China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress

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Summary

The question of how the United States should respond to China's military modernization effort, including its naval modernization effort, has emerged as a key issue in U.S. defense planning. Admiral Michael Mullen, the Chairman of the Joints Chiefs of Staff, stated in June 2010 that "I have moved from being curious to being genuinely concerned" about China's military programs. The question of how the United States should respond to China's military modernization effort is of particular importance to the U.S. Navy, because many U.S. military programs for countering improved Chinese military forces would fall within the Navy's budget.

Decisions that Congress and the executive branch make regarding U.S. Navy programs for countering improved Chinese maritime military capabilities could affect the likelihood or possible outcome of a potential U.S.-Chinese military conflict in the Pacific over Taiwan or some other issue. Some observers consider such a conflict to be very unlikely, in part because of significant U.S.-Chinese economic linkages and the tremendous damage that such a conflict could cause on both sides. In the absence of such a conflict, however, the U.S.-Chinese military balance in the Pacific could nevertheless influence day-to-day choices made by other Pacific countries, including choices on whether to align their policies more closely with China or the United States. In this sense, decisions that Congress and the executive branch make regarding U.S. Navy programs for countering improved Chinese maritime military forces could influence the political evolution of the Pacific, which in turn could affect the ability of the United States to pursue goals relating to various policy issues, both in the Pacific and elsewhere.

China's naval modernization effort, which began in the 1990s, encompasses a broad array of weapon acquisition programs, including anti-ship ballistic missiles (ASBMs), submarines, and surface ships. China's naval modernization effort also includes reforms and improvements in maintenance and logistics, naval doctrine, personnel quality, education, training, and exercises.

DOD and other observers believe that the near-term focus of China's military modernization effort has been to develop military options for addressing the situation with Taiwan. Consistent with this goal, observers believe that China wants its military to be capable of acting as a so-called anti-access force—a force that can deter U.S. intervention in a conflict involving Taiwan, or failing that, delay the arrival or reduce the effectiveness of intervening U.S. naval and air forces. Some observers believe that China's military modernization effort, including its naval modernization effort, is increasingly oriented toward pursuing additional goals, such as asserting or defending China's claims in maritime territorial disputes, protecting China's sea lines of communications, displacing U.S. influence in the Pacific, and asserting China's status as a major world power.

Placing an increased emphasis on U.S. Navy programs for countering improved Chinese maritime military capabilities in coming years could lead to one more of the following: developing and procuring highly capable ships, aircraft, and weapons for defeating Chinese anti-access systems; assigning a larger percentage of the Navy to the Pacific Fleet (and, as a result, a smaller percentage to the Atlantic Fleet); homeporting more of the Pacific Fleet's ships at forward locations such as Hawaii, Guam, and Japan; increasing training and exercises in operations relating to countering Chinese maritime anti-access forces, such as antisubmarine warfare (ASW) operations; and increasing activities for monitoring and understanding developments in China's navy, as well as activities for measuring and better understanding operating conditions in the Western Pacific.

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Introduction

Issue for Congress

The question of how the United States should respond to China's military modernization effort, including its naval modernization effort, has emerged as a key issue in U.S. defense planning. A June 10, 2010, press report stated that

> U.S. President Barack Obama's top military adviser said he has grown "genuinely concerned" over China's motives for building up its armed forces.
>
> Admiral Mike Mullen, chairman of the Joint Chiefs of Staff, said he was worried by China's "heavy investments" in sea and air capabilities and its rejection of military contacts with the U.S. that had resumed last year, according to the text of a speech he gave to the Asia Society Washington last night.
>
> "A gap as wide as what seems to be forming between China's stated intent and its military programs leaves me more than curious about the end result," Mullen said. "Indeed, I have moved from being curious to being genuinely concerned."[1]

The question of how the United States should respond to China's military modernization effort is of particular importance to the U.S. Navy, because many U.S. military programs for countering improved Chinese military forces would fall within the Navy's budget.

Decisions that Congress and the executive branch make regarding U.S. Navy programs for countering improved Chinese maritime military capabilities could affect the likelihood or possible outcome of a potential U.S.-Chinese military conflict in the Pacific over Taiwan or some other issue. Some observers consider such a conflict to be very unlikely, in part because of significant U.S.-Chinese economic linkages and the tremendous damage that such a conflict could cause on both sides. In the absence of such a conflict, however, the U.S.-Chinese military balance in the Pacific could nevertheless influence day-to-day choices made by other Pacific countries, including choices on whether to align their policies more closely with China or the United States. In this sense, decisions that Congress and the executive branch make regarding U.S. Navy programs for countering improved Chinese maritime military forces could influence the political evolution of the Pacific, which in turn could affect the ability of the United States to pursue goals relating to various policy issues, both in the Pacific and elsewhere.

Scope, Sources, and Terminology

This report focuses on the potential implications of China's naval modernization for future required U.S. Navy capabilities. Other CRS reports address separate issues relating to China.

[1] Viola Gienger, "U.S. Concern Over China's Military Intent Growing, Mullen Says," *Bloomberg.com*, June 10, 2010. See also Daniel Ten Kate, "U.S. Criticism Of China's Military May Overshadow Asian Security Meeting," *Bloomberg.com*, July 15, 2010; and Jon Rabiroff, "Mullen Moves From 'Curious' To 'Concerned' Over China's Military," *Stripes.com*, July 21, 2010.

This report is based on unclassified open-source information, such as the annual Department of Defense (DOD) report to Congress on China's military power,[2] an August 2009 report from the Office of Naval Intelligence (ONI),[3] and published reference sources such as *Jane's Fighting Ships*.

For convenience, this report uses the term China's naval modernization to refer to the modernization not only of China's navy, but also of Chinese military forces outside China's navy that can be used to counter U.S. naval forces operating in the Western Pacific, such as land-based anti-ship ballistic missiles (ASBMs), land-based surface-to-air missiles (SAMs), land-based air force aircraft armed with anti-ship cruise missiles (ASCMs), and land-based long-range radars for detecting and tracking ships at sea.

China's military is formally called the People's Liberation Army, or PLA. Its navy is called the PLA Navy, or PLAN (also abbreviated as PLA[N]), and its air force is called the PLA Air Force, or PLAAF. The PLA Navy includes an air component that is called the PLA Naval Air Force, or PLANAF. China refers to its ballistic missile force as the Second Artillery Force.

Background

Overview of China's Naval Modernization Effort[4]

Date of Inception

Observers date the beginning of China's naval modernization effort to various points in the 1990s.[5] Design work on some of China's newer ship classes appears to have begun in the later 1980s.[6] Some observers believe that China's naval modernization effort may have been reinforced or accelerated by a 1996 incident in which the United States deployed two aircraft carrier strike groups to waters near Taiwan in response to Chinese missile tests and naval exercises near Taiwan.

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[2] U.S. Department of Defense, *Annual Report to Congress [on] Military Power of the People's Republic of China 2009*. Washington, 2009. (Hereafter *2009 DOD CMP*. Editions for earlier years cited similarly.)

Section 1246 of the FY2010 defense authorization act (H.R. 2647/P.L. 111-84 of October 28, 2009) amended the statute requiring DOD to submit an annual report to Congress on China's military power. Among other things, Section 1246 amended the scope of the report to include "military and security developments involving" China. The 2010 edition of the DOD report consequently is referred to in this CRS report as *2010 DOD CMSD*.

[3] Office of Naval Intelligence, *The People's Liberation Army Navy, A Modern Navy with Chinese Characteristics*, Suitland (MD), Office of Naval Intelligence, August 2009. 46 pp. (Hereafter *2009 ONI Report*.)

[4] Unless otherwise indicated, shipbuilding program information in this section is taken from *Jane's Fighting Ships 2008-2009*, and previous editions Other sources of information on these shipbuilding programs may disagree regarding projected ship commissioning dates or other details, but sources present similar overall pictures regarding PLA Navy shipbuilding.

[5] China ordered its first four Russian-made Kilo-class submarines in 1993, and its four Russian-made Sovremenny-class destroyers in 1996. China laid the keel on its first Song (Type 039) class submarine in 1991, its first Luhu (Type 052) class destroyer in 1990, its Luhai (Type 051B) class destroyer in 1996, and its first Jiangwei I (Type 053 H2G) class frigate in 1990.

[6] First-in-class ships whose keels were laid down in 1990 or 1991 (see previous footnote) likely reflect design work done in the latter 1980s.

Elements of Modernization Effort

China's naval modernization effort encompasses a broad array of weapon acquisition programs, including programs for anti-ship ballistic missiles (ASBMs), anti-ship cruise missiles (ASCMs), land-attack cruise missiles (LACMs), surface-to-air missiles, mines, manned aircraft, unmanned aircraft, submarines, destroyers and frigates, patrol craft, amphibious ships and craft, mine countermeasures (MCM) ships, and supporting C4ISR[7] systems. In addition, observers believe that China may soon begin (or already has begun) an indigenous aircraft carrier construction program. Some of these acquisition programs have attracted particular interest and are discussed in further detail below. China's naval modernization effort also includes reforms and improvements in maintenance and logistics, naval doctrine, personnel quality, education, and training, and exercises.[8]

Limitations and Weaknesses

Although China's naval modernization effort has substantially improved China's naval capabilities in recent years, observers believe China's navy continues to exhibit limitations or weaknesses in several areas, including capabilities for sustained operations by larger formations in distant waters, joint operations with other parts of China's military, C4ISR systems, anti-air warfare (AAW), antisubmarine warfare (ASW), MCM, and a dependence on foreign suppliers for certain key ship components.[9]

The sufficiency of Chinese naval capabilities is best assessed against its intended missions. Although China's navy has limitations and weaknesses, it may nevertheless be sufficient for performing certain missions of interest to Chinese leaders. As China's navy reduces its weaknesses and limitations, it may become sufficient to perform a wider array of potential missions.

---

[7] C4ISR stands for command and control, communications, computers, intelligence, surveillance, and reconnaissance.

[8] For a discussion of improvements in personnel, training, and exercises, see *2009 ONI Report*, pp. 31-40.

[9] DOD states that:

> As China's capabilities for local and regional operations have increased in certain areas since 2000, a number of limitations appear to have persisted. The PLA has developed new doctrine for joint warfighting and implemented organizational changes, such as including service commanders on the Central Military Commission, to facilitate the transition to a more "joint" force. However, joint integration still lags. Similarly, PLA air and amphibious lift capacity has not improved appreciably since 2000 when the Department of Defense assessed the PLA as capable of sealift of one infantry division. Likewise, China's current ability to deliver about 5,000 parachutists in a single lift (less if equipment is carried at the same time) is similar to previous assessments. China's at-sea replenishment has improved with experience since 2000, but the PLA Navy today remains limited by a small number of support vessels – much as it did then. In 2000, the Department of Defense projected aerial refueling as an operational capability by 2005. Today, while China has a few aerial refueling aircraft, it does not have the number of tankers, properly equipped combat aircraft, or sufficient training to employ this capability for power projection.
>
> *(2009 DOD CMP*, p. viii. For additional discussion of limitations, and weaknesses, see *2009 ONI Report*.)

Goals of China's Naval Modernization Effort

Capabilities for Taiwan Scenarios, Including Acting as Anti-Access Force

DOD and other observers believe that the near-term focus of China's military modernization effort, including its naval modernization effort, has been to develop military options for addressing the situation with Taiwan. Consistent with this goal, observers believe that China wants its military to be capable of acting as a so-called anti-access force—a force that can deter U.S. intervention in a conflict involving Taiwan, or failing that, delay the arrival or reduce the effectiveness of intervening U.S. naval and air forces. ASBMs, attack submarines, and supporting C4ISR systems are viewed as key elements of China's emerging anti-access force, though other force elements—such as ASCMs, LACMs (for attacking U.S. air bases and other facilities in the Western Pacific), and mines—are also of significance. China's emerging maritime anti-access force can be viewed as broadly analogous to the sea-denial force that the Soviet Union developed during the Cold War to deny U.S. use of the sea or counter U.S. forces participating in a NATO-Warsaw Pact conflict. One potential difference between the Soviet sea-denial force and China's emerging maritime anti-access force is that China's force includes ASBMs capable of hitting moving ships at sea.

Additional Goals Not Directly Related to Taiwan

Some observers believe that China's military modernization effort, including its naval modernization effort, is increasingly oriented toward pursuing additional goals not directly related to Taiwan, including the following:

- asserting or defending China's maritime territorial claims, including in particular its claim to most of the South China Sea—a longstanding Chinese claim that Chinese officials in early 2010 began describing as a "core national interest," meaning an issue comparable in importance to China's interest in Taiwan and Tibet;
- asserting or defending China's interpretation of international laws relating freedom of navigation in exclusive economic zones, or EEZs—an interpretation at odds with the interpretation held by the United States and most other countries;
- protecting China's sea lines of communications, including those to the Persian Gulf, on which China relies for some of its energy imports;
- displacing U.S. influence in the Pacific; and
- asserting China's status as a major world power.[10]

[10] The August 2009 ONI report, for example, states that a 2004 expansion in missions for China's Navy "levied new requirements on the PLA(N) to prepare for contingencies beyond the immediacy of Taiwan, such as addressing China's economic dependence on sea lines of communication." *2009 ONI Report*, p. 9.

Potential Significance of Goals Not Directly Related to Taiwan

In General

The above goals not directly related to Taiwan are potentially significant for at least four reasons:

- First, they imply that if the situation with Taiwan were somehow resolved, China could find continuing reasons to pursue its naval modernization effort.
- Second, they suggest that if China completes its planned buildup of Taiwan-related naval force elements, or if the situation with Taiwan were somehow resolved, the composition of China's naval modernization effort could shift to include a greater emphasis on naval force elements that would be appropriate for supporting additional goals not directly related to Taiwan, such as aircraft carriers, a larger number of nuclear-powered attack submarines, serial production of destroyers, larger amphibious ships, underway replenishment ships, hospital ships, and overseas bases or support facilities.
- Third, they suggest that China's maritime territorial claims (particularly its claim to the South China Sea) and its interpretation of international laws relating freedom of navigation in EEZs have the potential for acting as a continuing cause of friction or tension in U.S.-Chinese relations, and as an ongoing source of potential incidents at sea between the two countries' ships and aircraft.
- Fourth, they suggest that even if China's military were never to engage in combat with an opposing military, China's military forces, including in particular its naval forces, would still be used on a day-to-day basis to promote China's political position in the Pacific. This would create an essentially political (as opposed to combat-related) reason for the United States or other countries to maintain a competitive presence in the region with naval and other forces that are viewed by observers in the Pacific as capable of effectively countering China's forces. Even if a U.S.-Chinese military conflict in the Pacific over Taiwan or some other issue were never to occur, the U.S.-Chinese military balance in the Pacific could nevertheless influence day-to-day choices made by other Pacific countries, including choices on whether to align their policies more closely with China or the United States. In this sense, decisions that Congress and the executive branch make regarding U.S. Navy programs for countering improved Chinese maritime military forces could influence the political evolution of the Pacific, which in turn could affect the ability of the United States to pursue goals relating to various policy issues, both in the Pacific and elsewhere.

Maritime Territorial Claims and Rights When Operating in EEZs

China's interpretation of international laws relating freedom of navigation in EEZs appears to be at the crux of incidents on March 23, 2001, and March 8, 2009, in which Chinese ships confronted and harassed the U.S. naval ships *Bowditch* (TAGS-62) and *Impeccable* (TAGOS-23), respectively, as they were conducting survey and ocean surveillance operations in China's EEZ, and an incident on April 1, 2001, in which a U.S. Navy EP-3 electronic surveillance aircraft flying in international airspace about 65 miles southeast of China's Hainan Island in the South

China Sea was intercepted by Chinese fighters, collided with one of the fighters, and made an emergency landing on Hainan Island.[11]

Regarding China's interpretation of international laws relating freedom of navigation in EEZs and the *Impeccable* incident, one observer states:

> the nations of the world should be concerned that the PRC's [i.e., China's] actions in the March 8th [2009] incident reflect an effort by the PRC government to unilaterally renegotiate a widely-accepted body of international law. This is a concern for all nations, and not merely the United States or the PRC's neighbors in the South China Sea and East China Sea.[12]

Regarding China's claim to most of the South China Sea, a July 3, 2010, press report states:

> American and European experts who assembled here [in Stockholm] in early June [2010] for the semi-annual Stockholm China Forum were a bit taken aback when their Chinese colleagues defined the South China Sea as a "core national interest" of the People's Republic [of China]. The Chinese have long used this diplomatic term in discussing Tibet and Taiwan to signify issues that go to the heart of its national sovereignty.
>
> The academics were not speaking out of turn. According to *The New York Times*, Chinese leaders told visiting Obama administration officials earlier this spring that Beijing would not tolerate interference in the South China Sea, a vast expanse that is a major maritime transit area, because the entire region was a "core interest" of their nation.
>
> Since then, "the Chinese are using this term more often and more expansively," said Aaron Friedberg, a China expert at Princeton University. "And they are defining it as a red line, as a nerve you can't touch."
>
> Beijing's decision to test its neighbors and the United States now in this manner has scholars puzzled. "You would think," one American analyst living in Beijing observed, that "they would have an interest in finessing this issue for the time being" given its sensitivity to other nations bordering the sea, and other, more pressing issues on the international agenda. The fact that Chinese officials are not masking their ambitions may actually be more important than Beijing's specific objectives.
>
> The South China Sea is not just any body of water. At least a third of global maritime commerce and more than half of Northeast Asia's imported energy supplies pass through its 1.2 million square miles. U.S. forces traverse the sea between the Pacific and Indian oceans, including the naval forces that support the war in Afghanistan.

[11] For more on the April 1, 2001, aircraft collision, see CRS Report RL30946, *China-U.S. Aircraft Collision Incident of April 2001: Assessments and Policy Implications*, by Shirley A. Kan (coordinator) et al.

[12] Jonathan G. Odom, "The True 'Lies' of the Impeccable Incident: What Really Happened, Who Disregarded International law, and Why Every Nation (Outside of China) Should Be Concerned," *Michigan State Journal of International Law*, Vol. 18, No. 3 (May 2010), 42 pp. (The quoted passage appears on page 39.) See also Peter A. Dutton, "Through A Chinese Lens," *U.S. Naval Institute Proceedings*, April 2010: 24-29; James Manicom, "China's Claims to an Extended Continental Shelf in the East China Sea: Meaning and Implications," *China Brief*, July 9, 2009: 9-11; Peter Dutton and John Garofano, "China Undermines Maritime Laws," *Far Eastern Economic Review* (online), April 3, 2009 (available online at http://www.feer.com/essays/2009/april/china-undermines-maritime-laws); and Raul Pedrozo, "Close Encounters At Sea, The USNS Impeccable Incident," *Naval War College Review*, Summer 2009: 101-111. For additional discussion, see CRS Report RL31183, *China's Maritime Territorial Claims: Implications for U.S. Interests*, by Kerry Dumbaugh et al.

> The sea is bounded by Brunei, China, Malaysia, the Philippines, Taiwan, and Vietnam. All have overlapping claims in the region. Beijing has asserted that 80 percent of the area is China's "historic waters." Friedberg said that recent Chinese assertions are "a very significant extension of claims they have made in the past."[13]

Another observer states that:

> In combination, China's claims are tantamount to a claim of full sovereignty over the South China Sea. Were these [claims] to become accepted, they would impede legitimate American naval operations in support of regional friends and allies, deterrence of regional conflict, and maintenance of freedom of navigation in the South China Sea's critical sea lines of communication.[14]

Regarding the Yellow Sea—a body of water between China and the Korean Peninsula—a July 8, 2010, press report states that:

> China on Thursday [July 8, 2010] said it firmly opposed any foreign warships or planes entering the Yellow Sea as well as adjacent waters that were engaged in activities that would impact on its security and interests.
>
> Foreign Ministry spokesman Qin Gang made the remarks in response to a question on a scheduled joint naval drill between the United States and the Republic of Korea (ROK) at a regular news conference.[15]

Two observers of Asian and Pacific security issues state that

> as China has become more influential, it has also become uncharacteristically assertive in the diplomatic arena. This assertiveness is nowhere more evident than with its naval power, and is prompting many to ask if it is now verging on the reckless, particularly over the South China Sea….
>
> It's increasingly clear that Beijing may have misinterpreted a relatively passive but definitely welcoming set of international reactions to China's rise. And the combination of China's aggressive naval actions and maritime territorial claims suggests an alarming indicator: Chinese assertiveness over its region is growing as fast as China's wealth and perceived power trajectory. Beijing's unwelcome intent appears to give notice that China is opting out of the Global Commons, and that the Western Pacific is not to be accessible to all, but instead increasingly part of China's exclusive sphere of influence.
>
> Nowhere is this more apparent than in China's attitude over the South China Sea, which recently has been defined as a 'core interest'—the same phrase Chinese use to refer to Tibet, Taiwan and Xinjiang. In the process, China is in effect dismissing the international concept of the Global Commons, which refers to the maritime, air, space and cyberspace domains that comprise the circulatory system of our globalized world. Because the Global Commons hold together the international world order based on near-uncontested access, the rule of law and freedom of manoeuvre, China's challenging of these principles puts it at direct odds with the United States.

[13] Bruce Stokes, "China's New Red Line At Sea," *National Journal*, July 3, 2010.

[14] Peter A. Dutton, "Through A Chinese Lens," *U.S. Naval Institute Proceedings*, April 2010: 24-29. (The quoted passage appears on page 29.)

[15] "China Opposes Foreign Warships, Planes Entering Yellow Sea and Adjacent Waters," *Xinhua*, July 8, 2010.

> Indeed, China seems to regard the maritime global commons in a proprietary fashion. For a given area, the Chinese wish either to dominate it or for others to stay away; in effect, in the Chinese view, there's no 'commons.' China calling the South China Sea a 'core concern' is an attempt to place clear, Chinese-declared limits on the ability of the international community to assert its rights under international law.
>
> China has two types of arbitrary claims: an assertion that China's territorial seas extend into much of the South China Sea and the more recent claim that they have the right to control navigation and research activities, not just fishing and seabed resources, within their Exclusive Economic Zones. If not challenged, China's assertive incrementalism has international legal risks, since international law is built on norms.
>
> In contrast, long-standing US diplomatic and military doctrine has been explicit that navies—including China's—have every right to operate on the high seas, even including in the territorial waters of other states. In support of this doctrine, Washington has attempted to establish a strong and open dialogue with the Chinese military. China, on the other hand, sees US operations inside the first island chain as impinging on its sovereignty, just as it has a very expansive interpretation of the United Nations Convention on the Law of the Sea as to its authority within its own (and contested) Exclusive Economic Zones. China's combination of its international legal strategies with naval force is telling: unlike the other claimants to the South China Sea, China backs up its words with military force.
>
> The US Navy remains the strongest and only true blue-water naval force in the world and is the enabler and enforcer of much of the Global Commons, a system of free trade and unfettered economic and political access. As such, it appears to be the object of a different Chinese worldview, one of limited access for others and exclusive access for China. Meanwhile, the result of China's asymmetric anti-access and area-denial strategy is a growing Navy-killing array of ever more capable anti-ship missiles and other weapons. Beijing is trying to establish the precedent for limited access on its own terms and diminished freedom of navigation.[16]

In an apparent response to China's statements that its claim to the South China Sea is a core national interest, Secretary of State Hillary Clinton stated on July 23, 2010, that

> The United States, like every nation, has a national interest in freedom of navigation, open access to Asia's maritime commons, and respect for international law in the South China Sea. We share these interests not only with ASEAN [Association of Southeast Asian Nations] members or ASEAN Regional Forum participants, but with other maritime nations and the broader international community.
>
> The United States supports a collaborative diplomatic process by all claimants for resolving the various territorial disputes without coercion. We oppose the use or threat of force by any claimant. While the United States does not take sides on the competing territorial disputes over land features in the South China Sea, we believe claimants should pursue their territorial claims and accompanying rights to maritime space in accordance with the UN convention on the law of the sea. Consistent with customary international law, legitimate claims to maritime space in the South China Sea should be derived solely from legitimate claims to land features.

[16] Patrick Cronin and Paul Giarra, "China's Dangerous Arrogance," *The Diplomat*, July 23, 2010 (available online at http://the-diplomat.com/2010/07/23/china%e2%80%99s-dangerous-arrogance/).

> The U.S. supports the 2002 ASEAN-China declaration on the conduct of parties in the South China Sea. We encourage the parties to reach agreement on a full code of conduct. The U.S. is prepared to facilitate initiatives and confidence building measures consistent with the declaration. Because it is in the interest of all claimants and the broader international community for unimpeded commerce to proceed under lawful conditions. Respect for the interests of the international community and responsible efforts to address these unresolved claims and help create the conditions for resolution of the disputes and a lowering of regional tensions.[17]

In response to China's statement regarding naval exercises in the Yellow Sea, U.S. officials have stated that U.S. Navy ships have a right to exercise in international waters in the Yellow Sea, that they have done so in the past, and that future exercises will be held there. They have also noted that a U.S. Navy aircraft carrier operated there as recently as October or November 2009 without prompting criticism from China.[18]

Selected Elements of China's Naval Modernization Effort

Anti-Ship Ballistic Missiles (ASBMs)

DOD and other observers believe China is developing and testing anti-ship ballistic missiles (ASBMs), which are theater-range ballistic missiles[19] equipped with maneuverable reentry vehicles (MaRVs) capable of hitting moving ships at sea. Observers have expressed strong concern about this development, because such missiles, in combination with broad-area maritime surveillance and targeting systems, would permit China to attack aircraft carriers, other U.S. Navy ships, or ships of allied or partner navies operating in the Western Pacific. The U.S. Navy has not previously faced a threat from highly accurate ballistic missiles capable of hitting moving ships at sea. Due to their ability to change course, MaRVs would be more difficult to intercept than non-maneuvering ballistic missile reentry vehicles. DOD states that:

> China is developing an ASBM based on a variant of the CSS-5 MRBM [medium-range ballistic missile] as a part of its anti-access strategy. The missile has a range in excess of

[17] Remarks by Hillary Rodham Clinton, Secretary of State, National Convention Center, Hanoi, Vietnam, July 23, 2010, available online at http://www.state.gov/secretary/rm/2010/07/145095.htm. See also Michael Wines, "Behind Gusts Of A Military Chill: A More Forceful China," New York Times, June 9, 2010; Mark Landler, "Offering to Aid Talks, U.S. Challenges China on Disputed Islands," *New York Times*, July 23, 2010; Daniel Ten Kate and Nicole Gaouette, "U.S. Says Settling South China Sea Disputes 'Leading Diplomatic Priority," *Bloomberg.com*, July 23, 2010; Andrew Jacobs, "China Warns U.S. To Stay Out Of Islands Dispute," New York Times, July 27, 2010; ; John Pomfret, "U.S. Takes Tougher Stance With China," *Washington Post*, July 30, 2010: 1; John Pomfret, "China Renews Claim To South China Sea, Vows Freedom Of Passage," *Washington Post*, July 31, 2010: 7.

[18] See, for example, John Pomfret, "U.S., South Korea Set To Announce Military Exercises," *Washington Post*, July 15, 2010: 15; Brian Spegele , "U.S., China Avoid Tiff Over Plans For Naval Exercises Off Korean Coast," *Wall Street Journal*, July 16, 2010: 12; Elisabeth Bumiller, "Major Ship In U.S. Fleet Will Visit South Korea," *New York Times*, July 20, 2010; Elisabeth Bumiller and Edward Wong, "China Warily Eyes U.S.-Korea Drills," *New York Times*, July 21, 2010; Sig Christenson, "Gates Orders Naval Maneuvers As 'Clear Message' To N. Korea," *San Antonio Express-News*, July 21, 2010; Bill Gertz, "Inside the Ring," *Washington Times*, July 22, 2010: 7; Jon Rabiroff, "Mullen Moves From 'Curious' To 'Concerned' Over China's Military," *Stripes.com*, July 21, 2010; Evan Ramstad, "U.S., South Korea Navies Drill," *Wall Street Journal*, July 27, 2010: 27; John Pomfret, "U.S. Takes Tougher Stance With China," *Washington Post*, July 30, 2010: 1; William Cole, "Sub Training Ends RIMPAC," *Honolulu Star-Advertiser*, July 31, 2010.

[19] Depending on their ranges, these theater-range ballistic missiles can be divided into short-, medium-, and intermediate-range ballistic missiles (SRBMs, MRBMs, and IRBMs, respectively).

> 1,500 km, is armed with a maneuverable warhead, and when incorporated into a sophisticated command and control system, is intended to provide the PLA the capability to attack ships at sea, including aircraft carriers in the western Pacific Ocean.[20]

The August 2009 ONI report states:

> The PRC [People's Republic of China] has been conducting advanced research into an anti-ship ballistic missile (ASBM) program since the 1990s. This ASBM may be a variant of the DF-21 Medium Range Ballistic Missile (MRBM), with the capability to perform a mid-course ballistic correction maneuver to update the target's location, and then guide a Maneuvering Reentry Vehicle (MaRV) to the target. As ASBM's long range, high-reentry speed (Mach 10-12), radical maneuvers, and munitions designed to attach aircraft carrier sub-systems combine to create a complex threat.[21]

On March 23, 2010, Admiral Robert Willard, the Commander of U.S. Pacific Command, testified that China is "developing and testing a conventional anti-ship ballistic missile based on the DF-21/CSS-5 MRBM designed specifically to target aircraft carriers."[22] Some observers believe this to be the first time that a DOD official stated publicly that China's ASBM was not only in development, but that is has reached the testing stage.[23]

An August 5, 2010, news report stated:

> Analysts say final testing of the missile could come as soon as the end of this year, though questions remain about how fast China will be able to perfect its accuracy to the level needed to threaten a moving carrier at sea….
>
> Questions remain over when—and if—China will perfect the technology; hitting a moving carrier is no mean feat, requiring state-of-the-art guidance systems, and some experts believe it will take China a decade or so to field a reliable threat. Others, however, say final tests of the missile could come in the next year or two.[24]

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[20] *2009 DOD CMP*, p. 48. See also p. 21. See also *2009 ONI Report*, pp. 26-27. For further discussion of China's ASBM-development effort and its potential implications for U.S. naval forces, see Craig Hooper and Christopher Albon, "Get Off the Fainting Couch," *U.S. Naval Institute Proceedings*, April 2010: 42-47; Andrew S. Erickson, "Ballistic Trajectory – China Develops New Anti-Ship Missile," *Jane's Intelligence Review*, January 4, 2010; Michael S. Chase, Andrew S. Erickson and Christopher Yeaw, "Chinese Theater and Strategic Missile Force Modernization and its Implications for the United States," The Journal of Strategic Studies, February 2009: 67-114; Andrew S. Erickson and David D. Yang, "On the Verge of a Game-Changer," *U.S. Naval Institute Proceedings*, May 2009: 26-32; Andrew Erickson, "Facing A New Missile Threat From China, How The U.S. Should Respond To China's Development Of Anti-Ship Ballistic Missile Systems," *CBSNews.com*, May 28, 2009; Andrew S. Erickson, "Chinese ASBM Development: Knowns and Unknowns," *China Brief*, June 24, 2009: 4-8; Andrew S. Erickson and David D. Yang, "Using the Land to Control the Sea? Chinese Analysts Consider the Antiship Ballistic Missile," *Naval War College Review*, Autumn 2009: 53-86; Eric Hagt and Matthew Durnin, "China's Antiship Ballistic Missile, Developments and Missing Links," *Naval War College Review*, Autumn 2009: 87-115; Mark Stokes, "China's Evolving Conventional Strategic Strike Capability, *The Anti-ship Ballistic Missile Challenge to U.S. Maritime Operations in the Western Pacific and Beyond*, Project 2049 Institute, September 14, 2009. 123 pp.

[21] *2009 ONI Report*, p. 26.

[22] Statement of Admiral Robert F. Willard, U.S. Navy, Commander, U.S. Pacific Command, Before the House Armed Services Committee on U.S. Pacific Command Posture, March 23, 2010, p. 14.

[23] See, for example, Wendell Minnick, "Chinese Anti-Ship Missile Could Alter U.S. Power," *Defense News*, April 5, 2010: 6; and Greg Torode, "Beijing Testing 'Carrier Killer,' U.S. Warns, *South China Morning Post*, April 3, 2010.

[24] Eric Talmadge, "AP Enterprise: Chinese 'Carrier-Killer' Missile Raises Concerns of Pacific Power Shift," Canadian Press, August 5, 2010.

A November 17, 2009, news report stated:

> China's military is close to fielding the world's first anti-ship ballistic missile, according to U.S. Navy intelligence.
>
> The missile, with a range of almost 900 miles, would be fired from mobile, land-based launchers and is "specifically designed to defeat U.S. carrier strike groups," the Office of Naval Intelligence reported [in its August 2009 report on China's navy]....
>
> Scott Bray, who wrote the ONI report on China's Navy, said China has made "remarkable progress" on the missile. "In little over a decade, China has taken the program from the conceptual phase" to "near fielding a combat-ready missile," he said....
>
> China has ground-tested the missile three times since 2006 and conducted no flight tests yet, Navy officials said....
>
> Bray said China has the initial elements of its new over-the-horizon radar that can provide the general location of U.S. vessels before launching the new missile....
>
> The radar is supplemented by reconnaissance satellites, another Navy official said, requesting anonymity. There are 33 in orbit and that number may grow to 65 by 2014, 11 of which would be capable of conducting ocean surveillance, he said.[25]

Anti-Ship Cruise Missiles (ASCMs)

Among the most capable of the new ASCMs that have been acquired by China's navy are the Russian-made SS-N-22 Sunburn (carried by China's four Russian-made Sovremenny-class destroyers) and the SS-N-27 Sizzler (carried by 8 of China's 12 Russian-made Kilo-class submarines). China's large inventory of ASCMs also includes several indigenous designs.

Submarines

Types Acquired in Recent Years

China's submarine modernization effort, which is producing a significantly more modern and capable submarine force, has attracted substantial attention and concern. The August 2009 ONI report states that "since the mid-1990s, the PRC has emphasized the submarine force as one of the primary thrusts of its military modernization effort."[26]

China by the end of 2006 completed taking delivery on eight Russian-made Kilo-class non-nuclear-powered attack submarines (SSs) that are in addition to four Kilos that China purchased from Russia in the 1990s. China also has recently built or is building four other classes of submarines, including the following:

- a new nuclear-powered ballistic missile submarine (SSBN) design called the Jin class or Type 094;

[25] Tony Capaccio, "China's New Missile May Create A 'No-Go Zone' For U.S. Fleet," *Blooomberg.com*, November 17, 2009.

[26] *2009 ONI Report*, p. 20.

- a new nuclear powered attack submarine (SSN) design called the Shang class or Type 093;[27]
- a new SS design called the Yuan class or Type 041 (or Type 039A);[28] and
- another (and also fairly new) SS design called the Song class or Type 039/039G.

Along with the Kilo-class boats, these four classes of indigenous submarines are regarded as much more modern and capable than China's aging older-generation submarines.[29] At least some of these new submarine designs are believed to have benefitted from Russian submarine technology and design know-how.[30]

The August 2009 ONI report includes a graph that shows a new Type 095 SSN, along with the date 2015, which might be the year that ONI projects that this submarine will enter service. The graph shows that this submarine is projected be quieter than the Shang-class SSN, and also quieter than the Russian Victor III-class SSN, which entered service in the late 1970s, but not as quiet as the Russian Akula I-class SSN, which entered service in the late 1980s.

China's submarines are armed with one or more of the following: ASCMs, wire-guided and wake-homing torpedoes, and mines. China's eight recently delivered Kilos are reportedly armed with the highly capable SS-N-27 Sizzler ASCM. In addition to other weapons, Shang-class SSNs may carry LACMs. Although ASCMs are often highlighted as sources of concern, wake-homing torpedoes are also a concern because they can be very difficult for surface ships to counter.

Although China's aging Ming-class (Type 035) submarines are based on old technology and are much less capable than China's newer-design submarines, China may decide that these older boats have continued value as minelayers or as bait or decoy submarines that can be used to draw out enemy submarines (such as U.S. SSNs) that can then be attacked by other Chinese naval forces.

In related areas of activity, China reportedly is developing new unmanned underwater vehicles,[31] and has modernized its substantial inventory of mines.[32]

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[27] Some sources state that a successor to the Shang class SSN design, called the Type 095 SSN design, is in development.

[28] Some observers believe the Yuan class to be a variant of the Song class and refer to the Yuan class as the Type 039A. The August 2009 ONI report states that the Yuan class may be equipped with an air-independent propulsion (AIP) system. (*2009 ONI Report*, p. 23.)

[29] A graph in the August 2009 ONI report shows that the Jin-class SSBN is quieter than China's earlier Xia-class SSBN, but less quiet than Russia's Delta III-class SSBN, and that the Shang-class SSN is quieter than China's earlier Han-class SSN, but less quiet than Russia's Victor III-class SSN. The graph shows that the Song-class SS is quieter than the less capable 877 version of the Kilo class, but not as quiet as the more capable 636 version of the Kilo class. (Two of China's 12 Kilos are 877 models, the other 10 are 636s.) The graph shows that the Yuan class is quieter than the Song class, but still not as quiet as the 636 version of the Kilo class. (*2009 ONI Report*, p. 22.)

[30] The August 2009 ONI report states that the Yuan class may incorporate quieting technology from the Kilo class, and that it may be equipped with an air-independent propulsion (AIP) system. (*2009 ONI Report*, p. 23.)

[31] Lyle Goldstein and Shannon Knight, "Coming Without Shadows, Leaving Without Footprints," *U.S. Naval Institute Proceedings*, April 2010: 30-35.

[32] See, for example, *2009 ONI report*, p. 29.

Submarine Acquisition Rate and Potential Submarine Force Size

Table 1 shows actual and projected commissionings of Chinese submarines by class since 1995, when China took delivery of its first two Kilo-class boats. The table includes the final nine boats in the Ming class, which is an older and less capable submarine design. As shown in **Table 1**, China was projected to have a total of 30 relatively modern attack submarines—meaning Shang, Kilo, Yuan, and Song class boats—in commission by the end of 2010. As shown in the table, much of the growth in this figure occurred in 2004-2006, when 18 boats (including 8 Kilos) were added.

The figures in **Table 1** show that between 1995 and 2010, China placed into service a total of 40 submarines of all kinds, or an average of about 2.5 submarines per year. This average commissioning rate, if sustained indefinitely, would eventually result in a steady-state submarine force of 50 to 75 boats of all kinds, assuming an average submarine life of 20 to 30 years.

Excluding the 12 Kilos purchased from Russia, the total number of domestically produced submarines placed into service between 1995 and 2007 is 28, or an average of 1.75 per year. This average rate of domestic production, if sustained indefinitely, would eventually result in a steady-state force of domestically produced submarines of 35 to 53 boats of all kinds, again assuming an average submarine life of 20 to 30 years.

As shown in **Table 1**, only four of the submarines placed into service between 1995 and 2010 are nuclear powered. If the mix of China's submarine-production effort shifts at some point to include a greater proportion of nuclear-powered boats, it is possible that the greater resources required to produce nuclear-powered boats might result in a reduction in the overall submarine production rate. If so, and if such a reduced overall rate were sustained indefinitely, it would eventually result in a smaller steady-state submarine force of all kinds than the figures calculated in the preceding two paragraphs.

The August 2009 ONI report states:

> As PLA(N) strategy and capabilities have changed, Chinese submarine procurement has focused on smaller numbers of modern, high-capability boats. In keeping with the overarching PLA(N) strategy of the time, the 1980s submarine force featured a relatively high number of low-technology platforms. Now there are fewer submarines in the PLA(N) inventory than there were at any point in the 1980s. Currently, the submarine force consists of six nuclear[-powered] attack submarines [SSNs], three nuclear[-powered] ballistic missile submarines [SSBNs], and 53 diesel[-electric] attack submarines [SSs]. Over the next 10 to 15 years, primarily due to the introduction of new diesel-electric and [non-nuclear-powered] air independent power (AIP) submarines, the force is expected to increase incrementally in size to approximately 75 submarines.[33]

[33] *2009 ONI Report*, p. 21. The report states on page 46 that "Because approximately three-quarters of the current submarine force will still be operational in 10-15 years, new submarine construction is expected to add approximately 10 platforms to the force." See also the graph on page 45, which shows the submarine force leveling off in size around 2015.

Table 1. PLA Navy Submarine Commissionings

Actual (1995-2010) and Projected (2011-2014)

	Jin (Type 094) SSBN	Shang (Type 093) SSN	Kilo SS (Russian-made)	Yuan (Type 041) SS[a]	Song (Type 039) SS	Ming (Type 035) SS[b]	Annual total	Cumulative total for all types shown	Cumulative total for modern attack boats[c]
1995			2[d]			1	**3**	**3**	**2**
1996						1	**1**	**4**	**2**
1997						2	**2**	**6**	**2**
1998			1[d]			2	**3**	**9**	**3**
1999			1[d]		1		**2**	**11**	**5**
2000						1	**1**	**12**	**5**
2001					2	1	**3**	**15**	**7**
2002						1	**1**	**16**	**7**
2003					2		**2**	**18**	**9**
2004			1		3		**4**	**22**	**13**
2005			4		3		**7**	**29**	**20**
2006		1	3	1	2[e]		**7**	**36**	**27**
2007	1	1					**2**	**38**	**28**
2008							**0**	**38**	**28**
2009	1			1			**2**	**40**	**29**
2010				1			**1**	**41**	**30**
2011	1	n/a[f]		1			**n/a**	**n/a**	**n/a**
2012		n/a[f]		n/a			**n/a**	**n/a**	**n/a**
2013	1	n/a[f]		n/a			**n/a**	**n/a**	**n/a**
2014	1[g]	n/a[f]		n/a			**n/a**	**n/a**	**n/a**

Source: *Jane's Fighting Ships 2009-2010*, and previous editions.

Note: n/a = data not available.

a. Some observers believe the Yuan class to be a variant of the Song class and refer to the Yuan class as the Type 039A.

b. Figures for Ming-class boats are when the boats were launched (i.e., put into the water for final construction). Actual commissioning dates for these boats may have been later.

c. This total excludes the Jin-class SSBNs and the Ming-class SSs.

d. First four boats, commissioned in the 1990s, are to be refitted in Russia; upgrades are likely to include installation of SS-N-27 ASCM.

e. No further units expected after the 12th and 13th shown for 2006.

f. *Jane's Fighting Ships 2009-2010* states that production of the two Type 093 boats shown in the table may be followed by production of a modified evolutionary SSN design possibly known as the Type 095 class. A graph on page 22 of *2009 ONI Report* suggests that ONI expects the first Type 095 to enter service in 2015.

g. A total of five or six boats is expected. (DOD stated in 2008 that up to five might be built. [*2008 DOD CMP*, p. 25])

JL-2 SLBM on Jin-Class SSBN

Each Jin-class SSBN is expected to be armed with 12 JL-2 nuclear-armed submarine-launched ballistic missiles (SLBMs).[34] DOD estimates that these missiles will enter service in 2009 or 2010,[35] and that they will have a range of 7,200 kilometers (about 3,888 nautical miles).[36] Such a range could permit Jin-class SSBNs to attack

- targets in Alaska (except the Alaskan panhandle) from protected bastions close to China;[37]
- targets in Hawaii (as well as targets in Alaska, except the Alaskan panhandle) from locations south of Japan;
- targets in the western half of the 48 contiguous states (as well as Hawaii and Alaska) from mid-ocean locations west of Hawaii; and
- targets in all 50 states from mid-ocean locations east of Hawaii.

Aircraft Carriers

Observers believe that China will complete the ex-Ukrainian carrier *Varyag*, which China purchased as an unfinished ship in 1998, and place it into service in the near future, probably as an aviation training ship (although the ship might also be used for operational missions). Observers also believe China will soon begin building its first indigenous aircraft carrier (or has begun to do so already), and that China may build a total of one to six indigenous carriers in coming years. Chinese officials have begun to talk openly about the possibility of China operating aircraft carriers in the future.[38] China reportedly has begun training its first 50 fixed-wing carrier aviators, has been in negotiations with Russia to purchase up to 50 Russian-made carrier-capable Su-33 fighter aircraft, and may be developing indigenous carrier-capable fighters. DOD states that:

> China has an active aircraft carrier R&D [research and development] program. The PRC shipbuilding industry could start construction of an indigenous platform by the end of this decade. China may be interested in building multiple operational aircraft carriers with support ships in the next decade.

[34] *2009 DOD CMP*, p. 24.

[35] *2009 DOD CMP*, pp. 24 and 48.

[36] *2009 DOD CMP*, p. 25 (Figure 6), 48, and 66 (Figure 22).

[37] A map published by DOD (*2009 DOD CMP*, p. 25 [Figure 6]) shows a range ellipse for the JL-2 which, upon inspection, appears to show the missile as having a range of no more than about 6,600 kilometers, rather than the 7,200 kilometers indicated in the legend to the map and elsewhere in the DOD report. In addition, the JL-2 range ellipse appears centered on a launching point that is more or less west of Shanghai and perhaps 200 statute miles inland from the sea. This combination of apparent range and launching point appears to be why the map shows the JL-2 as having sufficient range to attack only the western half of the Aleutian island chain and perhaps the western coast of mainland Alaska (the section of Alaska's coast that is directly opposite the Russian coast). A similar map appeared in the *2008 DOD CMP*. A missile with a range of 7,200 kilometers that is launched from an ocean location close to China's eastern coast would have sufficient range to attack all of Alaska except the Alaskan panhandle. The August 2009 ONI report states that the JL-2 will have a range of about 4,000 nautical miles and that it "is capable of reaching the continental United States from Chinese littorals." (*2009 ONI Report*, p. 23.)

[38] The August 2009 ONI report states that "Beginning in early 2006, PRC-owned media has reported statements from high-level officials on China's intent to build aircraft carriers."

> The PLA Navy has reportedly decided to initiate a program to train 50 pilots to operate fixed-wing aircraft from an aircraft carrier. The initial program, presumably land-based, would be followed in about four years by ship-borne training involving the ex-VARYAG, which was purchased by a Chinese company from Ukraine in 1998.[39]

The August 2009 ONI report states that "China is undertaking a program to both operationalize [the Varyag] (likely as a training platform) and build an indigenous carrier to join the fleet between 2015 and 2020."[40]

Observers have speculated on the potential size and capabilities of new-construction Chinese aircraft carriers. Given the technical challenges involved in building and operating carriers, China might elect to begin by building conventionally powered carriers and then possibly progress to construction of nuclear-powered carriers. Some observers have speculated that China's first new-construction aircraft carriers might displace between 60,000 and 70,000 tons. (The *Varyag* has an estimated full load displacement of about 58,500 tons.) A new-construction Chinese carrier with a displacement of 60,000 to 70,000 tons might be able to operate an air wing of 30 or more aircraft, including vertical/short takeoff or landing (VSTOL) airplanes and possibly conventional takeoff and landing (CTOL) airplanes.[41]

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[39] *2009 DOD CMP*, pp. 48-49. In another part of the report (page 40), DOD states:

> China has an aircraft carrier research and design program, which includes continued renovations to the former Soviet Kuznetsov-class aircraft carrier VARYAG. Beginning in early 2006 with the release of China's Eleventh Five Year Plan, PRC-owned media reported high-level government and military official statements on China's intent to build aircraft carriers. In December 2008, China's Ministry of National Defense spokesman Senior Colonel Huang Xueping said "China has vast oceans and it is the sovereign responsibility of China's armed forces to ensure the country's maritime security and uphold the sovereignty of its coastal waters as well as its maritime rights and interests," and added that China is "seriously considering" adding an aircraft carrier to its fleet, because "the aircraft carrier is a symbol of a country's overall national strength, as well as the competitiveness of the country's naval force." This was preceded by a November 2008 statement by the Director of the Ministry of National Defense, Foreign Affairs Office, Major General Qian Lihua, that "having an aircraft carrier is the dream of any great military power," and "the question is not whether you have an aircraft carrier, but what you do with your aircraft carrier."
>
> China continues to show interest in procuring Su-33 carrier-borne fighters from Russia even though the ex-VARYAG aircraft carrier has yet to complete refurbishment at Dalian shipyard. In October 2006, a Russian press report suggested early-stage negotiations were underway for China to purchase up to 50 such aircraft at a cost of $2.5 billion. However, there has been no announcement of a contract for the aircraft.
>
> The PLA Navy has reportedly decided to initiate a program to train 50 navy pilots to operate fixed-wing aircraft from an aircraft carrier. The program was reported to be four years long and would be followed by ship-borne training involving the ex-VARYAG. Analysts in and out of government project that China will not have an operational, domestically-produced carrier and associated ships before 2015. However, changes in China's shipbuilding capability and degree of foreign assistance to the program could alter those projections. The PLA Navy is considering building multiple carriers by 2020.

[40] *2009 ONI Report*, p. 17. The report similarly states on page 1 that China "is refurbishing [the Varyag] and plans to build its own [aircraft carrier] within the next five to ten years," and on page 19 that "the PRC will likely have an operational, domestically produced carrier sometime after 2015." The report states on page 19 that the Varyag "is expected to become operational in the 2010 to 2012 timeframe, and will likely be used to develop basic proficiencies in carrier operations."

[41] For comparison, the U.S. Navy's Midway (CV-41), Forrestal (CV-59), and Kitty Hawk (CV-63) class conventionally powered carriers, none of which is still in service, had displacements of 69,000 to 85,000 tons, and could operate air wings of 70 or more aircraft, most of which were CTOL airplanes. The Navy's current Nimitz (CVN-68) class nuclear-powered aircraft carriers displace about 100,000 tons and operate air wings or 70 or more aircraft, most of which are (continued...)

Although aircraft carriers might have some value for China in Taiwan-related conflict scenarios, they are not considered critical for Chinese operations in such scenarios, because Taiwan is within range of land-based Chinese aircraft. Consequently, most observers believe that China would build and operate carriers primarily because of their value in other kinds of operations that are more distant from China's shores. Chinese aircraft carriers could be used for power-projection operations, particularly in scenarios that do not involve opposing U.S. forces. Chinese aircraft carriers could also be used for humanitarian assistance and disaster relief (HA/DR) operations, maritime security operations (such as anti-piracy operations), and non-combatant evacuation operations (NEOs). Politically, aircraft carriers could be particularly valuable to China for projecting an image of China as a major world power, because aircraft carriers are viewed by many as symbols of major world power status. In a combat situation involving opposing U.S. naval and air forces, Chinese aircraft carriers would be highly vulnerable to attack by U.S. ships and aircraft, but conducting such attacks could divert U.S. ships and aircraft from performing other missions in a conflict situation with China.

Surface Combatants

China since the early 1990s has purchased four Sovremenny-class destroyers from Russia and deployed nine new classes of indigenously built destroyers and frigates (some of which are variations of one another) that demonstrate a significant modernization of PLA Navy surface combatant technology. China has also deployed a new kind of missile-armed fast attack craft that uses a stealthy catamaran hull design. The August 2009 ONI report states that "the PLA(N) surface force is one of the largest in the world, and its capabilities are growing at a remarkable rate."[42]

Sovremenny-Class Destroyers

China in 1996 ordered two Sovremenny-class destroyers from Russia; the ships entered service in 1999 and 2001. China in 2002 ordered two additional Sovremenny-class destroyers from Russia; the ships entered service in 2005 and 2006. Sovremenny-class destroyers are equipped with the SS-N-22 Sunburn ASCM, a highly capable ASCM. DOD stated in 2007 that the two ships delivered in 2005-2006 "are fitted with anti-ship cruise missiles (ASCMs) and wide-area air defense systems that feature qualitative improvements over the [two] earlier SOVREMENNYY-class DDGs China purchased from Russia."[43] In light of these improvements, DOD refers to these two ships as Sovremenny II class destroyers.[44]

(...continued)

CTOL airplanes. Additional points of comparison include the French aircraft carrier *Charles de Gaulle* (commissioned in 2001), which has a displacement of about 42,000 tons, and aircraft carriers that the United Kingdom and France plan to commission into service between 2014 and 2016, which are to have displacements of 65,000 to 70,000 tons. The *Charles de Gaulle* can operate an air wing of about 36 aircraft, and the future UK and French carriers are to operate air wings of about 40 to 45 aircraft.

[42] *2009 ONI Report*, p. 16. This comment may relate not solely to China's surface combatants (e.g., destroyers, frigates, and fast attack craft), but to China's entire surface fleet, which includes other types of ships as well, such as aircraft carriers, amphibious ships, and auxiliary and support ships.

[43] *2007 DOD CMP*, p. 3. The DOD report spells Sovremenny with two "y"s at the end.

[44] *2008 DOD CMP*, p. 2.

Five New Indigenously Built Destroyer Classes

China since the early 1990s has built five new classes of destroyers, one of which is a variation of another. Compared to China's 14 remaining older Luda (Type 051) class destroyers, which entered service between 1971 and 1991, these five new destroyer classes are substantially more modern in terms of their hull designs, propulsion systems, sensors, weapons, and electronics. One author states that "the new Chinese missile destroyers were apparently designed, at least on the basic level, at the Russian Northern Design Bureau."[45] A key area of improvement in the new destroyer designs is their anti-air warfare (AAW) technology, which has been a significant PLA Navy shortcoming.[46] Like the older Luda-class destroyers, these new destroyer classes are armed with ASCMs. **Table 2** summarizes the five new classes.

Table 2. New PLA Navy Destroyer Classes

Class name	Type	Number built	Hull number(s)	In service (actual or projected)
Luhu	052	2	112, 113	1994, 1996
Luhai	051B	1	167	1999
Luyang I	052B	2	168, 169	2004
Luyang II	052C	2	170, 171	2004, 2005
Luzhou	051C	2	115, 116	2006, 2007

Source: *Jane's Fighting Ships 2009-2010*.

As shown in **Table 2**, China to date has commissioned only one or two ships in each of these five classes, suggesting that at least some of these classes might have been intended to serve as stepping stones in a plan to modernize the PLA Navy's surface combatant technology incrementally before committing to larger-scale series production of destroyers.[47] China did not commission any new destroyers in 2008 or 2009, and is not expected to commission any in 2010.

The *Luhu-class ships* reportedly were ordered in 1985 but had their construction delayed by a decision to give priority to the construction of six frigates that were ordered by Thailand. The *Luhai-class ship* is believed to have served as the basis for the Luyang-class designs. Compared to the Luhai, the *Luyang I-class ships* appear stealthier. DOD stated in 2008 that the Luyang I design is equipped with the Russian-made SA-N-7B Grizzly SAM and the Chinese-made YJ-83 ASCM.[48]

[45] Norman Friedman, "Russian Arms Industry Foundering," *U.S. Naval Institute Proceedings*, September 2009: 90-91.

[46] The August 2009 ONI report states that "In recent years, the most notable upgrade to the PLA(N) surface force has been its shipboard air-air-defense (AAD) capability." *2009 ONI Report*, p. 18.

[47] One observer says the limited production runs of these four designs to date "might be financially related, or may relate to debate over what ships should follow the Type 051C air defence and Type 052C multi-role classes, or that once the Type 054A [frigate design] is accepted as the future missile frigate design, three or four of the major warship shipyards will all be assigned to construction of this design, delaying a future CG/DDG class." (Keith Jacobs, "PLA-Navy Update," *Naval Forces*, No. 1, 2007: 24.) Another observer stated I 2007 that "It looks like [the] 052C [class] was stopped for a few years due to [the] JiangNan relocation [and the] sorting out [of] all the issues on [the] 052B/C [designs]. ("2018—deadline for Taiwan invasion?" a September 22, 2007, entry in a blog on China naval and air power maintained by an author called "Feng," available online at http://china-pla.blogspot.com/2007/09/2018-deadline-for-taiwan-invasion.html.)

[48] *2007 DOD CMP*, pp. 3-4

The *Luyang II-class ships* appear to feature an even more capable AAW system that includes a Chinese-made SAM system called the HHQ-9 that has an even longer range, a vertical launch system (VLS), and a phased-array radar that is outwardly somewhat similar to the SPY-1 radar used in the U.S.-made Aegis combat system.[49]

DOD stated in 2007 the *Luzhou-class design* "is designed for anti-air warfare. It will be equipped with the Russian SA-N-20 SAM system controlled by the TOMBSTONE phased-array radar. The SA-N-20 more than doubles the range of current PLA Navy air defense systems marking a significant improvement in China's ship-borne air defense capability."[50]

Four New Indigenously Built Frigate Classes

China since the early 1990s has built four new classes of frigates, two of which are variations of two others, that are more modern than China's 29 remaining older Jianghu (Type 053) class frigates, which entered service between the mid-1970s and 1989. The four new frigate classes, like the new destroyer classes, feature improved hull designs and systems, including improved AAW capabilities. Unlike the new destroyer designs, some of the new frigate designs have been put into larger-scale series production. **Table 3** summarizes the four new classes.

Table 3. New PLA Navy Frigate Classes

Class name	Type	Number built or building	Hull number(s)	In service (actual or projected)
Jiangwei I	053 H2G	4	539-542	1991-1994
Jiangwei II	053H3	10	between 521 and 567	1998-2005
Jiangkai I	054	2	525, 526	2005-2006
Jiangkai II	054A	6	530 (lead ship), 529, n/a	2008-2011

Source: *Jane's Fighting Ships 2009-2010*

The *Jiangkai I-class ships* feature a stealthy design that somewhat resembles France's La Fayette-class frigate, which first entered service in 1996.[51] The *Jiangkai II-class ships* are a modified version of the Jiangkai I-class design that features a VLS system for its SAMs. One observer stated in 2008 that "construction of the Jiangkai II-class frigates, armed with vertically launched HQ-7 missiles, continues and these [ships] look to be the mainstay of the fleet as the 1970s-vintage Jianghu class are phased out or adapted for Coast Guard use."[52] Another observer

[49] The August 2009 report from the Office of Naval Intelligence states that "the Luyang II DDG possesses a sophisticated phased-array radar system similar to the western AEGIS radar system." *2009 ONI Report*, p. 1. Another author states that "the Chinese bought their active-array destroyer radar from the Ukrainian Kvant organization, which is unlikely to have the resources to develop the project much further." (Norman Friedman, "Russian Arms Industry Foundering," *U.S. Naval Institute Proceedings*, September 2009: 90-91.)

[50] *2007 DOD CMP*, p. 3.

[51] France sold a modified version of the La Fayette-class design to Taiwan; the six ships that Taiwan built to the design entered service in 1996-1998.

[52] *Jane's Fighting Ships 2008-2009*, p. 30 (Executive Overview). This source similarly states on page 133: "Under construction at two shipyards, it is likely that this design will be built in sufficient numbers to replace the ageing Jianghu class frigates."

similarly stated in 2007 that a total of 28 to 30 Type 054A frigates "are believed scheduled" for production to replace China's older-generation frigates.[53]

Houbei (Type 022) Fast Attack Craft

As an apparent replacement for at least some of its 190 older fast attack craft, or FACs (including 37 armed with ASCMs), China in 2004 introduced a new type of ASCM-armed fast attack craft, called the Houbei (Type 022) class, that uses a stealthy, wave-piercing, catamaran hull. The Houbei class is being built in at least six shipyards. About 60 were in service as of 2009, and a total of as many as 100 might be built.[54] The August 2009 ONI report states that "the Houbei's ability to patrol coastal and littoral waters and react at short notice allows the PLA(N)'s larger combatants to focus on offshore defense and out-of-[home]area missions without leaving a security gap along China's coastline."[55]

Amphibious Ships

Yuzhao (Type 071) Amphibious Ship

China has built the lead ship of a new class of amphibious ships called the *Yuzhao* or *Type 071 class*. The ship entered service in 2008. The design has an estimated displacement of 17,600 tons, compared with about 15,900 tons to 16,700 tons for the U.S. Navy's Whidbey Island/Harpers Ferry (LSD-41/49) class amphibious ships, which were commissioned into service between 1985 and 1998, and about 25,900 tons for the U.S. Navy's new San Antonio (LPD-17) class amphibious ships, the first of which was commissioned into service in 2006. The Type 071 design features a hull with clean, sloped sides—a design that resembles the hulls of modern western amphibious ships and appears intended to reduce the ship's visibility to radar. Some observers believe that a second Type 071 ship may now be under construction, and that China might build a total of four to six.

Reported Potential Type 081 Amphibious Ship

China reportedly might also begin building a larger amphibious ship, called the Type 081 LHD, that might displace about 20,000 tons. Such a ship might have, among other things, a greater aviation capability than the Type 071 design. Some observers believe China may build a total of three or more Type 081s.

[53] Keith Jacobs, "PLA-Navy Update," *Naval Forces*, No. 1, 2007: 26.

[54] *Jane's Fighting Ships 2008-2009*, p. 30 (Executive Overview) and p. 141. One observer stated in 2007 that "In addition to the Houbei class, one observer stated in 2007 that China in 2005 ordered 24 to 30 Molniya-class ASCM-armed fast attack craft from Russia. The Molniya class is an upgraded version of the Russian Tarantul-class design that might be armed with four SS-N-22 ASCMs. The first four, according to this observer, were to have been delivered by late-2007 or early-2008." (Keith Jacobs, "PLA-Navy Update," *Naval Forces*, No. 1, 2007: 27.)

[55] *2009 ONI Report*, p. 20. For further discussion of the Houbei class, see John Patch, "A Thoroughbred Ship-Killer," *U.S. Naval Institute Proceedings*, April 2010: 48-53.

Potential Roles for Type 071 and Type 081 Ships

Although larger amphibious ships such as the Type 071 and the Type 081 might have some value for conducting amphibious landings in Taiwan-related conflict scenarios, some observers believe that China would build and operate such ships more for their value in conducting other kinds of operations that are more distant from China's shores. Larger amphibious ships can be used for conducting not only amphibious landings, but humanitarian assistance and disaster relief (HA/DR) operations, maritime security operations (such as anti-piracy operations),[56] and non-combatant evacuation operations (NEOs). (Some countries are acquiring larger amphibious ships as much, or more, for these kinds of operations as for conducting amphibious landings.) Politically, larger amphibious ships can also be used for naval diplomacy (i.e., port calls and engagement activities).

Other New Amphibious Ships and Landing Craft

Aside from the Type 071 and Type 081 projects, China between 2003 and 2005 commissioned into service three new classes of smaller amphibious ships and landing craft. Each type was built at three or four shipyards. Between these three other classes, China commissioned into service a total of 20 amphibious ships and 10 amphibious landing craft in 2003-2005. Additional units in some of these classes are possible. China also has numerous older amphibious ships and landing craft of various designs.

Change in Amphibious Lift Capability Since 2000

Although China in recent years has deployed new amphibious ships and craft, DOD states that "PLA air and amphibious lift capacity has not improved appreciably since 2000 when the Department of Defense assessed the PLA as capable of sealift of one infantry division."[57]

Maritime Surveillance and Targeting Systems

China reportedly is developing or deploying maritime surveillance and targeting systems that can detect U.S. ships and submarines and provide targeting information for Chinese ASBMs and other Chinese military units. These systems reportedly include land-based over-the-horizon backscatter (OTH-B) radars, land-based over-the-horizon surface wave (OTH-SW) radars, electro-optical satellites, radar satellites, and seabed sonar networks.[58]

[56] On June 30, 2010, it was reported that the Type 071 amphibious ship was one of three ships forming the sixth anti-piracy naval group sent by China to waters of Somalia for anti-piracy operations. "China Sends Sixth Naval Escort Flotilla to Gulf of Aden," *Xinhua*, June 30, 2010. (The story carries a mistaken dateline of July 30.)

[57] *2009 DOD CMP*, p. viii.

[58] For a recent article discussing these systems, see Andrew S. Erickson, "Eyes in the Sky," *U.S. Naval Institute Proceedings*, April 2010: 36-41.

Past, Current, and Projected Chinese Ship and Aircraft Force Levels

Table 4 shows numbers of Chinese navy ships and aircraft in past years, in 2009, and numbers projected for 2015 and 2020. *The figures in the table lump older and less capable ships together with newer and more capable ships discussed above.*

As can be seen in the table, ONI projects that, between 2009 and 2020, the total number of submarines will increase, a small number of aircraft carriers and major amphibious ships will be added to the fleet, the total number destroyers will remain more or less unchanged, and the total number of frigates will decline slightly. The total number of larger combat ships in China's navy (defined here as submarines, aircraft carriers, destroyers, and frigates) is projected to increase somewhat, mostly because of the projected increase in attack submarines. As these changes take place, the overall capability of China's navy will increase as newer and more capable units replace older and less capable ones. The August 2009 ONI report states that "as newer and more capable platforms replace aging platforms, the PLA(N)'s total order of battle may remain relatively steady, particularly in regard to the surface force."[59]

As can also be seen in the table, ONI projects that that the numbers of land-based maritime strike aircraft, carrier-based fighters, and helicopters, will almost triple between 2009 and 2020, and that most of this increase will occur between 2009 and 2015.

[59] *2009 ONI Report*, p. 46.

Table 4. Past, Current, and Projected Numbers of Ships and Aircraft

(Figures include both older and less capable units and newer and more capable units)

	1990	1995	2000	2005	2009	Projection for 2015	Projection for 2020
Ships							
Ballistic missile submarines	1	1	1	2	3	4 or 5?	4 or 5?
Attack submarines (SSNs and SSs)	80	82	65	58	59	~70	~72
SSNs	*5*	*5*	*5*	*6*	*6*	*n/a*	*n/a*
SSs	*75*	*77*	*60*	*52*	*53*	*n/a*	*n/a*
Aircraft carriers	0	0	0	0	0	1?	2?
Destroyers	14	18	21	25	26	~26	~26
Frigates	35	35	37	42	48	~45	~42
Subtotal above ships	***130***	***136***	***124***	***127***	***136***	***~146 or ~147?***	***~146 or ~147?***
Missile-armed attack craft	200	165	100	75	80+	n/a	n/a
Amphibious ships	65	70	60	56	58	n/a	n/a
LPDs/LHDs	*0*	*0*	*0*	*0*	*1*	*~6?*	*~6?*
Other	*65*	*70*	*60*	*56*	*57*	*n/a*	*n/a*
Mine warfare ships	n/a	n/a	n/a	n/a	40	n/a	n/a
Major auxiliary ships	n/a	n/a	n/a	n/a	50	n/a	n/a
Minor auxiliary ships and support craft	n/a	n/a	n/a	n/a	250+	n/a	n/a
Aircraft							
Land-based maritime strike aircraft	n/a	n/a	n/a	n/a	~145	~255	~258
Carrier-based fighters	0	0	0	0	0	~60	~90
Helicopters	n/a	n/a	n/a	n/a	~34	~153	~157
Subtotal above aircraft	n/a	n/a	n/a	n/a	***~179***	***~468***	***~505***

Source: Prepared by CRS. Source for 2009, 2015, and 2020: *2009 ONI report*, page 18 (text and table), page 21 (text), and (for figures not available on pages 18 or 21), page 45 (CRS estimates based on visual inspection of ONI graph entitled "Estimated PLA[N] Force Levels"). Source for 1990, 1995, 2000, and 2005: Navy data provided to CRS by Navy Office of Legislative Affairs, July 9, 2010.

Notes: n/a is not available. The use of question marks for the projected figures for ballistic missile submarines, aircraft, carriers, and major amphibious ships (LPDs and LHDs) for 2015 and 2020 reflects the difficulty of resolving these numbers visually from the graph on page 45 of the ONI report. The graph shows more major amphibious ships than ballistic missile submarines, and more ballistic missile submarines than aircraft carriers. Figures in this table for aircraft carriers include the ex-Ukrainian carrier Varyag, which is likely to enter service before any new-construction indigenous carrier. The ONI report states on page 19 that China "will likely have an operational, domestically produced carrier sometime after 2015." Such a ship, plus the Varyag, would give China a force of 2 operational carriers sometime after 2015.

The graph on page 45 shows a combined total of amphibious ships and landing craft of about 244 in 2009, about 261 projected for 2015, and about 253 projected for 2015.

Since the graph on page 45 of the ONI report is entitled "Estimated PLA[N] Force Levels," aircraft numbers shown in the table presumably do not include Chinese air force (PLAAF) aircraft that may be capable of attacking ships or conducting other maritime operations.

Chinese Naval Operations Away from Home Waters

Chinese navy ships in recent years have begun to conduct operations away from China's home waters. Although many of these operations have been for making diplomatic port calls, some of them have been for other purposes, including anti-piracy operations in waters off Somalia.

In November 2004, a Han-class SSN was detected in Japanese territorial waters near Okinawa.[60] DIA states that, as part of the same deployment, this submarine traveled "far into the western Pacific Ocean."[61] Press reports state that the submarine operated in the vicinity of Guam before moving toward Okinawa.[62]

On October 26, 2006, a Song-class SS reportedly surfaced five miles away from the Japan-homeported U.S. Navy aircraft carrier *Kitty Hawk* (CV-63), which reportedly was operating at the time with its strike group in international waters in the East China Sea, near Okinawa. According to press reports, the carrier strike group at the time was not actively searching for submarines, and the Song-class boat remained undetected by the strike group until it surfaced and was observed by one of the strike group's aircraft.[63] The Chinese government denied that the submarine was following the strike group.[64]

In December 2008, China deployed two destroyers and a support ship to waters off Somalia to conduct anti-piracy operations. According to one source, this was only the third deployment of Chinese naval ships into the Indian Ocean in more than six centuries.[65] China since that time has deployed successive small groups of ships to waters of Somalia to maintain its anti-piracy operations there.[66] U.S. officials have stated that they welcome a Chinese contribution to the current multi-nation effort to combat piracy off Somalia.

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[60] Mark Magnier, "China Regrets Sub Incident, Japan Says," *Los Angeles Times*, November 17, 2004; Martin Fackler, "Japanese Pursuit Of Chinese Sub Raises Tensions," *Wall Street Journal*, November 15, 2004: 20; Kenji Hall, "Japan: Unidentified sub is Chinese," *NavyTimes.com (Associated Press)*, November 12, 2004. See also *2006 DOD CMP*, pp. 11-12.

[61] Current and Projected National Security Threats to the United States, Vice Admiral Lowell E. Jacoby, U.S. Navy, Director, Defense Intelligence Agency, Statement for the Record [before the] Senate Select Committee on Intelligence, 16 February 2005, p. 16-17. See also Current and Projected National Security Threats to the United States, Vice Admiral Lowell E. Jacoby, U.S. Navy, Director, Defense Intelligence Agency, Statement For the Record [before the] Senate Armed Services Committee, 17 March 2005, p. 17.

[62] Timothy Hu, "Ready, steady, go ... ," *Jane's Defence Weekly*, April 13, 2005: 27; "China Sub Tracked By U.S. Off Guam Before Japan Intrusion," *Japan Times*, November 17, 2004.

[63] Bill Gertz, "China Sub Secretly Stalked U.S. Fleet," *Washington Times*, November 13, 2006: 13; Philip Creed, "Navy Confirms Chinese Sub Spotted Near Carrier," *NavyTimes.com*, November 13, 2006; Bill Gertz, "Defenses On [sic] Subs To Be Reviewed," *Washington Times*, November 14, 2006; En-Lai Yeoh, "Fallon Confirms Chinese Stalked Carrier," *NavyTimes.com*, November 14, 2006; Bill Gertz, "Admiral Says Sub Risked A Shootout," *Washington Times*, November 15, 2006; Jeff Schogol, "Admiral Disputes Report That Kitty Hawk, Chinese Sub Could Have Clashed," *Mideast Starts and Stripes*, November 17, 2006.

[64] Associated Press, "China Denies Reports That Sub Followed Kitty Hawk," *NavyTimes.com*, November 16, 2006. A shorter version of the same story was published as Associated Press, "China Denies Sub Followed A Group Of U.S. Warships," *Asian Wall Street Journal*, November 17, 2006: 11.

[65] Andrew S. Erickson and Juston D. Mikolay, "Welcome China to the Fight Against Pirates," *U.S. Naval Institute Proceedings*, March 2009: 36.

[66] For a discussion of China's anti-piracy operations in waters off Somalia, see Andrew S. Erickson, "Chinese Sea Power in Action: The Counterpiracy Mission in the Gulf of Aden and Beyond," which is Chapter 7 (pages 295-376) of Roy Kamphausen, David Lai, and Andrew Scobell, editors, *The PLA At Home and Abroad: Assessing the Operational Capabilities of China's Military*, Strategic Studies Institute, U.S. Army War College, June 2010, available at (continued...)

In March 2010, Chinese navy ships reportedly entered the Persian Gulf for the first time.[67]

In April 2010, a group of about 10 Chinese ships, reportedly including two Sovremenny-class destroyers, three frigates, and two Kilo-class attack submarines, transited Japan's Miyako Strait on their way to and from anti-submarine warfare exercises in the Western Pacific. Helicopters from the formation flew close to Japanese destroyers that were sent to the area to observe the Chinese ships, prompting a protest from Japan.[68]

China reportedly is also building port facilities in countries facing onto the Indian Ocean, perhaps in part to support Chinese naval operations along the sea line of communication linking China to Persian Gulf oil sources. Some observers have referred to China's efforts to build these facilities as a "string of pearls" strategy.[69]

(...continued)

http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=995.

[67] Greg Torode, "PLA Navy Ships Enter Gulf For The First Time," *South China Morning Post*, March 27, 2010: 1.

[68] Mure Dickie, "Japan Seeks Answers Over Chinese Warships," *Financial Times*, April 13, 2010; Jay Alabaster, "Tokyo Wary Of Chinese Military Vessels," *Washington Times*, April 14, 2010; Greg Torode, "Exercises Show PLA Navy's New Strength," *South China Morning Post*, April 18, 2010: 1; "Japan Protests Over Chinese Helicopter's Fly-By," *Agence France-Presse*, April 21, 2010; "Japan: Protest Over Chinese Helicopter," *New York Times*, April 22, 2010; "China's Naval Drills Near Japan 'Not A Threat,'" *Singapore Straits Times*, April 24, 2010: 59; "China Envoy Says Naval Chopper Fly-By Was Japan's Fault (Updated)," *Agence France-Presse*, April 27, 2010; L. C. Russell Hsiao, "In A Fortnight," *China Brief*, April 29, 2010: 1-2.

[69] One press report in 2005, for example, stated:

> China is building up military forces and setting up bases along sea lanes from the Middle East to project its power overseas and protect its oil shipments, according to a previously undisclosed internal report prepared for Defense Secretary Donald H. Rumsfeld.
>
> "China is building strategic relationships along the sea lanes from the Middle East to the South China Sea in ways that suggest defensive and offensive positioning to protect China's energy interests, but also to serve broad security objectives," said the report sponsored by the director, Net Assessment, who heads Mr. Rumsfeld's office on future-oriented strategies.
>
> The Washington Times obtained a copy of the report, titled "Energy Futures in Asia," which was produced by defense contractor Booz Allen Hamilton.
>
> The internal report stated that China is adopting a "string of pearls" strategy of bases and diplomatic ties stretching from the Middle East to southern China.

The press report stated that China is:

> - operating an eavesdropping post and building a naval base at Gwadar, Pakistan, near the Persian Gulf;
> - building a container port facility at Chittagong, Bangladesh, and seeking "much more extensive naval and commercial access" in Bangladesh;
> - building naval bases in Burma, which is near the Strait of Malacca;
> - operating electronic intelligence-gathering facilities on islands in the Bay of Bengal and near the Strait of Malacca;
> - building a railway line from China through Cambodia to the sea;
> - improving its ability to project air and sea power into the South China Sea from mainland China and Hainan Island;
> - considering funding a $20-billion canal that would cross the Kra Isthmus of Thailand, which would allow ships to bypass the Strait of Malacca and permit China to establish port facilities there.

Bill Gertz, "China Builds Up Strategic Sea Lanes," *Washington Times*, January 18, 2005, p.1. See also Daniel J. Kostecka, "The Chinese Navy's Emerging Support Network in the Indian Ocean," *China Brief*, July 22, 1010: 3-5; Edward Cody, "China Builds A Smaller, Stronger Military," *Washington Post*, April 12, 2005, p. 1; Indrani Bagchi, (continued...)

The August 2009 ONI report contains additional discussion of operations away from home waters.[70]

March 2010 Testimony of Commander, U.S. Pacific Command

For additional remarks regarding China's military modernization effort, including its naval modernization effort, see the excerpt from the March 2010 testimony of Admiral Robert Willard, Commander, U.S. Pacific Command, presented in **Appendix B**.

Comparing U.S. and Chinese Naval Capabilities

U.S. and Chinese naval capabilities are sometimes compared by showing comparative numbers of U.S. and Chinese ships. Although numbers of ships can be relatively easy to compile from published reference sources, they are highly problematic as a means of assessing relative U.S. and Chinese naval capabilities, for the following reasons:

- A fleet's total number of ships (or its aggregate tonnage) is only a partial metric of its capability. In light of the many other significant contributors to naval capability,[71] navies with similar numbers of ships or similar aggregate tonnages can have significantly different capabilities, and navy-to-navy comparisons of numbers of ships or aggregate tonnages can provide a highly inaccurate sense of their relative capabilities.
- Total numbers of ships of a given type (such as submarines, destroyers, or frigates) can obscure potentially significant differences in the capabilities of those ships, both between navies and within one country's navy.[72] The potential for obscuring differences in the capabilities of ships of a given type is particularly significant in assessing relative U.S. and Chinese capabilities, in part because China's navy includes significant numbers of older, obsolescent ships. Figures on total numbers of Chinese submarines, destroyers, frigates, and coastal patrol craft lump older, obsolescent ships together with more modern and more capable designs.
- A focus on total ship numbers reinforces the notion that increases in total numbers necessarily translate into increases in aggregate capability, and that

(...continued)

"China Eyeing Base in Bay of Bengal?" *Times of India*, August 9, 2008, posted online at http://timesofindia.indiatimes.com/China_eyeing_base_in_Bay_of_Bengal/articleshow/3343799.cms; Eric Ellis, "Pearls for the Orient," *Sydney Morning Herald*, July 9, 2010.

[70] 2009 ONI Report, p. 40. See also Dean Chang, "The Chinese Navy's Budding Overseas Presence," Heritage Foundation Web Memo, No. 2752, January 11, 2010, 3 pp; and Wendell Minnick, "Chinese Expeditions Boost Naval Expertise," *DefenseNews.com*, January 11, 2010.

[71] These include types (as opposed to numbers or aggregate tonnage) of ships; types and numbers of aircraft; the sophistication of sensors, weapons, C4ISR systems, and networking capabilities; supporting maintenance and logistics capabilities; doctrine and tactics; the quality, education, and training of personnel; and the realism and complexity of exercises.

[72] Differences in capabilities of ships of a given type can arise from a number of other factors, including sensors, weapons, C4ISR systems, networking capabilities, stealth features, damage-control features, cruising range, maximum speed, and reliability and maintainability (which can affect the amount of time the ship is available for operation).

decreases in total numbers necessarily translate into decreases in aggregate capability. For a Navy like China's, which is modernizing in some ship categories by replacing larger numbers of older, obsolescent ships with smaller numbers of more modern and more capable ships, this is not necessarily the case.[73] As shown in **Table 4**, for example, China's submarine force today has fewer boats than it did in the 1990, but has greater aggregate capability than it did in 1990, because larger numbers of older, obsolescent boats have been replaced by smaller numbers of more modern and more capable boats. A similar point might be made about China's force of missile-armed attack craft. For assessing navies like China's, it can be more useful to track the growth in numbers of more modern and more capable units. This CRS report shows numbers of more modern and more capable submarines, destroyers, and frigates in **Table 1**, **Table 2**, and **Table 3**, respectively.

- Comparisons of numbers of ships (or aggregate tonnages) do not take into account maritime-relevant capabilities that countries might have outside their navies, such as land-based anti-ship ballistic missiles (ASBMs), land-based anti-ship cruise missiles (ASCMs), and land-based air force aircraft armed with ASCMs. This is a particularly important consideration in comparing U.S. and Chinese military capabilities for influencing events in the Western Pacific.
- The missions to be performed by one country's navy can differ greatly from the missions to be performed by another country's navy. Consequently, navies are better measured against their respective missions than against one another. This is another significant consideration in assessing U.S. and Chinese naval capabilities, because the missions of the two navies are quite different.

Potential Oversight Issues for Congress

China as a Defense-Planning Priority

In U.S. defense planning and programming, how much emphasis should be placed on programs for countering improved Chinese military forces in coming years?

The question of how much emphasis to place in U.S. defense planning on programs for countering improved Chinese military forces is of particular importance to the U.S. Navy, because many programs associated with countering improved Chinese military forces would fall within the Navy's budget. In terms of potential impact on programs and spending, the Navy might have more at stake on this issue than the Army and Marine Corps, and perhaps at least as much, if not more, than the Air Force.

Decisions that Congress and the executive branch make regarding U.S. Navy programs for countering improved Chinese maritime military capabilities could affect the likelihood or possible outcome of a potential U.S.-Chinese military conflict in the Pacific over Taiwan or some other issue. Some observers consider such a conflict to be very unlikely, in part because of

[73] The August 2009 ONI report states with regard to China's navy that "even if naval force sizes remain steady or even decrease, overall naval capabilities can be expected to increase as forces gain multimission capabilities." (*2009 ONI Report*, p. 46.)

significant U.S.-Chinese economic linkages and the tremendous damage that such a conflict could cause on both sides. In the absence of such a conflict, however, the U.S.-Chinese military balance in the Pacific could nevertheless influence day-to-day choices made by other Pacific countries, including choices on whether to align their policies more closely with China or the United States. In this sense, decisions that Congress and the executive branch make regarding U.S. Navy programs for countering improved Chinese maritime military forces could influence the political evolution of the Pacific, which in turn could affect the ability of the United States to pursue goals relating to various policy issues, both in the Pacific and elsewhere.

Summary of Arguments

Those who argue that relatively less emphasis should be placed on programs for countering improved Chinese military forces in coming years could argue one or more of the following:

- Preparing for a potential conflict over Taiwan years from now might be unnecessary, since the situation with Taiwan might well be resolved by then.
- It is highly unlikely that China and the United States will come to blows in coming years over some other issue, due to the deep economic and financial ties between China and the United States and the tremendous damage such a conflict could inflict.
- Placing a strong emphasis on programs for countering improved Chinese military forces could induce China to increase planned investments in its own naval forces, leading to an expensive U.S.-China naval arms race.
- Far from coming to blows, Chinese and U.S. naval forces in coming years can and should cooperate in areas of common interest such as humanitarian assistance and disaster response (HA/DR) operations, anti-piracy operations, and other maritime-security operations.

Those who argue that relatively more emphasis should be placed on programs for countering improved Chinese military forces in coming years could argue one or more of the following:

- Not preparing for a potential conflict over Taiwan years from now could make such a conflict more likely by emboldening China to use military force to attempt to achieve its goals regarding Taiwan. It might also embolden China to use its naval forces more aggressively in asserting its maritime territorial claims and its interpretation of international laws relating to freedom of navigation in exclusive economic zones (an interpretation at odds with the U.S. interpretation).
- China's naval modernization effort may be driven more by internal Chinese factors than by external factors such as U.S. decisions on defense spending. To the extent that China's naval modernization effort might be influenced by U.S. decisions on defense spending, a decision to not emphasize programs for countering improved Chinese military forces might encourage China to continue or even increase its naval modernization effort out of a belief that the effort is succeeding in terms of dissuading U.S. leaders from taking steps to prevent a shift in China's favor in the balance of military forces in the Western Pacific.
- Even if China and the United States never come to blows with one another, maintaining a day-to-day presence in the Pacific of U.S. naval forces capable of successfully countering Chinese naval forces will be an important U.S. tool for

shaping the region—that is, for ensuring that other countries in the region do not view China as the region's emerging military leader (or the United States as a fading military power in the region), and respond by either aligning their policies more closely with China or taking steps to improve their own military capabilities that the United State might prefer they not take, such as developing nuclear weapons.

- Placing a relatively strong emphasis on programs for countering improved Chinese military forces does not preclude cooperating with China in areas such as humanitarian assistance and disaster response (HA/DR) operations, anti-piracy operations, and other maritime-security operations.

2010 Quadrennial Defense Review (QDR)

China-Related Passages in 2010 QDR

DOD's report on the 2010 Quadrennial Defense Review (QDR) states:

> China's growing presence and influence in regional and global economic and security affairs is one of the most consequential aspects of the evolving strategic landscape in the Asia-Pacific region and globally. In particular, China's military has begun to develop new roles, missions, and capabilities in support of its growing regional and global interests, which could enable it to play a more substantial and constructive role in international affairs. The United States welcomes a strong, prosperous, and successful China that plays a greater global role. The United States welcomes the positive benefits that can accrue from greater cooperation. However, lack of transparency and the nature of China's military development and decision-making processes raise legitimate questions about its future conduct and intentions within Asia and beyond. Our relationship with China must therefore be multidimensional and undergirded by a process of enhancing confidence and reducing mistrust in a manner that reinforces mutual interests. The United States and China should sustain open channels of communication to discuss disagreements in order to manage and ultimately reduce the risks of conflict that are inherent in any relationship as broad and complex as that shared by these two nations.[74]

In a section entitled "Deter and Defeat Aggression in Anti-Access Environments," the 2010 QDR report states:

> U.S. forces must be able to deter, defend against, and defeat aggression by potentially hostile nation-states. This capability is fundamental to the nation's ability to protect its interests and to provide security in key regions. Anti-access strategies seek to deny outside countries the ability to project power into a region, thereby allowing aggression or other destabilizing actions to be conducted by the anti-access power. Without dominant U.S. capabilities to project power, the integrity of U.S. alliances and security partnerships could be called into question, reducing U.S. security and influence and increasing the possibility of conflict.
>
> In the future, U.S. forces conducting power projection operations abroad will face myriad challenges. States with the means to do so are acquiring a wide range of sophisticated weapons and supporting capabilities that, in combination, can support anti-access strategies

[74] Department of Defense, *Quadrennial Defense Review Report*, February 2010, p. 60.

aimed at impeding the deployment of U.S. forces to the theater and blunting the operations of those forces that do deploy forward.

North Korea and Iran, as part of their defiance of international norms, are actively testing and fielding new ballistic missile systems….

As part of its long-term, comprehensive military modernization, China is developing and fielding large numbers of advanced medium-range ballistic and cruise missiles, new attack submarines equipped with advanced weapons, increasingly capable long-range air defense systems, electronic warfare and computer network attack capabilities, advanced fighter aircraft, and counter-space systems. China has shared only limited information about the pace, scope, and ultimate aims of its military modernization programs, raising a number of legitimate questions regarding its long-term intentions.

U.S. power projection forces also confront growing threats in other domains. In recent years, a number of states have acquired sophisticated anti-ship cruise missiles, quiet submarines, advanced mines, and other systems that threaten naval operations. In addition to these weapons, Iran has fielded large numbers of small, fast attack craft….

U.S. air forces in future conflicts will encounter integrated air defenses of far greater sophistication and lethality than those fielded by adversaries of the 1990s.… Several states have the capability to disrupt or destroy satellites that provide surveillance, communications, positioning, and other functions important to military operations.…

Because of their extreme lethality and long-term effects, nuclear weapons are a source of special concern, both for the United States and for its allies and partners in regions where adversary states possess or seek such weapons.…

DoD is taking steps to ensure that future U.S. forces remain capable of protecting the nation and its allies in the face of this dynamic threat environment. In addition to ongoing modernization efforts, this QDR has directed the following further enhancements to U.S. forces and capabilities:

- **Develop a joint air-sea battle concept.** The Air Force and Navy together are developing a new joint air-sea battle concept for defeating adversaries across the range of military operations, including adversaries equipped with sophisticated anti-access and area denial capabilities. The concept will address how air and naval forces will integrate capabilities across all operational domains—air, sea, land, space, and cyberspace—to counter growing challenges to U.S. freedom of action. As it matures, the concept will also help guide the development of future capabilities needed for effective power projection operations.

- **Expand future long-range strike capabilities.** Enhanced long-range strike capabilities are one means of countering growing threats to forward-deployed forces and bases and ensuring U.S. power projection capabilities. Building on insights developed during the QDR, the Secretary of Defense has ordered a follow-on study to determine what combination of joint persistent surveillance, electronic warfare, and precision-attack capabilities, including both penetrating platforms and stand-off weapons, will best support U.S. power projection operations over the next two to three decades. Findings from that study will inform decisions that shape the FY 2012-17 defense program. A number of related efforts are underway. The Navy is investigating options for expanding the capacity of future Virginia-class attack submarines for long-range strike. It is also slated to conduct field experiments with prototype versions of a naval unmanned combat aerial system (N-UCAS). The N-UCAS offers the potential to greatly increase the range of ISR and strike operations from the Navy's carrier fleet. The Air Force is reviewing

options for fielding survivable, long-range surveillance and strike aircraft as part of a comprehensive, phased plan to modernize the bomber force. The Navy and the Air Force are cooperatively assessing alternatives for a new joint cruise missile. The Department also plans to experiment with conventional prompt global strike prototypes.

- **Exploit advantages in subsurface operations.** The Navy is increasing funding for the development of an unmanned underwater vehicle that will be capable of a wide range of tasks.

- **Increase the resiliency of U.S. forward posture and base infrastructure.** In key regions, U.S. forces will need to have access to networks of bases and supporting infrastructures that are more resilient than today's in the face of attacks by a variety of means. The Department is studying options to increase the resiliency of bases in selected theaters and will consult with allies and fund these as promising initiatives are identified through analysis. Appropriate steps will vary by region but will generally involve combinations of measures, including hardening key facilities against attack, redundancy and dispersal concepts, counterintelligence, and active defenses, complemented by long-range platforms for ISR and strike operations.

- **Assure access to space and the use of space assets.** The Department, through the implementation of priorities from the Space Posture Review, will explore opportunities to leverage growing international and commercial expertise to enhance U.S. capabilities and reduce the vulnerability of space systems and their supporting ground infrastructure.... Ongoing implementation of the 2008 Space Protection Strategy will reduce vulnerabilities of space systems, and fielding capabilities for rapid augmentation and reconstitution of space capabilities will enhance the overall resiliency of space architectures.

- **Enhance the robustness of key C4ISR capabilities.** In concert with improving the survivability of space systems and infrastructure, U.S. forces will require more robust and capable airborne and surface-based systems to provide critical wartime support functions. In particular, airborne ISR assets must be made more survivable in order to support operations in heavily defended airspace. The Department is also exploring options for expanding jam-resistant satellite communications and for augmenting these links with long-endurance aerial vehicles that can serve as airborne communications relay platforms.

- **Defeat enemy sensor and engagement systems.** In order to counter the spread of advanced surveillance, air defense, and strike systems, the Department has directed increased investments in selected capabilities for electronic attack.

- **Enhance the presence and responsiveness of U.S. forces abroad.** In consultation with allies, the Department is examining options for deploying and sustaining selected forces in regions facing new challenges. For example, selectively homeporting additional naval forces forward could be a cost-effective means to strengthen deterrence and expand opportunities for maritime security cooperation with partner navies. The Department will conduct regional and global reviews of U.S. defense posture to identify key posture priorities that require consultation with allies and constituents.[75]

[75] Department of Defense, *Quadrennial Defense Review Report*, February 2010, pp. 31-34. The report on the 2010 QDR uses the terms China, Chinese, anti-access (with or without the hyphen), and area-denial (with or without the hyphen) a total of 34 times, compared to a total of 18 times in the report on the 2006 QDR, and 16 times in the report on the 2001 QDR. Subtracting out the uses of anti-access and area denial, the report on the 2001 QDR used the terms (continued...)

In assessing the above section from the 2010 QDR report, potential oversight questions for Congress include the following:

- Of the various initiatives discussed in the above section, how many are new initiatives?
- To what degree do the remarks in the above section amount to firm commitments to provide funding (particularly procurement funding) for the initiatives mentioned in the above section?
- What net effect will the first of the initiatives above—the development of the air-sea battle concept—have on Navy and Air Force spending on programs for countering anti-access forces? Will the air-sea battle concept provide an argument for increasing Navy and Air Force spending on programs for countering anti-access forces because development of the concept will identify gaps in Navy and Air Force capabilities for countering such forces? Will it provide an argument for not increasing (or reducing) Navy and Air Force spending on programs for countering anti-access forces because development of the concept will identify joint efficiencies between the services?[76]

Press Reports Regarding China-Related Passages in 2010 QDR

A February 7, 2010, news report stated:

> As the 2010 Quadrennial Defense Review moved from a December draft to the February final version, Pentagon officials deleted several passages and softened others about China's military buildup.
>
> Gone is one passage, present in the Dec. 3 draft, declaring that "prudence requires" the United States prepare for "disruptive competition and conflict" with China.
>
> Altered are passages about Russian arms sales to Beijing and China's 2007 destruction of a low-orbit satellite.
>
> Why the changes? One Pentagon official said department and Obama administration officials worried that harsh words might upset Chinese officials at a time when the United States and China are so economically intertwined.
>
> Beijing, for example, holds a large chunk of U.S. debt.
>
> "Don't piss off your banker," the Pentagon official said.
>
> Both versions contain this passage: "The United States welcomes a strong, prosperous, and successful China that plays a greater global role." But the draft version goes on to include the

(...continued)

China or Chinese zero times; the report on the 2006 QDR used them 16 times; and the report on the 2010 QDR used them 11 times.

[76] For more on the air-sea battle concept, see Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, *AirSea Battle[:] A Point-of-Departure Operational Concept*, Washington, Center for Strategic and Budgetary Assessments, 2010, 123 pp.; and Andrew F. Krepinevich, *Why AirSea Battle?*, Washington, Center for Strategic and Budgetary Assessments, 2010, 40 pp.

following passage, which was stripped from the final QDR: "However, that future is not fixed, and while the United States will seek to maximize positive outcomes and the common benefits that can accrue from cooperation, prudence requires that the United States balance against the possibility that cooperative approaches may fail to prevent disruptive competition and conflict." Several defense insiders said that latter portion of that section amounts to strong language.

In another section, both the final and draft versions discuss Beijing's military buildup, but the draft language is more specific.

"Over the past ten years, for example, China has fielded more than one thousand short- and medium-range ballistic and cruise missiles, advanced attack submarines armed with wake-homing torpedoes, increasingly lethal integrated air defense systems, extensive electronic warfare and computer network attack capabilities, and counter-space systems," the draft says.

Gone from the final version are the estimates on the number of ballistic missiles in China's arsenal. Also deleted is a mention of the torpedoes' "wake-homing" capabilities. And the wording of the descriptions of Beijing's air defense and electronic warfare platforms was softened.

The draft refers directly to alleged Russian surface-to-air missile system sales to China, while the final QDR refers only to "proliferation of modern surface-to-air missile systems by Russia and others." The early version mentions China's 2007 destruction of one of its satellites in orbit, but the final version says simply, "Several states have the capability to disrupt or destroy satellites that provide surveillance, communications, positioning, and other functions important to military operations." Retired Air Force Gen. Charles Wald, now with Deloitte and a former vice president of L-3 Communications, said the 2010 incarnation of the review featured an unprecedented level of involvement from other U.S. agencies.

Wald, who worked on past QDRs while serving in senior Air Force and Joint Staff posts, said altering the China language "was definitely a diplomatic issue." State Department officials weighed in on the wording, he said.

A DoD spokeswoman did not provide answers to questions about the changes by press time.[77]

A February 18, 2010, news report stated:

The Pentagon's Quadrennial Defense Review (QDR) makes little overt reference to China's military buildup. Missing from the 2010 version are several concerns of the 2006 edition, such as China's cyberwarfare capabilities, nuclear arsenal, counterspace operations, and cruise and ballistic missiles.

Instead, there's a stated desire for more dialogue with Beijing—and prescriptions for countering the anti-access and area-denial capabilities of unnamed countries.

Analysts say the QDR attempts to address the threat posed by China without further enraging Beijing.

[77] John T. Bennett, "China Language Softened In Final Version Of QDR," *Defense News*, February 7, 2010: 8.

> "If you look at the list of 'further enhancements to U.S. forces and capabilities' described in the section 'Deter and Defeat Aggression in Anti-Access Environments,' those are primarily capabilities needed for defeating China, not Iran, North Korea or Hizbollah," said Roger Cliff, a China military specialist at Rand. "So even though not a lot of time is spent naming China ... analysis of the China threat is nonetheless driving a lot of the modernization programs described in the QDR." Among the QDR's recommendations: expand long-range strike capabilities; exploit advantages in subsurface operations; increase the resiliency of U.S. forward posture and base infrastructure; assure access to space and space assets; improve key intelligence, surveillance and reconnaissance capabilities; defeat enemy sensors and engagement systems; and increase the presence and responsiveness of U.S. forces abroad.
>
> All of these could respond to China's development of anti-ship and intercontinental ballistic missiles, ballistic missile defenses, anti-satellite weapons and submarines.
>
> The report does offer concerns about transparency: "The nature of China's military development and decision-making processes raise legitimate questions about its future conduct and intentions within Asia and beyond." It urges building a relationship with China that is "undergirded by a process of enhancing confidence and reducing mistrust in a manner that reinforces mutual interests." The new emphasis on confidence-building measures (CBMs) and military dialogue is in tune with President Obama's strategy of offering an "open hand rather than a clenched fist," said Dean Cheng, a Chinese security affairs specialist at the Heritage Foundation. "This includes, it would appear, a greater emphasis on CBMs, arms control proposals and the like toward the PRC [People's Republic of China]." Compared with the 2006 QDR, the new report makes no reference to Taiwan, but the reasons might be more pragmatic. "The issue of Taiwan has receded since 2006, as cross-Strait tensions have distinctly declined," Cheng said. "The QDR is reflecting that change." Still, Beijing reacted with unusual fury to Washington's Jan. 29 release to Taiwan of a $6.4 billion arms sale, including Black Hawk helicopters and Patriot missile defense systems.
>
> China canceled military exchanges, threatened sanctions against U.S. defense companies and publicized calls by some People's Liberation Army officers to dump U.S. Treasury bonds.
>
> China had already sold off $34.2 billion in U.S. securities in December, lowering its total holdings from $789.6 billion to $755.4 billion, but that appears unrelated to the arms sale.[78]

Another February 18, 2010, news report stated:

> The Pentagon deleted language expressing concerns about a future conflict with China and dropped references to Beijing's missiles and anti-satellite threats from its major four-year strategy review release earlier this month.
>
> Pentagon spokesman Geoff Morrell defended the softening of language that was contained in an unofficial Dec. 3 draft of the Quadrennial Defense Review, known as the QDR.
>
> Mr. Morrell said that any previous versions of the QDR were "staff-level documents" that lacked "senior leader input or approval."
>
> The offensive language that was cut in the final QDR was pulled from the section on how and why U.S. forces will "deter and defeat aggression in anti-access environment." The reference to "anti-access" is terminology often used by the Pentagon to describe key

[78] Wendell Minnick, "U.S. QDR Uses Veiled Language on China," *DefenseNews.com*, February 18, 2010.

weapons systems in China's arsenal, such as its anti-satellite weapons and the maneuvering warheads on ballistic missiles designed to kill U.S. aircraft carriers that would be called on to defend Taiwan from a mainland strike.

"Chinese military doctrine calls for pre-emptive strikes against an intervening power early in a conflict and places special emphasis on crippling the adversary's [intelligence, surveillance, reconnaissance], command and control, and information systems," the draft stated. It noted that in January 2007 China carried out a anti-satellite missile test that "demonstrated its ability to destroy satellites in low-Earth orbit."

"Accordingly, prudence demands that we anticipate that future conflicts could involve kinetic and non-kinetic (e.g. jamming, laser 'dazzling') attacks on space-based surveillance, communications, and other assets," the report said.

Those references were omitted from the final report, dated Jan. 26 and made public Feb. 1.

Another key omission from the Obama administration QDR was any reference to China being a major competitor of the United States. The 2006 report stated that China "has the greatest potential to compete militarily" with the U.S.

Both the December draft and the final version contained references to excessive Chinese secrecy about the "pace, scope, and ultimate aims of its military modernization programs."…

Mr. Morrell, the Pentagon spokesman, defended the QDR's treatment of China, noting that "the QDR provides a clear-eyed assessment of both the challenges and the opportunities that China presents for the United States and the international community in the twenty-first century."

Mr. Morrell then said, quoting President Obama, that U.S.-China relations involved both cooperation and competition. "And we are under no illusions about the potential challenges presented by China's growing military capabilities," he said. "That is precisely why the QDR identifies trends that we believe may be potentially destabilizing and why we have repeatedly pushed China for greater strategic transparency and openness." The QDR, along with the forthcoming annual report on China's military power, due out next month, "provide a fair, unbiased, and comprehensive assessment."

A defense official familiar with the QDR deliberations said the deletion was due to pressure from Obama administration officials who fear angering Beijing.

Chinese Foreign Ministry spokesman Ma Zhaoxu said in Beijing Feb. 2 that the QDR made "irresponsible" statements about China's military buildup. However, a military commentator, Li Shuisheng, from the Academy of Military Science, stated Feb. 12 that the QDR downgraded the Pentagon's view of the threat posed by China from that of a global rival to a regional problem more akin to North Korea and Iran.

John J. Tkacik, a former State Department China specialist, said the changes were probably ordered by the White House.

"By removing references to the breathtaking advances in China's weaponry and technologies, the White House is basically ordering the Pentagon not to consider them in the planning or budgeting stages," Mr. Tkacik said.

It is a mistake, Mr. Tkacik said, to leave out references on the need for prudence in dealing with China, and instead focus on welcoming China's increasing role in world affairs.

> "By doing so, the White House national security staff enjoins the military from either planning for, or budgeting for, a future confrontation with China," he said.
>
> "That places foolhardy trust in China's future goodwill, especially given Beijing's cynical support of Iran, North Korea and other American adversaries, and its territorial clashes with Japan, India, Taiwan and other American friends," he said.[79]

Independent Panel Assessment of 2010 QDR

The law that requires DOD to perform Quadrennial Defense Reviews (10 U.S.C. 118) states that the results of each QDR shall be assessed by an independent panel. The report of the independent panel that assessed the 2010 QDR was released on July 29, 2010. The independent panel's report recommends a Navy of 346 ships (about 10% more than the Navy's planned 313-ship fleet), including 11 aircraft carriers (the same number as in the Navy's 313-ship plan) and 55 attack submarines (compared to 48 in the Navy's 313-ship plan).[80] The report states the following, among other things:

- "The QDR should reflect current commitments, but it must also plan effectively for potential threats that could arise over the next 20 years.… we believe the 2010 QDR did not accord sufficient priority to the need to counter anti-access challenges, strengthen homeland defense (including our defense against cyber threats), and conduct post-conflict stabilization missions." (Page 54)
- "In this remarkable period of change, global security will still depend upon an American presence capable of unimpeded access to all international areas of the Pacific region. In an environment of 'anti-access strategies,' and assertions to create unique 'economic and security zones of influence,' America's rightful and historic presence will be critical. To preserve our interests, the United States will need to retain the ability to transit freely the areas of the Western Pacific for security and economic reasons. Our allies also depend on us to be fully present in the Asia-Pacific as a promoter of stability and to ensure the free flow of commerce. A robust U.S. force structure, largely rooted in maritime strategy but including other necessary capabilities, will be essential." (Page 51)
- "The United States will need agile forces capable of operating against the full range of potential contingencies. However, the need to deal with irregular and hybrid threats will tend to drive the size and shape of ground forces for years to come, whereas the need to continue to be fully present in Asia and the Pacific and other areas of interest will do the same for naval and air forces." (Page 55)
- "The force structure in the Asia-Pacific needs to be increased. In order to preserve U.S. interests, the United States will need to retain the ability to transit freely the areas of the Western Pacific for security and economic reasons. The United States must be fully present in the Asia-Pacific region to protect American lives and territory, ensure the free flow of commerce, maintain stability, and defend our allies in the region. A robust U.S. force structure, one that is largely

[79] Item entitled "QDR soft on China, in Bill Gertz, "Inside the Ring," *Washington Times*, February 18, 2010: 8.

[80] Stephen J. Hadley and William J. Perry, co-chairmen, et al., *The QDR in Perspective: Meeting America's National Security Needs In the 21st Century, The Final Report of the Quadrennial Defense Review Independent Panel*, Washington, 2010, Figure 3-2 on page 58.

rooted in maritime strategy and includes other necessary capabilities, will be essential." (Page 66)

- "Force structure must be strengthened in a number of areas to address the need to counter anti-access challenges, strengthen homeland defense (including defense against cyber threats), and conduct post-conflict stabilization missions: First, as a Pacific power, the U.S. presence in Asia has underwritten the regional stability that has enabled India and China to emerge as rising economic powers. The United States should plan on continuing that role for the indefinite future. The Panel remains concerned that the QDR force structure may not be sufficient to assure others that the United States can meet its treaty commitments in the face of China's increased military capabilities. Therefore, we recommend an increased priority on defeating anti-access and area-denial threats. This will involve acquiring new capabilities, and, as Secretary Gates has urged, developing innovative concepts for their use. Specifically, we believe the United States must fully fund the modernization of its surface fleet. We also believe the United States must be able to deny an adversary sanctuary by providing persistent surveillance, tracking, and rapid engagement with high-volume precision strike. That is why the Panel supports an increase in investment in long-range strike systems and their associated sensors. In addition, U.S. forces must develop and demonstrate the ability to operate in an information-denied environment." (Pages 59-60)
- "To compete effectively, the U.S. military must continue to develop new conceptual approaches to dealing with operational challenges, like the Capstone Concept for Joint Operations (CCJO). The Navy and Air Force's effort to develop an Air-Sea Battle concept is one example of an approach to deal with the growing anti-access challenge. It will be necessary to invest in modernized capabilities to make this happen. The Chief of Naval Operations and Chief of Staff of the Air Force deserve support in this effort, and the Panel recommends the other military services be brought into the concept when appropriate." (Page 51; a similar passage appears on page 67)

Potential Implications for U.S. Navy Programs

What are the potential Navy-related program implications of placing a relatively strong emphasis on countering improved Chinese military forces in coming years?

Potential Implications in General

A decision to place a relatively strong defense-planning emphasis on countering improved Chinese military forces in coming years could lead to one more of the following:

- developing and procuring highly capable ships, aircraft, weapons, and supporting C4ISR systems for defeating Chinese anti-access systems;
- assigning a larger percentage of the Navy to the Pacific Fleet (and, as a result, a smaller percentage to the Atlantic Fleet);
- homeporting more of the Pacific Fleet's ships at forward locations such as Hawaii, Guam, and Japan;

- increasing training and exercises in operations relating to countering Chinese maritime anti-access forces, such as antisubmarine warfare (ASW) operations; and
- increasing activities for monitoring and understanding developments in China's navy, as well as activities for measuring and better understanding operating conditions in the Western Pacific.

Actions Already Taken

The U.S. Navy and (for sea-based ballistic missile defense programs) the Missile Defense Agency (MDA) have taken a number of steps in recent years that appear intended, at least in part, at improving the U.S. Navy's ability to counter Chinese maritime anti-access capabilities, including but not limited to the following:

- increasing antisubmarine warfare (ASW) training for Pacific Fleet forces;
- shifting three Pacific Fleet Los Angeles (SSN-688) class SSNs to Guam;
- basing all three Seawolf (SSN-21) class submarines—the Navy's largest and most heavily armed SSNs—in the Pacific Fleet (at Kitsap-Bremerton, WA);
- basing two of the Navy's four converted Trident cruise missile/special operations forces submarines (SSGNs) in the Pacific (at Bangor, WA);[81]
- assigning most of the Navy's ballistic missile defense (BMD)-capable Aegis cruisers and destroyers to the Pacific—and homeporting some of those ships at Yokosuka, Japan, and Pearl Harbor, HI;
- expanding the planned number of BMD-capable ships from three Aegis cruisers and 15 Aegis destroyers to 10 Aegis cruisers and *all* Aegis destroyers;[82] and
- increasing the planned procurement quantity of SM-3 BMD interceptor missiles.

In addition, the Navy's July 2008 proposal to stop procurement of Zumwalt (DDG-1000) class destroyers and resume procurement of Arleigh Burke (DDG-51) class Aegis destroyers can be viewed as having been prompted in large part by Navy concerns over its ability to counter China's maritime anti-access capabilities. The Navy stated that this proposal was driven by a change over the last two years in the Navy's assessment of threats that U.S. Navy forces will face in coming years from ASCMs, ballistic missiles, and submarines operating in blue waters. Although the Navy in making this proposal did not highlight China by name, the Navy's references to ballistic missiles and to submarines operating in blue waters can be viewed, at least in part, as a reference to Chinese ballistic missiles (including ASBMs) and Chinese submarines. (In discussing ASCMs, the Navy cited a general proliferation of ASCMs to various actors, including the Hezbollah organization.)[83]

[81] For more on the SSGNs, see CRS Report RS21007, *Navy Trident Submarine Conversion (SSGN) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[82] For further discussion, see CRS Report RL33745, *Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress*, by Ronald O'Rourke

[83] For further discussion, see CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.

Acquiring Highly Capable Ships, Aircraft, Weapons, and Supporting C4ISR Systems

Ships

Placing a strong emphasis on countering Chinese maritime anti-access capabilities could involve maintaining or increasing funding for procurement of Ford (CVN-78) class aircraft carriers,[84] Virginia (SSN-774) class attack submarines,[85] and Arleigh Burke (DDG-51) class Aegis destroyers, including the new Flight III version of the DDG-51, which is to be equipped with a new radar for improved air and missile defense operations. The Navy wants to starting procuring the Flight III version in FY2016.[86] An emphasis on acquiring highly capable ships could also involve maintaining or increasing funding for adding a BMD capability to existing Aegis cruisers and destroyers,[87] and for procuring future Virginia-class attack submarines with an enhanced strike capability.

Some observers, viewing the anti-access aspects of China's naval modernization effort, including ASBMs, ASCMs, and other anti-ship weapons, have raised the question of whether the U.S. Navy should respond by shifting over time to a more highly distributed fleet architecture featuring a reduced reliance on carriers and other large ships and an increased reliance on smaller ships. Supporters of this option argue that such an architecture could generate comparable aggregate fleet capability at lower cost and be more effective at confounding Chinese maritime anti-access capabilities. Skeptics, including supporters of the currently planned fleet architecture, question both of these arguments.[88]

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[84] For more on the CVN-78 program, see CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke.

[85] For more on the Virginia-class program, see CRS Report RL32418, *Navy Virginia (SSN-774) Class Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

[86] For more on the DDG-51 program, including the planned Flight III version, see CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.

[87] For more on the program to add a BMD capability to existing Aegis cruisers and destroyers, see CRS Report RL33745, *Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[88] The question of whether the U.S. Navy concentrates too much of its combat capability in a relatively small number of high-value units, and whether it should shift over time to a more highly distributed fleet architecture, has been debated at various times over the years, in various contexts. Much of the discussion concerns whether the Navy should start procuring smaller aircraft carriers as complements or replacements for its current large aircraft carriers.

Supporters of shifting to a more highly distributed fleet architecture argue that that the Navy's current architecture, including its force of 11 large aircraft carriers, in effect puts too many of the Navy's combat-capability eggs into a relatively small number of baskets on which an adversary can concentrate its surveillance and targeting systems and its anti-ship weapons. They argue that although a large Navy aircraft carrier can absorb hits from multiple conventional weapons without sinking, a smaller number of enemy weapons might cause damage sufficient to stop the carrier's aviation operations, thus eliminating the ship's primary combat capability and providing the attacker with what is known as a "mission kill." A more highly distributed fleet architecture, they argue, would make it more difficult for China to target the Navy and reduce the possibility of the Navy experiencing a significant reduction in combat capability due to the loss in battle of a relatively small number of high-value units.

Opponents of shifting to a more highly distributed fleet architecture argue that large carriers and other large ships are not only more capable, but proportionately more capable, than smaller ships, that larger ships are capable of fielding highly capable systems for defending themselves, and that they are much better able than smaller ships to withstand the effects of enemy weapons, due to their larger size, extensive armoring and interior compartmentalization, and extensive damage-control systems. A more highly distributed fleet architecture, they argue, would be less capable or more (continued...)

Aircraft

Placing a strong emphasis on countering Chinese maritime anti-access capabilities could also involve maintaining or increasing funding for a variety of naval aviation acquisition programs, including F/A-18E/F Super Hornet strike fighters and EA-18G Growler electronic attack aircraft,[89] F-35C carrier-based Joint Strike Fighters (JSFs),[90] E-2D Hawkeye early warning and command and control aircraft, the P-8A Multi-mission Maritime Aircraft (MMA), and the Navy Unmanned Combat Air System (N-UCAS program) program.[91]

Weapons and Systems for Countering ASBMs

Countering China's projected ASBMs could involve operating Navy surface ships in ways that make it more difficult for China to detect and track those ships, and acquiring weapons and systems for disabling or jamming China's long-range maritime surveillance and targeting systems, for attacking ASBM launchers, for destroying ASBMs in various stages of flight, and for decoying and confusing ASBMs as they approach their intended targets. Regarding destroying ASBMs in flight, options include developing and procuring improved versions of the SM-3 BMD interceptor missile (including the planned Block IIA version of the SM-3), accelerating the

(...continued)

expensive than today's fleet architecture. Opponents of shifting to a more highly distributed fleet architecture argue could also argue that the Navy has already taken an important (but not excessive) step toward fielding a more distributed fleet architecture through its plan to acquire 55 Littoral Combat Ships (LCSs), which are small, fast surface combatants with modular, "plug-and-flight" mission payloads. (For more on the LCS program, see CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background, Issues, and Options for Congress*, by Ronald O'Rourke.)

The issue of Navy fleet architecture, including the question of whether the Navy should shift over time to a more highly distributed fleet architecture, was examined in a report by DOD's Office of Force Transformation (OFT) that was submitted to Congress in 2005. OFT's report, along with two other reports on Navy fleet architecture that were submitted to Congress in 2005, are discussed at length in CRS Report RL33955, *Navy Force Structure: Alternative Force Structure Studies of 2005—Background for Congress*, by Ronald O'Rourke. The functions carried out by OFT have since been redistributed to other DOD offices. See also Wayne P. Hughes, Jr., *The New Navy Fighting Machine: A Study of the Connections Between Contemporary Policy, Strategy, Sea Power, Naval Operations, and the Composition of the United States Fleet*, Monterey (CA), Naval Postgraduate School, August 2009, 68 pp.

[89] For more on the F/A-18E/F and EA-18G programs, see CRS Report RL30624, *Navy F/A-18E/F and EA-18G Aircraft Procurement and Strike Fighter Shortfall: Background and Issues for Congress*, by Jeremiah Gertler.

[90] For more on the F-35 program, see CRS Report RL30563, *F-35 Joint Strike Fighter (JSF) Program: Background and Issues for Congress*, by Jeremiah Gertler.

[91] The Navy is currently developing a stealthy, long-range, unmanned combat air system (UCAS) for use in the Navy's carrier air wings. The demonstration program for the system is called UCAS-D. The subsequent production version of the aircraft is called N-UCAS, with the N standing for Navy. Some observers, including analysts at the Center for Strategic and Budgetary Assessments (CSBA), believe that N-UCAS would be highly useful, if not critical, for countering improved Chinese maritime military forces. N-UCASs, they argue, could be launched from a carrier shortly after the ship leaves port in Hawaii, be refueled in flight, and arrive in the Taiwan Strait area in a matter of hours, permitting the carrier air wing to contribute to U.S. operations there days before the carrier itself would arrive. They also argue that N-UCASs would permit Navy carriers to operate effectively while remaining outside the reach of China's anti-access weapons, including ASBMs. (Thomas P. Ehrhard and Robert O. Work, *The Unmanned Combat Air System Carrier Demonstration Program: A New Dawn For Naval Aviation?*, Center for Strategic and Budgetary Assessments, Washington, 2007. 39 pp. [CSBA Backgrounder, May 10, 2007]. The authors briefed key points from this document on July 11, 2007, in room S-211 of the Capitol.) Another observer states that China's deployment of ASBM's and supporting surveillance and targeting systems "argues for a stealth long-range attack aircraft as part of the [carrier] airwing to provide more flexibility on how we employ our carriers." (James Lyons, "China's One World?" *Washington Times*, August 24, 2008: B1).

acquisition of the planned successor to the SM-2 Block IV terminal-phase BMD interceptor, [92] and accelerating development and deployment of shipboard high-power free electron lasers (FELs) and solid state lasers (SSLs). Regarding decoying and confusing ASBMs as they approach their intended targets, one option that has been discussed is equipping ships with systems for generating radar-opaque smoke clouds, so as to confuse an ASBM's terminal-guidance radar.[93]

Weapons and Systems for Countering Submarines

Countering China's attack submarines more effectively could involve developing technologies for achieving a distributed, sensor-intensive (as opposed to platform-intensive) approach to ASW. Navy officials in 2004-2005 spoke of their plans for achieving such an architecture.[94] Such an approach might involve the use of networked sensor fields, unmanned vehicles, and standoff weapons. Implementing such an approach to ASW reportedly would require overcoming some technical challenges, particularly for linking together large numbers of distributed sensors, some of which might be sonobuoys as small as soda cans.[95] Countering wake-homing torpedoes more effectively could require completing development work on the Navy's new anti-torpedo torpedo (ATT) and putting the weapon into procurement.

Increasing the Pacific Fleet's Share of the Navy

The final report on the 2005 Quadrennial Defense Review (QDR) directed the Navy "to adjust its force posture and basing to provide at least six operationally available and sustainable carriers and 60% of its submarines in the Pacific to support engagement, presence and deterrence."[96] The Navy has met the 2005 QDR directive of having six CVNs in the Pacific. As of December 31, 2009, 57% of the Navy's SSNs and SSGNs were homeported in the Pacific. The Navy can increase that figure to 60% by assigning newly commissioned Virginia-class SSNs to the Pacific, by moving SSNs or SSGNs from the Atlantic to the Pacific, by decommissioning Atlantic Fleet SSNs, or through some combination of these actions.

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[92] For more on the SM-3, including the Block IIA version, and the planned successor to the SM-2 Block IV, see CRS Report RL33745, *Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[93] Thomas J. Culora, "The Strategic Implications of Obscurants," *Naval War College Review*, Summer 2010: 73-84. For an additional discussion of options for countering ASBMs, see Sam J. Tangredi, "No Game Changer for China," *U.S. Naval Institute Proceedings*, February 2010: 24-29. See also Craig Hooper and Christopher Albon, "Get Off the Fainting Couch," *U.S. Naval Institute Proceedings*, April 2010: 42- 47.

[94] See, for example, Otto Kreisher, "As Underwater Threat Re-Emerges, Navy Renews Emphasis On ASW," *Seapower*, October 2004, p. 15, and Jason Ma, "ASW Concept Of Operations Sees 'Sensor-Rich' Way Of Fighting Subs," *Inside the Navy*, February 7, 2005.

[95] Jason Ma, "Autonomous ASW Sensor Field Seen As High-Risk Technical Hurdle," *Inside the Navy*, June 6, 2005. See also Jason Ma, "Navy's Surface Warfare Chief Cites Progress In ASW Development," *Inside the Navy*, January 17, 2005. More recent press reports discuss research on ASW concepts involving bottom-based sensors and unmanned vehicles; see Richard Scott, "GLINT In the Eye: NURC Explores Novel Autonomous Concepts For Future ASW," *Jane's International Defence Review*, January 2010: 34-35; Richard Scott, "DARPA Goes Deep With ASW Sensor Network," *Jane's International Defence Review*, March 2010: 13; Richard Scott, "Ghost In The Machine: DARPA Sets Course Towards Future Unmanned ASW Trail Ship," *Jane's Navy International*, April 2010: 10-11.

[96] U.S. Department of Defense, *Quadrennial Defense Review Report*. Washington, 2006. (February 6, 2006) p. 47.

As part of a "strategic laydown analysis" that the Navy performed in support of its January 2009 proposal to transfer a nuclear-powered aircraft carrier (CVN) to Mayport, FL,[97] the Navy projected that of its planned 313-ship fleet, 181 ships, or 58%, would be assigned to the Pacific Fleet.[98]

Placing a strong emphasis on countering Chinese maritime anti-access capabilities could involve assigning a greater percentage of the Navy to the Pacific Fleet than the percentages reflected in the previous two paragraphs. Doing this would likely reduce the number of ships assigned to the Atlantic Fleet, which would reduce the Navy's ability to maintain forward deployments in, and surge ships quickly to, the Mediterranean Sea and possibly also the Persian Gulf/Northern Arabian Sea area.[99]

Homeporting Additional Pacific Fleet Ships in Forward Locations

Navy ships homeported in Japan include an aircraft carrier strike group consisting of a CVN and 11 cruisers, destroyers, and frigates; an amphibious ready group consisting of three amphibious ships; and additional mine countermeasures ships. Navy ships homeported at Guam include three Los Angeles (SSN-688) class attack submarines and a submarine tender. Navy ships homeported in Hawaii include 15 Virginia (SSN-774) and Los Angles class SSNs, and 11 cruisers, destroyers, and frigates.

Placing a strong emphasis on countering Chinese maritime anti-access capabilities could involve homeporting more of the Pacific Fleet's ships at forward locations such as Hawaii, Guam, and Japan. A 2002 Congressional Budget Office (CBO) report discussed the option of homeporting a total of as many as 11 SSNs at Guam.[100] Additional cruisers and destroyers could be homeported in Hawaii, Guam, or Japan. Another option, at least in theory, would be to establish additional home ports for Navy ships in Singapore or Australia.

[97] For more on this proposal, see CRS Report R40248, *Navy Nuclear Aircraft Carrier (CVN) Homeporting at Mayport: Background and Issues for Congress*, by Ronald O'Rourke.

[98] Source: Slide entitled "Strategic Laydown Summary," in Navy briefing entitled "Final Environmental Impact Statement (FEIS) for the Proposed Homeporting of Additional Surface Ships at Naval Station Mayport, FL, dated November 18, 2008, and presented to CRS on December 5, 2008. For more on the Navy's proposed 313-ship fleet, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

[99] Shifting additional ships from the Atlantic Fleet to the Pacific Fleet might reduce the Navy's ability to maintain forward deployments in, and surge ships quickly to, the Persian Gulf/Northern Arabian Sea area because the transit distance from the U.S. Atlantic Coast to the Persian Gulf/Northern Arabian Sea area using the Suez canal is less than the transit distance from the U.S. Pacific Coast to the Persian Gulf/Northern Arabian Sea area. If, however, the ships shifted from the Atlantic Fleet to the Pacific Fleet were homeported at Hawaii, Guam, or Japan rather than on the U.S. Pacific Coast, there might be no reduction in the Navy's ability to maintain forward deployments in, and surge ships quickly to, the Persian Gulf/Northern Arabian Sea area.

[100] U.S. Congressional Budget Office, *Increasing the Mission Capability of the Attack Submarine Force*, Washington, CBO, 2002. (A CBO Study, March 2002), 41 pp.

Submission to Congress of 2010 Edition of DOD Report on China Military and Security Developments

Section 1202 of the FY2000 defense authorization act (S. 1059/P.L. 106-65 of October 5, 1999), as amended by Section 1246 of the FY2010 defense authorization act (H.R. 2647/P.L. 111-84 of October 28, 2009), requires DOD to submit an annual report to Congress on military and security developments involving China. (The report was previously known as the report on Chinese military power.) DOD is required to submit the report not later than March 1 each year. As of July 23, 2010, the 2010 edition of the report had not been submitted to Congress.

On July 23, 2010, Senators John Cornyn, John McCain, James Risch, Pat Roberts, and James Inhofe sent a letter to Secretary of Defense Robert Gates concerning the submission to Congress of the 2010 edition of the report. The letter states in part:

> With the [2010 edition of the] Chinese military power report now almost five months overdue, we ask that you submit it to Congress immediately and provide an explanation as to the significant delay. It is our understanding that a draft of the report was completed within the DoD several months ago. If true, the lengthy delay is puzzling. Since the responsibility for this report lies with the DoD alone, we ask for your assurance that White House political appointees at the National Security Council of other agencies have not been allowed to alter the substance of the report in an effort to avoid the prospect of angering China. The annual report is designed to provide Congress with a candid, objective assessment of the facts. Anything less would risk undermining its very credibility….
>
> With these concerns in mind, we request that you submit the 2010 Report on the Military Power of the People's Republic of China to Congress as quickly as possible. Continued delay would further hinder Congress' ability to fully understand the potential threat that China's rapidly expanding military poses to U.S. national security.[101]

Legislative Activity for FY2011

FY2011 Defense Authorization Bill (H.R. 5136/S. 3454)

House

Section 1060 of the FY2011 defense authorization bill (H.R. 5136) as reported by the House Armed Services Committee (H.Rept. 111-491 of May 21, 2010) states that:

> The Secretary of Defense shall, in consultation with the Joint Chiefs of Staff and the commanders of the regional combatant commands, submit to the congressional defense

[101] Letter dated July 23, 2010, from Senators John Cornyn, John McCain, James Risch, Pat Roberts, and James Inhofe, to Secretary of Defense Reobert Gates, available online at http://www.foreignpolicy.com/files/fp_uploaded_documents/100723_SJC%20letter%20to%20SECDEF%20re%20%20late%20Chinese%20military%20power%20report%20%28JULY%202010%29%20-%20signed%20scanned.pdf. See also Bill Gertz, "Senators Rap Pentagon's Delay On China Report, *Washington Times*, July 26, 2010: 8; Wendell Minnick, "U.S. Senators Demand DoD Release China Report," *DefenseNews.com*, July 24, 2010; Josh Rogin, "Where Is The Pentagon Report On The Chinese Military?" *The Cable (thecable.foreignpolicy.com)*, July 23, 1020.

> committees, not later than March 15, 2011, a comprehensive strategic assessment of the current and future strategic challenges posed to the United States by potential competitors out through 2021, with particular attention paid to those challenges posed by the military modernization of the People's Republic of China, Iran, North Korea, and Russia.

In discussing Section 1060, the committee's report states:

> The committee notes that it received testimony from the Quadrennial Defense Review (QDR) Independent Panel that, although useful, the QDR needs to be a long-term, twenty year study that addresses the issues that are of concern to Congress. The committee also received testimony that the 2010 QDR was a budget constrained exercise, which was fiscally responsible but may have limited more ambitious questioning of assumptions and creative thinking because basic budget and end-strength assumptions were not challenged. (page 372)

Section 1234 of H.R. 5136 as reported by the committee would require a report on U.S. efforts to defend against any threats posed by the advanced anti-access capabilities of potentially hostile foreign countries, and amend the law that requires DOD to submit an annual report on military and security developments involving China to include a section on China's anti-access and area denial capabilities. The text of Section 1234 is as follows:

> SEC. 1234. REPORT ON UNITED STATES EFFORTS TO DEFEND AGAINST THREATS POSED BY THE ADVANCED ANTI-ACCESS CAPABILITIES OF POTENTIALLY HOSTILE FOREIGN COUNTRIES.
>
> (a) Congressional Finding- Congress finds that the report of the 2010 Department of Defense Quadrennial Defense Review finds that `Anti-access strategies seek to deny outside countries the ability to project power into a region, thereby allowing aggression or other destabilizing actions to be conducted by the anti-access power. Without dominant capabilities to project power, the integrity of U.S. alliances and security partnerships could be called into question, reducing U.S. security and influence and increasing the possibility of conflict.'.
>
> (b) Sense of Congress- It is the sense of Congress that, in light of the finding in subsection (a), the Secretary of Defense should ensure that the United States has the appropriate authorities, capabilities, and force structure to defend against any threats posed by the advanced anti-access capabilities of potentially hostile foreign countries.
>
> (c) Report- Not later than April 1, 2011, the Secretary of Defense shall submit to the Committees on Armed Services of the Senate and the House of Representatives a report on United States efforts to defend against any threats posed by the advanced anti-access capabilities of potentially hostile foreign countries.
>
> (d) Matters to Be Included- The report required under subsection (c) shall include the following:
>
> (1) An assessment of any threats posed by the advanced anti-access capabilities of potentially hostile foreign countries, including an identification of the foreign countries with such capabilities, the nature of such capabilities, and the possible advances in such capabilities over the next 10 years.
>
> (2) A description of any efforts by the Department of Defense since the release of the 2010 Quadrennial Defense Review to address the finding in subsection (a).
>
> (3) A description of the authorities, capabilities, and force structure that the United States may require over the next 10 years to address the finding in subsection (a).

(e) Form- The report required under subsection (c) shall be submitted in unclassified form, but may contain a classified annex if necessary.

(f) Modification of Other Reports-

(1) CONCERNING THE PEOPLE'S REPUBLIC OF CHINA- Section 1202(b) of the National Defense Authorization Act for Fiscal Year 2000 (P.L. 106-65; 113 Stat. 781; 10 U.S.C. 113 note), as most recently amended by section 1246 of the National Defense Authorization Act for Fiscal Year 2010 (P.L. 111-84; 123 Stat. 2544), is further amended—

(A) by redesignating paragraphs (10) through (12) as paragraphs (11) through (13), respectively; and

(B) by inserting after paragraph (9) the following:

`(10) Developments in China's anti-access and area denial capabilities.'.

(2) CONCERNING IRAN- Section 1245(b) of the National Defense Authorization Act for Fiscal Year 2010 (P.L. 111-84; 123 Stat. 2542) is amended by adding at the end the following:

`(5) A description and assessment of Iran's anti-access and area denial strategy and capabilities.'.

In discussing Section 1234, the committee's report states:

> For the purposes of this section, to the extent possible, the committee encourages the Department to utilize information provided to Congress in the Annual Report on Military and Security Developments Involving the People's Republic of China, required by section 1201 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65), as most recently amended by section 1246 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84;) and the Annual Report on the Military Power of Iran as required by Section 1245 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84). (Page 395)

The committee's report also states:

> Annual Report on Security Developments Involving the People's Republic of China
>
> Section 1246 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) expanded the scope of the Annual Department of Defense Report on the Military Power of the People's Republic of China to include information on developments regarding U.S. engagement and cooperation with China on security matters, including through military-to-military contacts, and the U.S. strategy for such engagement and cooperation in the future. The report was due on March 1, 2010. The committee is disappointed that the report has not been delivered, as the information provided by the Administration in this report will inform the committee's assessments on a range of critical matters involving China. The committee requests that the Department of Defense submit the report to the committee at the earliest possible date, and in the interim, provide the committee with complete and timely information on all significant security developments involving China. (Page 382)

Senate

Section 1064 of the FY2011 defense authorization bill (S. 3454) as reported by the Senate Armed Services Committee (S.Rept. 111-201 of June 4, 2010) would require a report on U.S. efforts to defend against any potential future threats posed by the anti-access and area-denial capabilities of potentially hostile nation-states. The text of Section 1064 is as follows:

> SEC. 1064. REPORT ON UNITED STATES EFFORTS TO DEFEND AGAINST THREATS POSED BY THE ANTI-ACCESS AND AREA-DENIAL CAPABILITIES OF CERTAIN NATION-STATES.
>
> (a) Finding- Congress finds that the 2010 report on the Department of Defense Quadrennial Defense Review concludes that `[a]nti-access strategies seek to deny outside countries the ability to project power into a region, thereby allowing aggression or other destabilizing actions to be conducted by the anti-access power. Without dominant capabilities to project power, the integrity of United States alliances and security partnerships could be called into question, reducing United States security and influence and increasing the possibility of conflict'.
>
> (b) Sense of Congress- It is the sense of Congress that, in light of the finding in subsection (a), the Secretary of Defense should ensure that the United States has the appropriate authorities, capabilities, and force structure to defend against any potential future threats posed by the anti-access and area-denial capabilities of potentially hostile foreign countries.
>
> (c) Report- Not later than February 1, 2011, the Secretary of Defense shall submit to the Committees on Armed Services of the Senate and the House of Representatives a report on United States efforts to defend against any potential future threats posed by the anti-access and area-denial capabilities of potentially hostile nation-states.
>
> (d) Elements- The report required under subsection (c) shall include the following:
>
> (1) An assessment of any potential future threats posed by the anti-access and area-denial capabilities of potentially hostile foreign countries, including an identification of the foreign countries with such capabilities, the nature of such capabilities, and the possible advances in such capabilities over the next 10 years.
>
> (2) A description of any efforts by the Department of Defense to address the potential future threats posed by the anti-access and area-denial capabilities of potentially hostile foreign countries.
>
> (3) A description of the authorities, capabilities, and force structure that the United States may require over the next 10 years to address the threats posed by the anti-access and area-denial capabilities of potentially hostile foreign countries.
>
> (e) Form- The report required under subsection (c) shall be submitted in unclassified form, but may contain a classified annex if necessary.
>
> (f) Definitions- In this section:
>
> (1) The term `anti-access', with respect to capabilities, means any action that has the effect of slowing the deployment of friendly forces into a theater, preventing such forces from operating from certain locations within that theater, or causing such forces to operate from distances farther from the locus of conflict than such forces would normally prefer.

(2) The term `area-denial', with respect to capabilities, means operations aimed to prevent freedom of action of friendly forces in the more narrow confines of the area under a potentially hostile nation-state's direct control, including actions by an adversary in the air, on land, and on and under the sea to contest and prevent joint operations within a defended battlespace.

Regarding Section 1064, the committee's report states:

Report on United States efforts to defend against threats posed by the anti-access and area-denial capabilities of certain nation-states (sec. 1064)

The committee recommends a provision that would require the Secretary of Defense, not later than February 1, 2011, to submit to the Committee on Armed Services of the Senate and the House of Representatives a report on the Department's efforts to defend against threats posed by the anti-access and area-denial capabilities of potentially hostile nation states. The report should include a description of any efforts by the Department to address findings in the 2010 Quadrennial Defense Review Report regarding advanced anti-access capabilities of foreign countries. The report should also include a discussion of current and future U.S. long-range strike capabilities in the context of countering anti-access and area-denial strategies.

The committee is concerned by the emergence of what the 2010 Quadrennial Defense Review Report described as "anti-access strategies [that] seek to deny outside countries the ability to project power into a region, thereby allowing aggression or other destabilizing actions to be conducted by the anti-access power." The committee believes it is essential that the U.S. Armed Forces maintain the capability to project power globally in light of growing anti-access challenges. The global presence and reach of U.S. forces protects U.S. interests, provides stability and reassures our many allies and security partners. The committee expects that as anti-access threats emerge, the United States will develop the necessary capabilities and security partnerships, to meet those threats.

In this regard, the committee notes that the U.S. Navy and U.S. Air Force have initiated a dialogue addressing means by which our air and naval forces may more effectively work together in the face of anti-access challenges. The committee encourages the Chief of Naval Operations and Air Force Chief of Staff to work together with the purpose of overcoming emergent anti-access challenges.

Additionally, the committee notes its displeasure that the Department of Defense has failed to submit the Annual Report on the Military and Security Developments involving the People's Republic of China, as required by Section 1202 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65) by the statutory deadline of March 1. The timely submission of this report is required by law, and the committee expects it to be presented to Congress as required. (Pages 194-195)

Appendix A. Prior-Year Legislative Activity

FY2010

FY2010 Defense Authorization Act (H.R. 2647/P.L. 111-84)

House

The House Armed Services Committee, in its report (H.Rept. 111-166 of June 18, 2009) on H.R. 2647, states:

> The committee welcomes recent positive exchanges between the navies of the U.S. and the People's Republic of China. Such exchanges are particularly important given the harassment of an unarmed U.S. ship, the U.S.N.S. Impeccable, by Chinese ships in international waters on March 8, 2009. This incident violated China's requirement under international law to operate with due regard for the rights and safety of other lawful users of the sea.
>
> The committee urges more U.S.-China engagement and cooperation on maritime issues of mutual concern. The committee also supports the Administration's call for Chinese ships to act responsibly and refrain from provocative activities that could lead to miscalculation or a collision at sea, endangering vessels and the lives of U.S. and Chinese mariners. (Pages 412-413)

Section 1233 of H.R. 2647 would amend the current statute requiring DOD to submit an annual report to Congress on China's military power. The text of Section 1233 is as follows:

> SEC. 1233. ANNUAL REPORT ON MILITARY AND SECURITY DEVELOPMENTS INVOLVING THE PEOPLE'S REPUBLIC OF CHINA.
>
> (a) Annual Report- Subsection (a) of section 1202 of the National Defense Authorization Act for Fiscal Year 2000 (P.L. 106-65; 113 Stat. 781; 10 U.S.C. 113 note) is amended—
>
> (1) in the first sentence, by striking `on the current and future military strategy of the People's Republic of China' and inserting `on military and security developments involving the People's Republic of China';
>
> (2) in the second sentence—
>
> (A) by striking `on the People's Liberation Army' and inserting `of the People's Liberation Army'; and
>
> (B) by striking `Chinese grand strategy, security strategy,' and inserting `Chinese security strategy'; and
>
> (3) by adding at the end the following new sentence: `The report shall also address United States-China engagement and cooperation on security matters during the period covered by the report, including through United States-China military-to-military contacts, and the United States strategy for such engagement and cooperation in the future.'.

(b) Matters to Be Included- Subsection (b) of such section, as amended by section 1263 of the National Defense Authorization Act for Fiscal Year 2008 (P.L. 110-181; 122 Stat. 407), is further amended—

(1) in paragraph (1)—

(A) by striking `goals of' inserting `goals and factors shaping'; and

(B) by striking `Chinese grand strategy, security strategy,' and inserting `Chinese security strategy';

(2) by amending paragraph (2) to read as follows:

`(2) Trends in Chinese security and military behavior that would be designed to achieve, or that are inconsistent with, the goals described in paragraph (1).';

(3) in paragraph (6)—

(A) by inserting `and training' after `military doctrine'; and

(B) by striking `, focusing on (but not limited to) efforts to exploit a transformation in military affairs or to conduct preemptive strikes'; and

(4) by adding at the end the following new paragraphs:

`(10) In consultation with the Secretary of Energy and the Secretary of State, developments regarding United States-China engagement and cooperation on security matters.

`(11) The current state of United States military-to-military contacts with the People's Liberation Army, which shall include the following:

`(A) A comprehensive and coordinated strategy for such military-to-military contacts and updates to the strategy.

`(B) A summary of all such military-to-military contacts during the period covered by the report, including a summary of topics discussed and questions asked by the Chinese participants in those contacts.

`(C) A description of such military-to-military contacts scheduled for the 12-month period following the period covered by the report and the plan for future contacts.

`(D) The Secretary's assessment of the benefits the Chinese expect to gain from such military-to-military contacts.

`(E) The Secretary's assessment of the benefits the Department of Defense expects to gain from such military-to-military contacts, and any concerns regarding such contacts.

`(F) The Secretary's assessment of how such military-to-military contacts fit into the larger security relationship between the United States and the People's Republic of China.

`(12) Other military and security developments involving the People's Republic of China that the Secretary of Defense considers relevant to United States national security.'.

(c) Conforming Amendment- Such section is further amended in the heading by striking `military power of' and inserting `military and security developments involving'.

(d) Repeals- Section 1201 of the National Defense Authorization Act for Fiscal Year 2000 (P.L. 106-65; 113 Stat. 779; 10 U.S.C. 168 note) is amended by striking subsections (e) and (f).

(e) Effective Date-

(1) IN GENERAL- The amendments made by this section shall take effect on the date of the enactment of this Act, and shall apply with respect to reports required to be submitted under subsection (a) of section 1202 of the National Defense Authorization Act for Fiscal Year 2000, as so amended, on or after that date.

(2) STRATEGY AND UPDATES FOR MILITARY-TO-MILITARY CONTACTS WITH PEOPLE'S LIBERATION ARMY- The requirement to include the strategy described in paragraph (11)(A) of section 1202(b) of the National Defense Authorization Act for Fiscal Year 2000, as so amended, in the report required to be submitted under section 1202(a) of such Act, as so amended, shall apply with respect to the first report required to be submitted under section 1202(a) of such Act on or after the date of the enactment of this Act. The requirement to include updates to such strategy shall apply with respect to each subsequent report required to be submitted under section 1202(a) of such Act on or after the date of the enactment of this Act.

Regarding Section 1233, the committee's report stated:

This section would amend section 1202 of the National Defense Authorization Act for Fiscal Year 2000 (P.L. 106-65) by changing the title of the report to ''Annual Report on Military and Security Developments Involving the People's Republic of China,'' and by making certain clarifying and technical changes.

This section would also expand the scope of the report. It would require the Secretary of Defense, in consultation with the Secretary of State and Secretary of Energy, to provide analyses and forecasts of developments regarding U.S. engagement and cooperation with the People's Republic of China on security matters, such engagement and cooperation through military-to-military contacts, and the U.S. strategy for such engagement and cooperation in the future. Specifically, the committee requests the Secretary to provide information regarding U.S.-China engagement and cooperation in the areas of: counter-terrorism; counter-piracy; maritime safety; strategic capabilities, including space, nuclear and cyber warfare capabilities; nuclear policy and strategy; nonproliferation, including export controls, border security, and illicit arms transfers and interdictions; energy and environmental security; peacekeeping; humanitarian assistance and disaster relief, including in the area of military medicine; crisis management, including use of the ''defense hotline''; regional security issues, including in the Taiwan Strait and South and East China Seas and on the Korean peninsula; and regional security organizations and other mechanisms.

In addition, this section would incorporate the reporting requirement under section 1201 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65) on U.S.-China military-to-military contacts into the reporting requirement under section 1202 of that Act. It would also include a new requirement for a comprehensive and coordinated strategy for U.S.-China military-to-military contacts.

This section would further require the Secretary of Defense to provide additional information regarding military and security developments involving China that the Secretary considers relevant to U.S. national security. (Page 423)

Senate

The Senate Armed Services Committee, in its report (S.Rept. 111-35 of July 2, 2009) on the FY2010 defense authorization bill (S. 1390), states:

> The Department of Defense's Annual Report to Congress on the Military Power of the People's Republic of China (PRC) has included a brief description of the PRC concept of the ''three warfares'', generally identified as psychological warfare, media warfare, and legal warfare. These concepts, also referred to as ''nonmilitary warfare concepts'', have also been the subject of hearings before the United States-China Economic and Security Review Commission and were discussed in some detail in the Commission's 2008 report to Congress. The March 2009 harassment of the USNS Impeccable by Chinese ships in the South China Sea stands as a recent example of how the PRC may be using the concept of ''legal warfare'', for instance, to influence regional events. The committee urges the Secretary of Defense to examine the implications of the ''three warfares'' on United States military affairs in the region and requests the Secretary to provide additional detail on each of them, including examples and trends, in the 2010 report to Congress. (Page 195)

Conference

Section 1246 of the conference report (H.Rept. 111-288 of October 7, 2009) on H.R. 2647/P.L. 111-84 of October 28, 2009, amends the current statute requiring DOD to submit an annual report to Congress on China's military power. The text of Section 1246 is as follows:

> SEC. 1246. ANNUAL REPORT ON MILITARY AND SECURITY DEVELOPMENTS INVOLVING THE PEOPLE'S REPUBLIC OF CHINA.
>
> (a) ANNUAL REPORT.—Subsection (a) of section 1202 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65; 113 Stat. 781; 10 U.S.C. 113 note) is amended—
>
> (1) in the first sentence, by striking ''on the current and future military strategy of the People's Republic of China'' and inserting ''on military and security developments involving the People's Republic of China'';
>
> (2) in the second sentence—
>
> (A) by striking ''on the People's Liberation Army'' and inserting ''of the People's Liberation Army''; and
>
> (B) by striking ''Chinese grand strategy, security strategy,'' and inserting ''Chinese security strategy''; and
>
> (3) by adding at the end the following new sentence: ''The report shall also address United States-China engagement and cooperation on security matters during the period covered by the report, including through United States-China military-to-military contacts, and the United States strategy for such engagement and cooperation in the future.''.
>
> (b) MATTERS TO BE INCLUDED.—Subsection (b) of such section, as amended by section 1263 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181; 122 Stat. 407), is further amended—
>
> (1) in paragraph (1)—

(A) by striking ''goals of'' inserting ''goals and factors shaping''; and

(B) by striking ''Chinese grand strategy, security strategy,'' and inserting ''Chinese security strategy'';

(2) by amending paragraph (2) to read as follows:

''(2) Trends in Chinese security and military behavior that would be designed to achieve, or that are inconsistent with, the goals described in paragraph (1).'';

(3) in paragraph (6)—

(A) by inserting ''and training'' after ''military doctrine''; and

(B) by striking '', focusing on (but not limited to) efforts to exploit a transformation in military affairs or to conduct preemptive strikes''; and

(4) by adding at the end the following new paragraphs:

''(10) In consultation with the Secretary of Energy and the Secretary of State, developments regarding United States-China engagement and cooperation on security matters.

''(11) The current state of United States military-to-military contacts with the People's Liberation Army, which shall include the following:

''(A) A comprehensive and coordinated strategy for such military-to-military contacts and updates to the strategy.

''(B) A summary of all such military-to-military contacts during the period covered by the report, including a summary of topics discussed and questions asked by the Chinese participants in those contacts.

''(C) A description of such military-to-military contacts scheduled for the 12-month period following the period covered by the report and the plan for future contacts.

''(D) The Secretary's assessment of the benefits the Chinese expect to gain from such military-to-military contacts.

''(E) The Secretary's assessment of the benefits the Department of Defense expects to gain from such military-to-military contacts, and any concerns regarding such contacts.

''(F) The Secretary's assessment of how such military-to-military contacts fit into the larger security relationship between the United States and the People's Republic of China.

''(12) Other military and security developments involving the People's Republic of China that the Secretary of Defense considers relevant to United States national security.''.

(c) CONFORMING AMENDMENT.—Such section is further amended in the heading by striking ''MILITARY POWER OF'' and inserting ''MILITARY AND SECURITY DEVELOPMENTS INVOLVING''.

(d) REPEALS.—Section 1201 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65; 113 Stat. 779; 10 U.S.C. 168 note) is amended by striking subsections (e) and (f).

(e) EFFECTIVE DATE.—

(1) IN GENERAL.—The amendments made by this section shall take effect on the date of the enactment of this Act, and shall apply with respect to reports required to be submitted under subsection (a) of section 1202 of the National Defense Authorization Act for Fiscal Year 2000, as so amended, on or after that date.

(2) STRATEGY AND UPDATES FOR MILITARY-TO-MILITARY CONTACTS WITH PEOPLE'S LIBERATION ARMY.—The requirement to include the strategy described in paragraph (11)(A) of section 1202(b) of the National Defense Authorization Act for Fiscal Year 2000, as so amended, in the report required to be submitted under section 1202(a) of such Act, as so amended, shall apply with respect to the first report required to be submitted under section 1202(a) of such Act on or after the date of the enactment of this Act. The requirement to include updates to such strategy shall apply with respect to each subsequent report required to be submitted under section 1202(a) of such Act on or after the date of the enactment of this Act.

Regarding Section 1246, the conference report states:

Annual report on military and security developments involving the People's Republic of China (sec. 1246)

The House bill contained a provision (sec. 1233) that would amend section 1202 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65) by changing the title of the report to ''Annual Report on Military and Security Developments Involving the People's Republic of China'' and by making certain clarifying and technical changes. The provision would also expand the scope of the report to include information regarding U.S. engagement and cooperation with China on security matters, and information on additional developments involving China that the Secretary of Defense considers relevant to national security. In addition, the provision would repeal the reporting requirements on military-to-military contacts under sections 1201(e) and (f) of the National Defense Authorization Act for Fiscal Year 2000 and add these requirements to the reporting requirements under section 1202 of that Act. Details of the provision's reporting requirements are set forth in the report accompanying the House bill (House Report 111–166).

The Senate amendment contained no similar provision.

The Senate recedes.

The conferees encourage the Secretary to further examine the implications of China's concepts of psychological warfare, media warfare, and legal warfare on U.S. military affairs in the region and include additional detail on each of these concepts, including examples and trends, in the fiscal year 2010 report to Congress required under this section. (Page 842)

FY2009

FY2009 Defense Authorization Bill (H.R. 5658/S. 3001)

House

The House Armed Services Committee, in its report (H.Rept. 110-652 of May 16, 2008) on H.R. 5658, stated the following regarding the development of an anti-air warfare target for simulating Threat D, which some press reports suggest might be a term that refers to an ASCM with a flight profile similar that of the SS-N-27 Sizzler:[102]

> The committee is pleased to note the anticipated source selection for the development of a Threat D missile target development program in the summer of 2008. The committee remains concerned that the estimated initial operating capability of such a target in 2014 creates substantial risk during the interim period. The committee encourages the Secretary to accelerate the target development program to the maximum extent practicable. In addition, the committee directs the Secretary of the Navy to notify the congressional defense committees in writing if the estimated initial operating capability of the Threat D target is delayed more than 90 days or if the costs associated with such program exceeds 10 percent of programmed funding. The committee further directs the Secretary to provide such notification within 30 days, along with the reasons for such delay or cost overrun and a mitigation plan consisting of actions that could restore the program to its original timeline. (Page 204)

FY2008

FY2008 Defense Authorization Act (H.R. 1585/S. 1547/H.R. 4986/P.L. 110-181)

House

Section 1244 of the House-reported version of the FY2008 defense authorization bill (H.R. 1585) stated:

> SEC. 1244. SENSE OF CONGRESS CONCERNING THE STRATEGIC MILITARY CAPABILITIES AND INTENTIONS OF THE PEOPLE'S REPUBLIC OF CHINA.
>
> It is the sense of Congress that—
>
> (1) United States military war-fighting capabilities are potentially threatened by the strategic military capabilities and intentions of the People's Republic of China, as demonstrated by—

[102] See "United States: The Supersonic Anti-Ship Missile Threat," *Stratfor.com*, April 18, available online at http://www.stratfor.com/analysis/united_states_supersonic_anti_ship_missile_threat?ip_auth_redirect=1; Tony Capaccio, "Navy Can't Test Defense Against China's Sizzler," Until 2014," *Bloomberg.com*, April 3, 2008; Chris Johnson, "Navy Issues Draft Request For Threat-D Target Development," *Inside the Navy*, July 30, 2007; Chris Johnson, "Industry Day Planned To Develop Threat-D Target For Ship Tests," *Inside the Navy*, July 9, 2007; and Chris Johnson, "Pentagon: Lack Of Threat-D Target Hinders Testing For New Vessels," *Inside the Navy*, January 22, 2007. See also the transcript of the March 12, 2008, hearing before the House Armed Services Committee on the posture of the Pacific Command.

> (A) the October 2006 undetected broach of a Chinese SONG-class diesel-electric submarine in close proximity of the USS Kitty Hawk in international waters; and
>
> (B) the January 2007 test of a direct ascent anti-satellite (ASAT) weapon, posing a potential threat to United States military assets in space;
>
> (2) it is in the national security interests of the United States to make every effort to understand China's strategic military capabilities and intentions; and
>
> (3) as part of such an effort, the Secretary of Defense should expand efforts to develop an accurate assessment of China's strategic military modernization, particularly with regard to its sea- and space-based strategic capabilities.

Senate

The Senate-passed version of the FY2008 defense authorization bill (S. 1547; S.Rept. 110-77 of June 5, 2007) did not contain a provision analogous to Section 1244 of the House-passed version of H.R. 1585 (see above).

Conference

The conference report (H.Rept. 110-477 of December 6, 2007) on H.R. 1585 did not contain a provision analogous to the Sec. 1244 of the House-passed version of H.R. 1585. The conference report stated:

> The conferees note China's continued investment in strategic military capabilities that could be used to support power projection and access denial operations beyond the Asia Pacific region, and the lack of transparency surrounding the strategic military capabilities and intentions relating to China's military modernization. The Pentagon's 2006 Quadrennial Defense Review Report (QDR) found that China is at a strategic crossroads and that, "of the major and emerging powers, China has the greatest potential to compete militarily with the United States." The conferees note that during the last year, China demonstrated such potential, including the October 2006 broach of a Chinese SONG-class diesel-electric submarine in close proximity to the USS Kitty Hawk aircraft carrier in international waters and the January 2007 test of a direct ascent anti-satellite missile against a Chinese weather satellite in low-earth orbit.
>
> The conferees encourage the Secretary of Defense to expand efforts to develop an accurate assessment and understanding of China's strategic military modernization and strategic intentions, particularly with regard to its sea- and space-based strategic capabilities. (Page 1031)

H.R. 1585 was vetoed by the President on December 28, 2008. A new bill, H.R. 4986, was passed with changes that took into account the President's objection to certain parts of H.R. 1585. The President's objection to certain parts of H.R. 1585 did not relate to the passage quoted above. H.R. 4986 was signed into law as P.L. 110-181 of January 28, 2008. Except for the changes made by Congress to take into account the President's objection to certain parts of H.R. 1585, H.Rept. 110-477 in effect serves as the conference report for H.R. 4986.

Appendix B. Excerpt from March 2010 Testimony of Commander, U.S. Pacific Command

On March 23, 2010, Admiral Robert Willard, the Commander of U.S. Pacific Command, testified that

> China's growing presence and influence in the region create both challenges and opportunities for the United States and regional countries.
>
> China's rapid and comprehensive transformation of its armed forces is affecting regional military balances and holds implications beyond the Asia-Pacific region. Of particular concern is that elements of China's military modernization appear designed to challenge our freedom of action in the region….
>
> The military and government leaders that I have spoken with have also made it clear that we should not take our level of influence within the region for granted. Many countries, most notably China, see the same strategic opportunities that we do and are seeking to increase their level of access and influence throughout the Asia-Pacific by building and expanding economic, diplomatic and security relationships….
>
> One cannot engage within the region without having a discussion about the Peoples Republic of China (PRC). Beijing's national strategy remains primarily focused on economic development which emphasizes domestic stability and maintaining an international security environment conducive to continued economic growth. This new found economic wealth is funding a military modernization program that has raised concerns in the region over the lack of transparency into Beijing's emerging military capabilities and the intentions that motivate them – a concern shared by the United States. China's interest in a peaceful and stable environment that will support the country's developmental goals is difficult to reconcile with the evolving military capabilities that appear designed to challenge U.S. freedom of action in the region or exercise aggression or coercion of its neighbors, including U.S. treaty allies and partners. Reconciling the apparent gap between the PRC's statements and its observed military capabilities serves to underscore the importance of maintaining open channels of communication and of building toward a continuous dialogue with China's armed forces based on open and substantive discussion of strategic issues. However, that type of frank and candid discussion requires a stable and reliable U.S.-China military-to-military relationship– a relationship that does not yet exist with the Peoples' Liberation Army (PLA).
>
> **People's Liberation Army (PLA) Modernization.** China has continued a rapid, comprehensive program of military modernization with supporting doctrine and a professionalization of the officer and enlisted ranks. This program of modernization has been supported by a military budget that has grown annually by double digits over the last decade. Beijing publicly asserts that China's military modernization is "purely defensive in nature," and aimed solely at protecting China's security and interests. Over the past several years, China has begun a new phase of military development by beginning to articulate roles and missions for the PLA that go beyond China's immediate territorial concerns, but has left unclear to the international community the purposes and objectives of the PLA's evolving doctrine and capabilities.
>
> The PLA has placed increasing emphasis on attracting and retaining a professional cadre of officers and non-commissioned officers. Incentives include advanced training and education, as well as housing and post-service employment preferences that should lead to a more

motivated, better trained and professional military capable of a broader range of combined arms missions.

China continues to develop weapons systems, technologies and concepts of operation that support anti-access and area denial strategies in the Western Pacific by holding air and maritime forces at risk at extended distances from the PRC coastline. The PLA Navy is continuing to develop a "Blue Water" capability that includes the ability to surge surface combatants and submarines at extended distances from the PRC mainland. Modernization programs have included development of sophisticated shipboard air defense systems as well as supersonic sea-skimming anti-ship cruise missiles.

China's leaders are pursuing an aircraft carrier capability. In 1998 China purchased an incomplete former Soviet KUZNETSOV class aircraft carrier, which began renovations in 2002 at its shipyard in Dalian. I expect this carrier to become operational around 2012 and likely be used to develop basic carrier skills.

China continues to field the largest conventional submarine force in the world totaling more than 60 boats; while the quality of China's submarine fleet is mixed the percentage of modern, quiet submarines in the fleet is growing. This fleet also includes a number of nuclear powered fast attack and ballistic missile submarines. China is also developing a new submarine launched nuclear ballistic missile, the JL-2, capable of ranging the western United States.

China fields a growing number of sophisticated multi-role fighter aircraft, including the SU-27 and SU-30 purchased from Russia and indigenously produced 4th generation aircraft. The PLA Air Force (PLAAF) and Naval air forces have continued to focus on improving pilot and controller proficiencies in complex, multi-plane combat scenarios, including operations over water. The PLA has focused considerable effort on building up its integrated air defense capabilities and has deployed an increasing number of upgraded Russian SA-20 PMU 2 long range surface-to-air missile systems along the Taiwan Strait. China is also developing and testing a conventional anti-ship ballistic missile based on the DF-21/CSS-5 MRBM designed specifically to target aircraft carriers.

Until recently, "jointness" in the PLA meant that different services operated toward a common goal in a joint or combined campaign with operations separated by time and distance. However, years of observing U.S. military operations and modern warfare campaigns have convinced PLA leadership of the need for greater integration between services to include enhanced joint operations at the tactical level. The PLA has adopted the concept of "Integrated Joint Operations" as a goal for the Chinese military to allow it to conduct integrated operations on a campaign level. Additionally, the PLA has placed increased emphasis on training in more demanding conditions, such as complex electromagnetic environments.

China's Strategic Capabilities. China maintains a nuclear force capable of ranging most of the world, including the continental United States. This capability has been enhanced through the development of increasingly sophisticated road mobile delivery systems as well as the development of the Type 094 nuclear-powered ballistic missile submarine (JIN-class SSBN). Despite assertions that China opposes the "weaponization" of space, the PLA is developing a multi-dimensional program to deny potential adversaries the use of space, an element of which was demonstrated in January 2007 when China intentionally destroyed one of its own weather satellites with a direct ascent anti-satellite weapon.

U.S. military and government networks and computer systems continue to be the target of intrusions that appear to have originated from within the PRC. Although most intrusions focus on exfiltrating data, the skills being demonstrated would also apply to network attacks.

China's Ongoing "Sovereignty" Campaigns. Beijing remains committed to eventual unification with Taiwan, and has not ruled out the use of force to achieve that goal. The PLA's continued military advancements sustain a trend of shifting the cross-Strait military balance in Beijing's favor. The Taiwan Relations Act provides that it is U.S. policy "to provide Taiwan with arms of a defensive character and to maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan." At the U.S. Pacific Command, we fulfill these obligations on a daily basis.

Motivated by a need for indigenous natural resources and consolidation of self-proclaimed sovereignty limits, the PRC has re-asserted its claims to most of the South China Sea and reinforced its position in the region, including the contested Spratly and Paracel Islands. The PLA Navy has increased its patrols throughout the region and has shown an increased willingness to confront regional nations on the high seas and within the contested island chains. Additionally, China lays claim to the Senkakus, administered by Japan, and contests areas on its border with India.

As an integral part of its strategy, the PRC has interpreted certain international laws in ways contrary to international norms, such as the UN Convention for Law of the Sea (UNCLOS), and has passed domestic laws that further reinforce its sovereignty claims.

U.S./China Military Relationship and Security Cooperation. U.S. Pacific Command is committed to the development of a stable and reliable military-to-military relationship with the PRC, which is critical to avoiding misperception and miscalculation and, ultimately, building the type of partnership that leaders in both countries aspire to. Although we are currently in a period of reduced engagement activity due to the PRC's reaction to the notification of arms sales to Taiwan, last year's military-to-military activities were highlighted by exchange visits by senior leaders from both sides. During his visit to Washington, D.C. in November 2009, General XU Caihou, Vice Chairman of the Central Military Commission, agreed with Defense Secretary Gates to further develop the military aspect of the U.S. – People's Republic of China (PRC) relationship. U.S. Pacific Command looks forward to working with the PLA on concrete and practical measures to strengthen our military relationship in order to improve the security interests of both the United States and China. These measures include senior leader visits, humanitarian assistance and disaster relief exercise observer exchanges, a naval passing exercise, and a military medical exchange. The PLA leadership has also shown a willingness to expand military engagement to areas such as counterterrorism, counterpiracy, maritime safety, and non-proliferation.

As the Executive Agent for the U.S.–PRC Military Maritime Consultative Agreement (MMCA), U.S. Pacific Command co-led senior leader bilateral MMCA discussions last summer in Beijing. The MMCA forum was initiated in 1998 and is intended to improve safety for airmen and sailors when our nations' vessels and aircraft operate in proximity to one another. During the December 2009 Defense Policy Coordination Talks held in Honolulu, both sides agreed to reinvigorate the MMCA as a viable diplomatic mechanism through which we can manage issues related to maritime and air safety.[103]

[103] Statement of Admiral Robert F. Willard, U.S. Navy, Commander, U.S. Pacific Command, Before the House Armed Services Committee on U.S. Pacific Command Posture, March 23, 2010, pp. 3, 4, 12-17.

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