, as quoted in the *Washington Post* on 21 July 2005, p. A24. He chastised the United States for “improper comments about China's defensive national defense policy and measures” and called the buildup “normal national defense building.” Yang asserted that most of

the new spending went for improving living conditions for troops, noting, rather disingenuously, that the military also “updated some weapons equipment.”

2. On 4 December 2005, while preparing this article, the author met with two longtime Chinese colleagues, a diplomat (senior foreign service officer) and a senior PLA Navy officer, both of them well informed and well connected. They agreed with each other (and unknowingly with American observers) that conflict with Taiwan and the United States was unlikely and that cross-Strait relations were relaxed. The diplomats said that Beijing’s relaxed attitude stemmed in part from recently enhanced confidence with respect to political developments in Taipei favorable to Beijing and prospects for eventual peaceful resolution. They offered no apology or explanation for the fact that PLA modernization is focused on the Taiwan issue; both seemed to consider the unprecedented military buildup simply appropriately responsive to the task of deterring and being able to cope with China’s most important contingency—the Taiwan-U.S. “threat.”
3. For a description of this PLA Navy, Air Force, and 2nd Artillery modernization surge, see the author’s testimony on Capitol Hill on 15 September 2005 before the U.S.–China Economic and Security Review Commission, available at www.uscc.org or at www.ifpa.org/pdf/mcvadon.pdf. For an exhaustive but illuminating description by a non-American source of the PLAN program, see Mikhail Barabanov, “Contemporary Military Shipbuilding in China,” *Eksport Vooruzheniy*, 1 FBIS CEP20050811949014, August 2005. This piece (perhaps unexpectedly) is a remarkably accurate and uniquely comprehensive open-source reference on the recent stunning surge in modernization of the PLAN.
4. U.S. Defense Dept., *FY04 Report to Congress on PRC Military Power* (available at www.defenselink.mil/pubs/d20040528PRC.pdf), states on page 6: “China has continued to improve its potential for joint operations via development of an integrated command and control network, a new command structure, and improved C4ISR platforms. As in previous years, China’s leaders realize that most of the PLA’s C4ISR equipment lags generations behind that of the West and are encouraging a new generation of researchers, engineers, and officers to find ways to adapt to the demands of the modern battlefield. The acquisition of advanced C4ISR technology is one of the principal objectives of PRC collection activities.”
5. David Shambaugh, *Modernizing China’s Military: Progress, Problems, and Prospects* (Berkeley: Univ. of California Press, 2002), pp. 32, 46–47. “The PLA is still the party’s army, all officers above the rank of senior colonel are party members, and the CCP still institutionally penetrates the military apparatus.” “The rules of the game . . . have changed as a result of several developments: [among Shambaugh’s listed developments]—Increased professionalism in the senior officer corps and a concomitant decline in the promotion of officers with backgrounds as political commissars.”
6. Paul H. B. Godwin, “China’s Defense Establishment: The Hard Lessons of Incomplete Modernization,” in *The Lessons of History: The Chinese People’s Liberation Army at 75*, ed. Laurie Burkitt, Andrew Scobell, and Larry M. Wortzel (Carlisle, Penna.: U.S. Army War College, Strategic Studies Institute, July 2003), p. 33. Godwin states: “Officer recruitment has been changed to an emphasis on college graduates rather than selecting from the ranks of serving enlisted men and women, and advancement in rank now requires attendance at the appropriate PME schools.”
7. Bernard D. Cole, “The Organization of the People’s Liberation Army Navy (PLAN),” in *The People’s Liberation Army as Organization: Reference Volume v1.0*, ed. James C. Mulvenon and Andrew N. D. Yang (Santa Monica, Calif.: RAND, 2002), p. 476. “The PLAN is emulating the U.S. reserve officer-training corps (ROTC) programs for producing well-educated, technically oriented candidate officers.”
8. Beijing *Xinhua*, 17 August 1999, translated in FBIS-CHI-99-0817: “The Chinese navy plans to recruit about 1,000 officers from non-military universities and colleges yearly beginning this autumn in an effort to meet its need for command and technical talent. . . . [these officers] will account for 40 percent of all naval officers by the year 2010.” This was originally cited in Cole, “The Organization of the People’s Liberation Army Navy (PLAN),” p. 477.

9. Elizabeth Hague, "PLA Leadership in China's Military Regions," in *Civil-Military Change in China: Elites, Institutes, and Ideas after the 16th Party Congress*, ed. Andrew Scobell and Larry Wortzel, eds. (Carlisle, Penna.: U.S. Army War College, Strategic Studies Institute, September 2004), pp. 247, 250. Two extracts from this chapter illustrate that party loyalty, *guanxi* (connections), and a reputation for not rocking the boat remain important in promotion decisions: "Several military region commanders have been promoted . . . to the national level. . . . [I]n all cases they involve a candidate . . . valuable for a national-level position—even when other factors, such as connections, were a strong factor in a promotion" [emphasis original]. Further, "Military leaders reflect PLA priorities, even in some cases when what the leader has to offer is continuity rather than new ideas or techniques."
10. The author and another longtime American specialist on the PLAN were separately told of these organizational changes by knowledgeable PLAN officers.
11. These exercises with foreign navies consisted of search-and-rescue drills, communications exercises, and even replenishment alongside in at least one case; however, conspicuously absent were tactical operations. The author has been told authoritatively that planned or proposed exercises with Thailand and other ASEAN countries will also have the goal of fostering bilateral relations, not of achieving operational capability.
12. Nikolay Petrov, "Moscow and Beijing Did Not Mention Their Loses [*sic*] That They Incurred during the Joint Maneuvers," *Moscow Kommersant*, FBIS CEP20051013330001, 8 September 2005. The following FBIS reports contain left-handed compliments and question PLA competence: "Chinese Army's 'Iron Discipline' Impresses Russian Defense Minister," Moscow RIA-Novosti, CEP20050825002002, 25 August 2005; "Russia: Results of Joint Military Exercise with China Assessed," Moscow Rossiya television, CEP20050927027016, 24 September 2005; "Russian TV Looks at Military Cooperation with China Post-Exercise," Moscow Zvezda television, CEP20050919027182, 19 September 2005.
13. "China-Russia: PRC Media on Sino-Russian Military Exercises Project Image of Converging Interests in Asia," FBIS Feature, FEA20050831007588, 31 August 2005. This analysis of the August 2005 Russian-Chinese exercise quotes the principal Chinese and Russian generals involved as saying the exercise represented "a major strategic decision of the Russian and Chinese leaders" aimed at deepening "strategic cooperative partnership"—a phrase described by the FBIS analyst as normally used to describe bilateral relations.
14. Richard Halloran, "Chinese Sub Highlights Underseas Rivalries," *Japan Times*, 30 November 2004, available at search.japantimes.co.jp/print/opinion/eo2004/eo20041130a1.htm.
15. U.S. Department of Defense, *Annual Report to Congress: The Military Power of the People's Republic of China 2005*, July 2005, pp. 12–13; available at www.defenselink.mil/news/Jul2005/d20050719china.pdf. On MRBMs, see Mark A. Stokes, "Chinese Ballistic Missile Forces in the Age of Global Missile Defense: Challenges and Responses," in *China's Growing Military Power: Perspectives on Security, Ballistic Missiles, and Conventional Capabilities*, ed. Andrew Scobell and Larry M. Wortzel (Carlisle, Penna.: U.S. Army War College, Strategic Studies Institute, September 2002), p. 113, available at www.strategicstudiesinstitute.army.mil/pdffiles/PUB59.pdf. The DF-21 family is also called the CSS-5. On SRBMs, see *ibid.*, p. 116. The DF-15 and DF-11 families are also called the CSS-6 and CSS-7, respectively.
16. Stokes, "Chinese Ballistic Missile Forces in the Age of Global Missile Defense," p. 150 note 12.
17. See Eric A. McVadon, *Recent Trends in China's Military Modernization*, written statement prepared for testimony before the U.S.-China Economic and Security Review Commission, 15 September 2005, available at www.ifpa.org/pdf/mcvadon.pdf. The information was derived from many translated Chinese articles during recent years; sources can be identified for serious researchers.
18. Admiral Lowell E. Jacoby, Director, Defense Intelligence Agency, *Current and Projected National Security Threats to the United States*, statement (excerpted) to the Senate Select Committee on Intelligence, 24 February 2004, available at www.ransac.org/Official%20Documents/U.S.%20Government/Intelligence%20Community/492004113202AM.html.

19. See Barabanov, "Contemporary Military Shipbuilding in China," for an open-source catalogue of PLAN modernization efforts.
20. John R. Benedict, "The Unraveling and Revitalization of U.S. Navy Antisubmarine Warfare," *Naval War College Review* 58, no. 2 (Spring 2005). "The recent sale [to China] of eight additional Project 636 Kilos equipped with wake-homing antiship torpedoes and submerged-launch 3M54E Klub-S [the SS-N-27B] antiship cruise missiles is indicative of the transformation of this submarine force. The Project 636 Kilo 'is one of the quietest diesel submarines in the world' [quoting the Office of Naval Intelligence]; . . . the Klub-S missile has a 220-kilometer maximum range . . . and a terminal speed of up to Mach 3. Such a capability represents a very formidable threat to American and allied surface units" (p. 102).
21. "Klub (SS-N-27) ASCM," *Barat Rakshak: The Consortium of Indian Military Websites*, 12 September 2004, www.bharat-rakshak.com/navy/Klub.html. This and several of the following citations from public sources serve usefully to describe Chinese acquisitions and deployments; the varied character of these sources also illustrates that reasonably accurate descriptions of the ongoing PLA modernization are publicly available. The problem can be culling inaccurate reports; the author is often able to do so by asking knowledgeable PLA officers and through active exchanges with other diligent specialists.
22. "Russia to Deliver SS-N-27 to China," *Chinese Defence Today*, 29 April 2005, available at www.sinodefence.com/news/2005/news29-04-05.asp.
23. On quietness and sensors, see Zachary Moss, "Nuclear Submarines Worldwide: Current Force Structure and Future Developments," *Bellona Nuclear Naval Vessels*, 13 May 2004, www.bellona.no/en/international/russia/navy/northern_fleet/vessels/34070.html. On employment, see www.globalsecurity.org/military/library/report/2005/d20050719china.pdf. The U.S. Defense Department, in its 2005 *Annual Report to the Congress: The Military Power of the People's Republic of China*, states on page 33: "China is developing capabilities to achieve local sea denial, including . . . developing the Type-093 nuclear attack submarine for missions requiring greater at-sea endurance."
24. "Yuan Class Diesel-Electric Submarine," *Chinese Defence Today*, available at www.sinodefence.com/navy/sub/yuan.asp. For the Song class, "Type 039 Song Class Diesel-Electric Submarine," *ibid.*, www.sinodefence.com/navy/sub/039.asp.
25. Jing-Dong Yuan, "Chinese Responses to U.S. Missile Defenses: Implications for Arms Control and Regional Security," *Nonproliferation Review* (Spring 2003), available at cns.miis.edu/pubs/npr/vol10/101/101yuan.pdf, p. 89.
26. This is an estimate based on the author's acquaintance over fifteen years with the PLAN submarine force and discussions in recent years with others who have extensive experience concerning that force.
27. With respect to Taiwan's ASW capability and potential, the author drew on numerous exchanges with ROC naval officers and think-tankers over many years, including numerous visits to Taiwan. For judgments on other aspects of the ASW environment, the author relied on his three decades of ASW experience flying P-2 and P-3 aircraft, the major portion of which was gained with the U.S. Seventh Fleet in western Pacific waters.
28. Benedict, "The Unraveling and Revitalization of U.S. Navy Antisubmarine Warfare," p. 97 fig. 2, where the ASW situation for 2003 is described as, "Few new ASW sensor & weapon capabilities fielded to counter diesel subs in littorals." Also, on pp. 99–100, the U.S. Navy vice admiral commanding Atlantic submarine and ASW forces is quoted as saying, "Our ASW capabilities can best be described as poor or weak," and the Pacific Fleet commander as warning, "We will need greater ASW capability than we have today. . . . [F]uture technologies are essential to counter the growing submarine threat."
29. For the Su-30, Charles R. Smith, "New Chinese Jets Superior, Eagle Loses to Flanker," *NewsMax.com*, 26 May 2004, at www.newsmax.com/archives/articles/2004/5/26/154053.shtml. This article illustrates that open sources were reporting this PLA naval air force acquisition and its antiship role soon after its purchase from Russia was consummated: "China is about to receive 24 advanced Sukhoi Su-30MK2 Flanker fighters from Russia. . . . The new Chinese fighters are reportedly equipped with enhanced anti-ship

strike capabilities including the Kh-31 Krypton supersonic anti-ship missile. . . . The PLA Naval Air Corps will deploy the latest batch of Su-30MK2 fighters.” For the B-6, Robert S. Norris and Hans M. Kristensen, “Chinese Nuclear Forces, 2003,” *2003 Bulletin of the Atomic Scientists* 59, no. 6 (November/December 2003), pp. 77–80, available at www.thebulletin.org/article_nn.php?art_ofn=nd03norris. Using the Chinese designation for B-6—that is, H-6—this article states: “Although increasingly obsolete as a modern strike bomber, the H-6 may gain new life as a platform for China’s emerging cruise missile capability. The naval air force has used the H-6 to carry the C-601/Kraken anti-ship cruise missile for more than 10 years, and *Flight International* reported in 2000 that up to 25 H-6s would be modified to carry four new YJ-63 land-attack cruise missiles.” For the FB-7, see “JH-7 [Jianhong Fighter-Bomber] [FB-7]/FBC-1,” Globalsecurity.org, 27 April 2005, www.globalsecurity.org/military/world/china/jh-7.htm: “China reportedly is developing an improved version of the FB-7. The twin-engine FB-7 is an all-weather, supersonic, medium-range fighter-bomber with an anti-ship mission. Improvements to the FB-7 likely will include a better radar, night attack avionics, and weapons.” For ASCMs, see Nuclear Threat Initiative (NTI), *China’s Cruise Missile Designations and Characteristics*, 26 March 2003, www.nti.org/db/china/mimport.htm. This material is produced independently for NTI by the Center for Nonproliferation Studies at the Monterey Institute of International Studies.

30. “Naval Forces,” *Strategy Page*, 20 March 2005, www.strategypage.com/htmw/htsurf/articles/20050320.aspx. This source states: “The primary weapon of the *Sovremenny* is the SS-N-22 Sunburn, a high-speed sea-skimming missile with a huge 660-pound warhead. The Sunburn is probably the best anti-ship missile in the world.” This article is cited primarily to illustrate the widespread reputation of the Sunburn missile as extremely lethal and evasive.
31. “Type 052c (*Lanzhou* Class) Air Defence Missile Destroyer,” *Chinese Defence Today*, 27 August 2005, available at www.sinodefence.com/navy/surface/052c.asp: “Jiangnan Shipyard started to build two Type 052C destroyers . . . with more advanced weapon systems and sensors specifically for fleet air defence role. . . . The most notable feature is the four-array multifunction phased array radar (PAR) similar to the U.S. AN/SPY-1 Aegis system. Additionally, the destroyers are also fitted with the vertical launch system (VLS) for the indigenous HQ-9 long-range air defence missile system.”
32. The U.S.-China Economic and Security Review Commission annual report for 2005, chap. 3, sec. 1, based on testimony of expert witnesses, available at www.uscc.gov/annual_report/2005/chapter3_sec1.pdf, states: “The PLA Navy (PLAN) is engaged in an unprecedented level of construction and acquisition of major surface combatant ships. It currently is deploying seven new major ship classes at one time, building up to two new ships in each class per year. These include the Project 956 *Sovremenny*-class guided-missile destroyer (DDG); the Type 52B DDG; the Type 52C, Aegis-like DDG; the Type 54 guided-missile frigate.”
33. U.S. Defense Dept., *FY04 Report to Congress on PRC Military Power*, states on pp. 43–44: “Acquisition of modern ISR systems remains a critical aspect of Beijing’s military modernization. China is developing its ISR capabilities based on domestic components, supplemented by foreign technology acquisition and procurement of complete foreign systems. PLA procurement of new space systems, AEW [air early warning] aircraft, long-range UAVs [unmanned aerial vehicles], and over-the-horizon radar will enhance its ability to detect, monitor, and target naval activity in the western Pacific Ocean. It appears, from writings on PLA exercises, that this system currently lacks integration and that a fused, efficient ISR capability will not be achieved for many years.” See also Richard A. Bitzinger, “Come the Revolution: Transforming the Asia-Pacific’s Militaries,” *Naval War College Review* 58, no. 4 (Autumn 2005), pp. 42–43, 46.
34. For the saga of China and aircraft carrier acquisition, see Ian Storey and You Ji, “China’s Aircraft Carrier Ambitions: Seeking Truth from Rumors,” *Naval War College Review* 57, no. 1 (Winter 2004).