



**Congressional
Research Service**

Informing the legislative debate since 1914

Chinese Land Reclamation in the South China Sea: Implications and Policy Options

(name redacted)

Specialist in Asian Affairs

(name redacted)

Legislative Attorney

(name redacted)

Specialist in Asian Affairs

(name redacted)

Specialist in Naval Affairs

(name redacted)

Analyst in Asian Affairs

June 18, 2015

Congressional Research Service

7-....

www.crs.gov

R44072

Summary

Since September 2013, China has undertaken extensive reclamation and construction on several reefs in the Spratly Island chain in the South China Sea, raising a variety of concerns in the United States and Asia. The reclamation has created over 2,000 acres (809 hectares) of artificial landmasses on Chinese-occupied reefs that are disputed between several countries and are located in some of the world's most heavily trafficked waters. China announced on June 16, 2015, that its reclamation work would be completed "in the upcoming days," and that when reclamation was finished, it would turn to building facilities on the newly created artificial islands.

The reclamation activity continues a series of assertive actions by China in the South China Sea as Beijing seeks to more actively stress its sovereignty claims in the area. These actions have led the U.S. government to argue that China is seeking to strengthen its maritime territorial claims using threats, coercion, and other actions that fall short of direct conflict. This, some observers argue, raises the question of whether the United States has developed a strategy for countering Chinese actions, and if so, whether that strategy is adequate. China states that its activities are legal, reflecting its claim of sovereignty over the affected features, and notes that other South China Sea claimants have also reclaimed areas on features that they occupy.

The reclamation and construction has military/operational, diplomatic, and legal implications. The Chinese government has stated that the work is intended to fulfill "the need of necessary military defense," as well as to serve non-military purposes. China's plans to use the artificial islands for military purposes could affect U.S. strategy in the Asia-Pacific. The activity has complicated diplomatic processes intended to lower tensions in the region, and legal processes under the United Nations Convention on the Law of the Sea (UNCLOS), that could bring clarity to disputes over maritime rights in the area. According to many analysts, it violates the (non-binding) 2002 Declaration on the Conduct of Parties in the South China Sea (DOC) between China and the Association of Southeast Asian Nations (ASEAN).

This report assesses legal, military/operational, and diplomatic implications of the reclamation and construction activity. It surveys U.S. and Chinese statements on the situation, provides a history of reclamation activity by other nations including the United States and other South China Sea claimants, and discusses U.S. strategy and potential options for U.S. policymakers.

Contents

Overview.....	1
Questions Raised by China’s Reclamation Activity	3
Legal Implications of Chinese Reclamation.....	5
Military/Operational Implications	7
Overview	7
Day-to-Day Operations	8
Combat Operations.....	8
Specific Observations.....	9
Facilities on Existing Chinese Island Bases.....	9
Military, Coast Guard, and Fishing Fleet Presence.....	9
Maritime Domain Awareness (MDA) and Intelligence, Surveillance, and Reconnaissance (ISR)	10
Search and Rescue (SAR)	10
South China Sea Air Defense Identification Zone (ADIZ)	11
A2/AD Systems and Power Projection Systems	11
Combat Operations.....	12
Diplomatic Implications	12
Chinese Statements and Technology.....	13
Official Chinese Statements	14
Unofficial Chinese Commentary	16
The Role of New Technology.....	18
Other Countries’ Land Reclamation Efforts	20
U.S. Strategy.....	21
Looking Ahead.....	24

Figures

Figure 1. Reclamation and Construction on China-Occupied Reefs in the Spratlys	3
Figure 2. Occupied Features in the Spratlys (April 2015).....	18
Figure 3. The Tianjing (“Sky Whale”) Self-Propelled Cutter Suction Dredger.....	19

Contacts

Author Contact Information.....	25
---------------------------------	----

Overview

Since September 2013, China has undertaken extensive land reclamation and construction on several reefs in the Spratly island chain in the southern part of the South China Sea, raising a variety of concerns in the United States and Asia. Photographs released by sources including IHS-Jane's, the Center for Strategic and International Studies (CSIS), and China's Xinhua News Agency show large-scale reclamation that has increased the size of some land features by several times and created completely new land features that had previously been submerged reefs.¹

China's Foreign Ministry announced on June 16, 2015, that China would complete its reclamation work "in the upcoming days" and then turn its attention to building facilities on the newly created artificial islands.²

Each of the areas under reclamation—including Cuarteron Reef, Fiery Cross Reef, Gaven Reef, Hughes Reef, Johnson South Reef, Mischief Reef, and Subi Reef (see table and map, below)—is disputed between China and at least one other claimant, including the Philippines, Vietnam, Malaysia, and Taiwan.³ At least three—Hughes Reef, Johnson South Reef, and Mischief Reef—are within the 200-nautical mile exclusive economic zone (EEZ) that the Philippines claims from its nearest primary landmass, the island of Palawan.

In a May 30, 2015, speech, Secretary of Defense Ashton Carter said China had created over 2,000 acres (809 hectares) of land in the South China Sea in the past 18 months, "more than all other claimants combined ... and more than in the entire history of the region."⁴ China has also undertaken construction of harbors, radar towers, an airstrip long enough to support most military aircraft, and other facilities. Defense Department officials have also reportedly identified artillery vehicles on at least one of the artificial islands.

The reclamation activity continues a series of assertive actions by China in the South China Sea as Beijing seeks to more actively stress its sovereignty claims in the area. These actions have led the U.S. government to argue that China is seeking to strengthen its maritime territorial claims using threats, coercion, and other actions that fall short of direct conflict.⁵ U.S. officials point to Chinese actions including more extensive patrols by Chinese maritime authorities and other Chinese vessels, the blockading of some disputed features by Chinese maritime authorities, the announcement of fishing bans, energy exploration in disputed waters, and now the reclamation and infrastructure improvements on several Chinese-controlled features. In the view of many

¹ IHS-Jane's 360, "Imagery Shows Progress of China's Land Building Across Spratlys," February 15, 2015, <http://www.janes.com/article/48984/imagery-shows-progress-of-chinese-land-building-across-spratlys>. Center for Strategic and International Studies, Asia Maritime Transparency Initiative Island Tracker, <http://amti.csis.org/island-tracker/>. "China to Complete Land Reclamation of Construction on Some Nansha Islands Soon," June 16, 2015, http://news.xinhuanet.com/english/2015-06/16/c_134330718.htm.

² Ministry of Foreign Affairs of the People's Republic of China, "Foreign Ministry Spokesman Lu Kang's Remarks on Issues Relating to China's Construction Activities on the Nansha Islands and Reefs," June 16, 2015, http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2535_665405/t1273370.shtml.

³ Brunei also claims an exclusive economic zone that includes land features in the South China Sea, but none of the reclamations involves a feature that it claims.

⁴ Department of Defense, "IISS Shangri-la Dialogue: A Regional Security Architecture Where Everyone Rises," May 30, 2015, <http://www.defense.gov/Speeches/Speech.aspx?SpeechID=1945>.

⁵ Daniel Russel, Assistant Secretary of State, Testimony to the House Foreign Affairs Committee Subcommittee on East Asia and the Pacific, February 5, 2014.

experts, these actions have substantially heightened regional tensions and raised the potential of military conflict in some of the world's most heavily trafficked waters, through which around \$5 trillion in ship-borne commerce passes each year.⁶

China argues that it holds sovereignty over each of the features and therefore is acting legally. It points out that other claimants, including Vietnam, the Philippines, Malaysia and Taiwan, have also reclaimed land and fortified features in the area; that one claimant, Vietnam, occupies considerably more features in the Spratlys than China does; and that others have constructed airstrips and based troops on features they control.

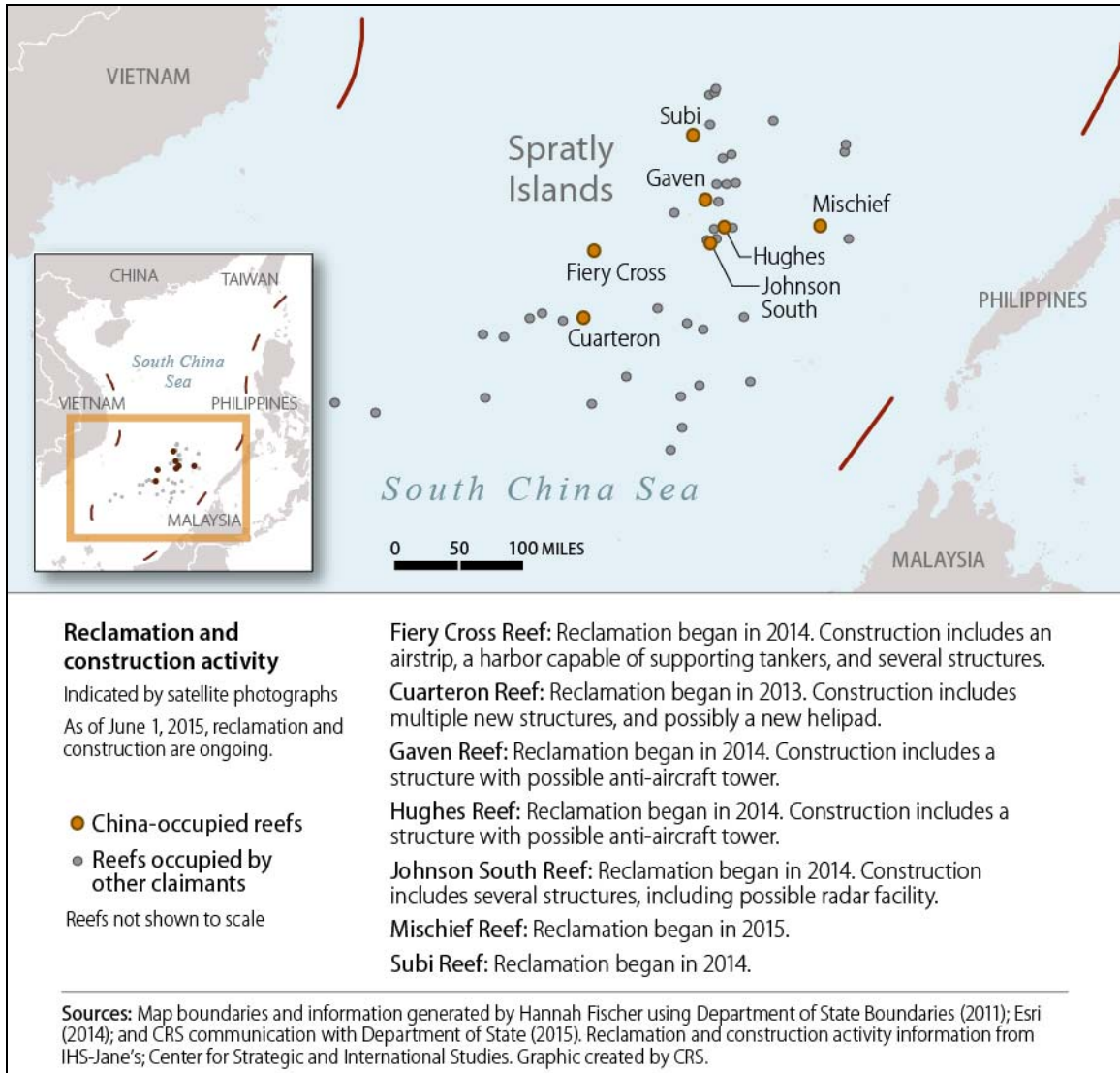
Other observers, including U.S. government officials, argue that the scale of China's current reclamation dwarfs that by any other actor in the South China Sea and is inconsistent with the (non-binding) 2002 Declaration on the Conduct of Parties in the South China Sea (DOC). In March 2015, U.S. Pacific Fleet Commander Harry Harris, Jr., stated that, "the scope and pace of building man-made islands raises serious questions about Chinese intentions."⁷ In the May 30, 2015, speech, Secretary of Defense Carter said, "... with its actions in the South China Sea, China is out of step with both the international rules and norms that underscore the Asia-Pacific's security architecture, and the regional consensus that favors diplomacy and opposes coercion."⁸

⁶ Admiral Robert Willard, Press Briefing (Moana Surfrider Hotel, Honolulu, November 13, 2011), <http://www.whitehouse.gov/the-press-office/2011/11/13/press-briefing-nsa-strategic-communications-ben-rhodes-and-admiral-rober>.

⁷ Admiral Harry B. Harris, Jr., Speech to Australian Strategic Policy Institute, March 31, 2015, available at <http://www.cpf.navy.mil/leaders/harry-harris/speeches/2015/03/ASPI-Australia.pdf>.

⁸ Department of Defense, "IISS Shangri-la Dialogue: A Regional Security Architecture Where Everyone Rises," May 30, 2015, <http://www.defense.gov/Speeches/Speech.aspx?SpeechID=1945>.

Figure I. Reclamation and Construction on China-Occupied Reefs in the Spratlys



Questions Raised by China's Reclamation Activity

China's land reclamation in the South China Sea raises a number of questions for the United States. Among them:

- Is the reclamation activity legal? What are its implications for China's ability to make arguments about its sovereignty and maritime rights in the area?
- What are China's motivations for pursuing reclamation activity now?
- Does the reclamation activity improve China's ability to operate military and other assets further from the Chinese coast, and what would this ability allow the People's Liberation Army (PLA) and other Chinese institutions to do?
- Does the reclamation threaten or affect U.S. interests including freedom of navigation and freedom of the high seas?

- Does the reclamation substantially change the status of diplomatic efforts to reduce tensions and resolve sovereignty disputes in the region?
- How does Chinese reclamation activity affect U.S. strategy in the region? What are the appropriate responses for the United States?

CRS consulted with U.S. government and outside experts on the legal, military/operational, diplomatic, and economic implications of China's activities. Among CRS's findings are the following.

- Although others, including Vietnam, Malaysia, the Philippines, and Taiwan, have also reclaimed and/or reinforced land features in the area, China's reclamation is by far the most extensive any nation has undertaken on disputed features in the South China Sea.
- It is difficult to judge the legality of the Chinese reclamation activity, given that sovereignty over the features affected is not settled. Reclamation, per se, is not illegal on features over which a nation has sovereignty. However, each of the features is claimed by at least two parties, so each is clearly disputed. Moreover, some features in their original form may not have extended above water at high tide, meaning no sovereignty claim to those features is recognized under the United Nations Convention on the Law of the Sea (UNCLOS).
- Under UNCLOS, the reclamation does not allow China to claim broader 200-nautical-mile EEZs around the reclaimed landmasses. The most that a nation could claim around any of the features is territorial waters extending 12 nautical miles from the feature, and this is only claimable if, before reclamation began, the reef included features above water at all times. So far China has not asserted new legal claims based on its artificial island building.
- China has so far confined its latest wave of reclamation and construction work to features it already occupied in the Spratly Island chain. It does not appear to have sought to carry out such work on features it did not previously control, including those occupied by other claimants.
- The reclamation arguably violates the spirit of the 2002 Declaration on the Conduct of Parties in the South China Sea (DOC) between China and the Association of Southeast Asian Nations (ASEAN) and makes discussions over a potential Code of Conduct more difficult.
- The reclamation includes areas under consideration in an ongoing UNCLOS arbitration case, in which the Philippines seeks a ruling on the legality of Chinese claims and behavior in the South China Sea. The Philippines has asked for a ruling on the legal status of each of the features under reclamation, among others. Such a ruling could clarify the rights of all parties in areas surrounding the features.
- The reclamation efforts could improve China's ability to maintain ship and aircraft operations in the region on a day-to-day basis, including patrols of disputed features in the South China Sea, and to conduct combat operations in the region.
- China could use one or more of the reclamation sites as locations for anti-access/area denial (A2/AD) systems, including radars, electronic listening

equipment, surface-to-air missiles (SAMs), anti-ship cruise missiles (ASCMs), and manned and unmanned aircraft.

- China may be undertaking reclamation now in a way that it did not previously in part because of its development of more sophisticated dredging capabilities that make it easier for it to perform such work far from the Chinese mainland.

Legal Implications of Chinese Reclamation

One set of questions surrounding China's reclamation and construction activity is whether it can be considered legal, what additional rights China may seek to claim based on the features, and whether the activity in any way hinders the rights of other parties to navigate in the waters and airspace surrounding the features.

International law, as embodied in UNCLOS, governs the rights of states with respect to maritime zones, which are defined in terms of proximity to a coastal state. China and other claimants, including Vietnam, the Philippines, Malaysia, and Brunei, are parties to UNCLOS, although under the terms of Beijing's accession it did not agree to many of the convention's dispute resolution mechanisms. The United States is not a party to the convention, but it has said it abides by most of the convention's terms for claiming maritime rights. With respect to maritime disputes, the United States has consistently stated that it takes no position on the specific sovereignty questions but urges the parties involved to resolve the disputes peacefully, according to international law, and to refrain from using coercion, force, or threat to strengthen their claims.

UNCLOS recognizes that coastal states may claim maritime zones in which they may exercise certain rights:

- *Territorial Sea*: A coastal state is entitled to claim a belt of sea adjacent to its coast as its "territorial sea." This territorial sea may extend up to 12 nautical miles from the coast, and in this belt of sea the coastal state may exercise full sovereignty. (UNCLOS articles 2-3)
- *Contiguous Zone*: A coastal state may also establish a zone adjacent to its territorial sea as a "contiguous zone." Within this zone, the coastal state is not sovereign, but it may exercise the control necessary to prevent and punish infringements of the customs, fiscal, immigration, and sanitary laws and regulations that apply in its territorial sea. The contiguous zone may extend up to 24 nautical miles from the coast. (UNCLOS article 33)
- *Exclusive Economic Zone (EEZ)*: A coastal state may claim a belt of sea up to 200 nautical miles from its coast as its "exclusive economic zone (EEZ)." In this area, the coastal state is entitled to exercise "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living" of the sea, the seabed, and the subsoil of the seabed. (UNCLOS articles 55-57) The coastal state also has the "exclusive right to construct and to authorize and regulate the construction, operation and use of" artificial islands and certain other installations. (UNCLOS article 60)
- *Continental Shelf*: UNCLOS recognizes the legal right of every coastal state to control and exploit the natural resources of its continental shelf as determined

under the UNCLOS Commission on the Limits of the Continental Shelf, up to 350 miles from its coast.⁹ (UNCLOS articles 76-77)

Under UNCLOS article 121, these maritime zones may extend not only from the primary land area of a coastal state, but also from any islands over which it is sovereign. An island is defined as a “naturally formed area of land, surrounded by water, which is above water at high tide.” (Article 21) However, “rocks which cannot sustain human habitation or economic life of their own” are entitled only to a 12-mile territorial sea, not an EEZ or continental shelf. Elevations that are submerged at high tide and artificial islands do not establish rights in adjacent waters.

The construction of an artificial island may raise legal questions if it takes place within the EEZ of another state. In contrast, land reclamation related to features located in the high seas appears to be permissible under UNCLOS. Consequently, the permissibility of China’s land reclamation activities depends on the delimitation of zones among the surrounding states. China claims sovereignty over Taiwan without controlling it, and Taiwan occupies Itu Aba, the largest natural feature in the Spratlys chain and widely acknowledged to be a natural island according to the UNCLOS definition. At a stretch, therefore, China might seek to claim an EEZ linked to Itu Aba that would overlap the EEZ of the Philippines island of Palawan, meaning that China conceivably could try to argue that none of its activities impinge the exclusive rights of the Philippines. Chinese scholars routinely refer to Itu Aba as among eight Chinese-occupied features in the Spratlys chain, but China has not explicitly spelled out an EEZ claim linked to Itu Aba.

In the cases of China’s current land reclamation activities in the South China Sea, it appears that the most China could hope to establish would be a 12-mile belt of territorial waters surrounding features that qualified as rocks prior to the land reclamation efforts. Prior to reclamation, none of the original features appears to have been a natural island that could support human habitation of its own, and artificial islands do not generate their own maritime zones.

However, due to the complex nature of the tidal regime in the South China Sea, it may be difficult to establish which features stood above water at high tide prior to reclamation, which would affect any claim of sovereignty over such features (as nations cannot claim sovereignty over low-tide elevations) as well as the location of basepoints from which to measure any maritime rights.¹⁰ This is one of the Philippines’ concerns about the reclamation, as the Philippine-initiated case currently being considered by an UNCLOS Arbitral Tribunal asked the tribunal for rulings on whether or not each of the original features qualified for any sovereignty claims and maritime rights.

China has not stated whether it will claim an EEZ from any of the enlarged features. While China’s land reclamation efforts could create some ambiguity with respect to whether certain features are naturally formed rocks rather than elevations submerged at high tide, it seems unlikely that China could establish that the features were always capable of sustaining human

⁹ In UNCLOS Article 76, the Convention defines a coastal state’s continental shelf as comprising: “the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.” http://www.un.org/depts/los/convention_agreements/texts/unclos/part6.htm.

¹⁰ Clive Schofield, “Adrift on Complex Waters,” in *The South China Sea Maritime Dispute: Political, Legal, and Regional Perspectives*, ed. Leszek Buszynski and Christopher B. Roberts (New York: Routledge, 2015), p. 26.

habitation or economic activity so as to qualify as full-fledged islands that would be entitled to an EEZ.

While China's land reclamation projects in areas that constitute high seas may not be illegal, they could implicate China's obligations under UNCLOS regarding preservation of the marine environment. UNCLOS article 194 obligates states parties to "take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment," including measures "necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life." Some experts believe that China's dredging of the ocean floor near features in the South China Sea is harming coral reefs and other components of the local marine ecology.¹¹ It has been suggested that a legal challenge to Chinese activities based on their environmental effects could prove viable inasmuch as it could be pursued without contesting maritime boundaries, improving the chances that jurisdiction would be found.¹²

The South China Sea DOC does not directly address land reclamation to transform features into artificial islands. However, parties to it undertake to "exercise self-restraint in the conduct of activities that would complicate or escalate disputes and affect peace and stability including, among others, refraining from action of inhabiting on the presently uninhabited islands, reefs, shoals, cays, and other features and to handle their differences in a constructive manner." China's land reclamation efforts arguably violate the general spirit of cooperation and self-restraint embodied in the DOC, which will likely make further diplomatic efforts to lower tensions or promote confidence-building cooperative projects more difficult.

Military/Operational Implications

Overview

China's land reclamation efforts in the South China Sea could improve China's ability to maintain ship and aircraft operations in the region on a day-to-day basis, and to conduct combat operations in the region if need be. For China, the operational value of building islands in the Spratlys would derive from the islands' location in the east-central part of the South China Sea, several hundred miles south of China's mainland, and from the facilities that China would place on them. The military enhancements described in this section could have the effect of improving China's position in a potential confrontation with other rival claimants in the South China Sea or others, beneath the threshold of all-out war, and of improving China's ability to conduct patrols of the sea.

¹¹ U.S. Ambassador to ASEAN Nina Hachigian, "The Other Problem in the South China Sea," *The Diplomat*, April 8, 2015, <http://thediplomat.com/2015/04/the-other-problem-in-the-south-china-sea/>; James Borton, "China's Reclamations Roil South China Sea," *International Policy Digest*, April 11, 2015, <http://www.internationalpolicydigest.org/2015/04/11/china-s-reclamations-roil-south-china-sea/>; Gabriel Dominguez, "Beijing's South China Sea Projects 'Highly Disruptive' to Local Ecosystems," *Deutsche Welle*, April 16, 2015, <http://www.dw.de/beijings-south-china-sea-projects-highly-disruptive-to-local-ecosystems/a-18387012>.

¹² Robert Williams, "A Secret Weapon to Stop China's Island Building: The Environment?" *The National Interest*, April 20, 2015, <http://nationalinterest.org/feature/secret-weapon-stop-chinas-island-building-the-environment-12672?page=show>; Youna Lyons and Wong Hiu Fung, "South China Sea: Turning Reefs into Artificial Islands," RSIS Commentary. S. Rajaratnam School of International Studies (Singapore), No. 104, April 30, 2015, <http://www.rsis.edu.sg/wp-content/uploads/2015/04/CO15104.pdf>.

Day-to-Day Operations

China could use one or more of the land reclamation sites as refueling, resupply, and crew rest locations for fishing boats, coast guard cutters, and navy ships that are based at China's Hainan Island or along China's mainland coast. In addition, small numbers of boats, cutters, and ships might be stationed at one or more of the reclamation sites, perhaps on a rotational basis. Radars and aircraft (including unmanned aerial vehicles [UAVs]) stationed at these sites could increase China's ability to maintain maritime domain awareness (MDA) over surrounding waters and airspace. In all these ways, facilities at the reclamation sites could permit China to maintain a more frequent, denser, and operationally effective presence of fishing boats, coast guard ships, and navy ships in the region, improving China's ability to use these waters for its own purposes, and to enforce its territorial claims over these waters.¹³ Should China at some point declare an air defense identification zone (ADIZ) over the South China Sea, one or more of these sites could be used to support the administration of that ADIZ.¹⁴

Combat Operations

China could use one or more of the reclamation sites as locations for anti-access/area denial (A2/AD) systems, including radars, electronic listening equipment, surface-to-air missiles (SAMs), anti-ship cruise missiles (ASCMs), and manned and unmanned aircraft. (Iran has made similar deployments on islands it controls near the Strait of Hormuz.¹⁵) In addition, small numbers of Chinese navy ships (such as Type 022 missile-armed attack craft, Type 056 corvettes, or Type 054 frigates) might be stationed at one or more of the sites, perhaps on a rotational basis.¹⁶ The effect would be to project elements of China's A2/AD network further into the South China Sea, and thicken the overall density of the network. In a conflict against U.S. forces, these sites and the ships and aircraft deploying from them would be vulnerable to attack, but the need to attack these sites and the units deploying from them would increase the amount of time and effort needed to destroy or roll back China's A2/AD network and divert U.S. assets from performing other missions. In addition, China's new bases could potentially support the capabilities for small amphibious operations against nearby islands held by other countries.

¹³ For discussions of China's maritime territorial claims and assets that China uses to enforce them, see CRS Report R42784, *Maritime Territorial and Exclusive Economic Zone (EEZ) Disputes Involving China: Issues for Congress*, by (name redacted), and CRS Report R42930, *Maritime Territorial Disputes in East Asia: Issues for Congress*, by (name redacted), (name redacted), and (name redacted).

¹⁴ An ADIZ is an area of airspace beyond a country's sovereign territory within which the country requires the identification, location, and air traffic control of aircraft in the interest of its national security. For more information on ADIZs and China's declaration of an ADIZ in the East China Sea in November 2013, see CRS Report R43894, *China's Air Defense Identification Zone (ADIZ)*, by (name redacted) and (name redacted).

¹⁵ For a discussion, see CRS Report R42335, *Iran's Threat to the Strait of Hormuz*, coordinated by (name redacted).

¹⁶ For discussions of some of these systems, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by (name redacted).

Specific Observations

Facilities on Existing Chinese Island Bases

Analysis of satellite imagery of existing Chinese military facilities on islands in the South China Sea indicates that these facilities typically feature some combination of the following:

- a garrison;
- anti-air and anti-surface gun systems and artillery;
- communications equipment;
- radars;
- a helipad and a runway;
- fuel depots; and
- a pier and roll-on/roll-off docks.

Reportedly, the facility that China is building at Fiery Cross Reef may include a harbor large enough to dock surface combatants.¹⁷

Military, Coast Guard, and Fishing Fleet Presence

For China, enhanced military facilities in the Spratlys could mitigate the logistical challenges of sustaining operations of navy ships, coast guard cutters, and fishing boats in the southern South China Sea, far from Hainan Island and China's mainland coast. At present, PLA Navy and China Coast Guard (CCG) vessels operating in the South China Sea must return to bases along the Chinese coast to resupply, conduct major repairs, and give sailors shore leave. Bases in the Spratlys could permit China to bring in fuel, supplies, and replacement parts, and then transfer them to Chinese vessels operating in the area, improving the fraction of time deployed that these vessels are able to conduct operations.¹⁸ This fraction could further be increased by stationing ships at these facilities and rotating successive crews to the ships—a practice that the U.S. Navy has employed or plans to employ for mine warfare ships stationed in the Persian Gulf and for Littoral Combat Ships to be stationed at Singapore. The enhanced facilities could also mitigate the logistical challenges of energy exploration by Chinese companies in the southern part of the South China Sea. As discussed in a CRS report,¹⁹ Chinese fishing boats on some occasions have harassed and confronted non-Chinese vessels. Many analysts believe that the PRC government directs and controls certain fishing vessels.²⁰ An increased Chinese fishing boat presence in the

¹⁷ James Hardy and Sean O'Connor, "China Building Airstrip-Capable Island on Fiery Cross Reef," *IHS Jane's Defence Weekly*, November 20, 2014.

¹⁸ Ian Sundstrom, "Another Unsinkable Aircraft Carrier," Center for International Maritime Security blog, January 16, 2015, <http://cimsec.org/another-unsinkable-aircraft-carrier/14349>.

¹⁹ See the section entitled "Use of China Coast Guard Ships and Other Ships" in CRS Report R42784, *Maritime Territorial and Exclusive Economic Zone (EEZ) Disputes Involving China: Issues for Congress*, by (name redacted).

²⁰ Andrew S. Erickson and Conor M. Kennedy, "Tanmen Militia: China's 'Maritime Rights Protection' Vanguard," *The National Interest*, May 6, 2015, <http://nationalinterest.org/feature/tanmen-militia-china%E2%80%99s-maritime-rights-protection-vanguard-12816>.

area could thus have potential implications not only for Chinese fishing operations, but also for China's ability to enforce its maritime claims in the region.

Two observers, stating a view also expressed by others, state that the facilities will likely be used to "enforce China's territorial and jurisdictional claims, and bring pressure to bear on warships and coast guard vessels from the other claimants."²¹ In testimony to Congress, a senior U.S. defense official stated, "Militarily speaking, China's land reclamation could enable it, if it chose, to improve its defensive and offensive capabilities, including ... [its] ability to berth deeper draft ships at its outposts and thus to expand its law enforcement and naval presence further south in the South China Sea...."²² By strengthening its operational capabilities in the area, China may hope to discourage rivals from challenging its territorial claims. On the other hand, another observer, noting certain continuing logistical challenges, states that, "Although an airstrip would alleviate some of the PLA's logistical and power projection deficiencies in the South China Sea, monitoring and enforcing China's vast maritime claims would continue to remain a challenge for the PLA."²³

Maritime Domain Awareness (MDA) and Intelligence, Surveillance, and Reconnaissance (ISR)

Bases in the Spratlys could be equipped with air and surface search radars and electronic listening equipment, which would improve China's MDA and its intelligence, surveillance, and reconnaissance (ISR) capabilities in the area. China might also operate maritime patrol and/or AWACS (Airborne Warning and Control System) aircraft from the bases in the Spratlys, which would further improve China's MDA and ISR. Improved MDA and ISR capabilities would support both day-to-day activities and potential combat operations. At an international defense forum in China, a senior PLA Air Force officer emphasized the importance of ISR for China's plans. "There is a need for a base [in the South China Sea] to support our radar system and intelligence-gathering activities," he said. "The search [for missing Malaysia Airlines flight MH370] made us realize we lacked sufficient air force capabilities in the South China Sea. There is a need for a base of operations in the South China Sea for state security and to protect national interests."²⁴

Search and Rescue (SAR)

Bases in the Spratlys could enhance China's ability to conduct search and rescue (SAR) operations in surrounding waters. As the volume of Chinese air and ship operations in the area grows, situations requiring SAR operations may become more frequent. A PLA Rear Admiral emphasized SAR (along with communications) in his explanation for China's land reclamation

²¹ Jeremy Page and Julian Barnes, "China Expands Island Construction in Disputed South China Sea," *Wall Street Journal*, February 18, 2015.

²² David Shear, "Statement of David Shear, Assistant Secretary of Defense for Asian and Pacific Security Affairs before the Senate Committee on Foreign Relations," written testimony, Senate Foreign Relations Committee Hearing on the United States and the East and South China Seas, May 13, 2015.

²³ Ethan Meick, "China's First Airstrip in the Spratly Islands Likely at Fiery Cross Reef," U.S.-China Economic and Security Review Commission, Staff Report, December 18, 2014.

²⁴ PLA Air Force Colonel Jin Zhirui, as quoted by Nanae Kurashige, "Chinese Military Officer Explains Need for Construction in Disputed Spratlys," *Asahi Shimbun*, November 23, 2014.

activities.²⁵ Under the auspices of the International Maritime Organization (IMO), China has been made responsible for maritime SAR in a large part of the South China Sea.

South China Sea Air Defense Identification Zone (ADIZ)

Should China at some point declare an air defense identification zone (ADIZ) over the South China Sea,²⁶ radars stationed at one or more of these sites, and the use of the runway and refueling facilities at Fiery Cross Reef to support operations by intercept aircraft, could enhance the enforcement of that ADIZ. The Commander of U.S. Pacific Command, Admiral Samuel Locklear, testified to Congress in April 2015, “Expanded land features down there also could eventually lead to the deployment of things, such as long- range radars, military and advanced missile systems and it might be a platform for them, if they ever wanted to establish ... an ADIZ zone down there for them to be able to enforce that from.”²⁷ Indeed, depending on the boundaries that China might establish for a South China Sea ADIZ, it might be very difficult for China to enforce the ADIZ without help from radars and aircraft in the Spratlys. (Even with support provided from bases in the Spratlys, China might not be able to enforce the ADIZ fully.)²⁸

A2/AD Systems and Power Projection Systems

Stationing A2/AD systems such as air defenses, ASCMs, tactical aircraft, and antisubmarine warfare (ASW) aircraft at bases in the Spratlys would enhance China’s A2/AD capabilities in the South China Sea.²⁹ The 3,000-meter (9,842.5-foot) runway on Fiery Cross Reef could be used to support refueling operations for aircraft based on Hainan Island and the mainland, extending their operational ranges to the farthest reaches of the South China Sea, and perhaps more distant waters.

Given the finite land areas of the islands China is building in the South China Sea, analysts do not expect China to station large military units with significant power projection capabilities at these bases. Basing smaller numbers of Chinese troops on one or more of these islands, however, could give China a limited amphibious assault capability: With the use of helicopters and amphibious landing craft, and support from Chinese mobile artillery stationed on the outposts, such troops could be used for conducting assaults on nearby islands held by rival claimants.³⁰

²⁵ Zhang Xiyi, “Two Sessions Interview With PLA Navy Rear Admiral Yin Zhuo: Perfect South China Sea Communications, Improve Search and Rescue Capabilities,” *Zhongguo Xinwen She*, March 8, 2015.

²⁶ Some observers believe it is just a matter of time before China declares an ADIZ for the South China Sea. See, for example, Andrew Erickson and Austin Strange, “Pandora’s Sandbox: China’s Island-Building Strategy in the South China Sea,” *Foreign Affairs*, Snapshots blog, July 13, 2014; Kristine Kwok and Minnie Chan, “China Plans Artificial Island in Disputed Spratlys Chain in South China Sea,” *South China Morning Post*, June 7, 2014.

²⁷ U.S. Congress, House Committee on Armed Services, *The Risk of Losing Military Technology Superiority and its Implications for U.S. Policy, Strategy, and Posture in the Asia-Pacific*, 114th Cong., 1st sess., April 15, 2015.

²⁸ It can also be noted that a Chinese ADIZ in the South China Sea could create challenges for civilian air traffic control and safety in the region, since civilian flights in large portions of the South China Sea are managed by air traffic controllers in the Philippines, Singapore, and Vietnam.

²⁹ Some of the South China Sea is too shallow for submarine operations, but ASW aircraft based at Fiery Cross Reef could be used to patrol parts that are both deep enough for submarines and beyond the operational radius of ASW aircraft based on Hainan Island or the Chinese mainland.

³⁰ James Hardy and Sean O’Connor, “China Advances with Johnson South Reef Construction,” *IHS Jane’s Defence Weekly*, September 19, 2014.

Combat Operations

Although bases in the Spratlys would assist China in ways described in previous sections, these bases would be vulnerable to attack in a combat situation, particularly one involving U.S. forces, because they are constructed on foundations of sand, hold back the oceans in some cases with seawalls that could be breached, and concentrate key structures into small spaces. In addition, these bases may have limited capacity for repairing battle damage, and could be difficult to resupply from the mainland, particularly if opposing forces cut air and sea lines of communication.³¹ In general, destroying or disabling a base would be more difficult for the armed forces of a Southeast Asian country than for the U.S. military. The exact circumstances of any conflict scenario, therefore, would factor into determining the outcome. A U.S. Navy surface warfare officer writes, “This [development of Fiery Cross Reef] affects regional navies’ contingency plans for conflict in the South China Sea. They have to anticipate that Chinese maritime operations will have near-continuous air coverage throughout the area.”³²

Although the bases are vulnerable to attack, China could still find ways to get value out of them in a combat situation, particularly in executing a first strike against an adversary in Southeast Asia. While there may be limited capability at Fiery Cross Reef for repairing battle damage to the runway there, China could seek to mitigate the effects of that damage by operating helicopters and short takeoff/vertical landing (STOVL) aircraft from the facility.

In a limited conflict between China and a Southeast Asian country that focused on possession of disputed features in the South China Sea, China could launch small amphibious attacks from its newly enhanced bases, as discussed above. However, if these assaults were successful, China would face a major challenge in supporting and resupplying those troops in a contested maritime environment, according to one expert.³³ In effect, China’s adversary could seek to “starve out” troops that had taken a feature by force.

In a conflict against U.S. forces, these sites and the ships and aircraft deploying from them would be vulnerable to attack, but the need to attack these sites and units (in addition to attacking other A2/AD targets) would increase the amount of time and effort needed to collapse or roll back China’s A2/AD network, and divert U.S. assets from performing other missions. This diversion of assets would likely occur in the opening stages of a conflict, when the United States might have a limited number of on-scene assets. In these ways, the bases, their facilities, and the units operating from them would create new challenges for U.S. military planners, likely requiring modification to U.S. war plans, and would increase risks for U.S. forces in various combat scenarios.

Diplomatic Implications

In its official statements, China has asserted a right to undertake construction projects on “its own” islands and reefs in the South China Sea, while denouncing “illegal” construction projects

³¹ For some of these same reasons, typhoons could significantly damage facilities on these islands and present major complications for troops stationed on them.

³² Ian Sundstrom, “Another Unsinkable Aircraft Carrier,” Center for International Maritime Security blog, January 16, 2015, <http://cimsec.org/another-unsinkable-aircraft-carrier/14349>.

³³ CRS telephone interview with professor at U.S. Naval War College, March 9, 2015.

by other claimants. Several Southeast Asian claimant states, including the Philippines and Vietnam, have protested China's activities. The Philippines has protested that the activity interferes with its case before an UNCLOS arbitral tribunal, as China is altering the state of six features on which the Philippines has asked the tribunal to rule.³⁴

The reclamation activities could further complicate several diplomatic efforts to lower tensions and lessen the risk of conflict, including ASEAN-China discussions over a Code of Conduct in the South China Sea for parties in the region and U.S.-backed proposals, such as a freeze on activity that would change the status quo in disputed areas. In a March 2015 meeting in Jakarta, ASEAN Secretary-General Le Luong Minh said of the activity that “The expansion and illegal [occupation] of islands affect the status quo and [they are] complicating the situation.”³⁵

Observers note that there is a danger that China's reclamation activity could lead others to exercise less restraint. In March 2015, the Philippines announced that it would resume repairs on facilities in the Spratlys—a proposal that a Chinese government spokesman called “hypocritical,” but which the Philippine Foreign Affairs Ministry said was “in no way comparable to China's massive reclamation activities.”³⁶

U.S. officials have urged restraint by all actors in the region. In a February 2015 press briefing, Assistant Secretary of State Daniel Russel said: “... we have advocated for the exercise of self-restraint by claimants in—particularly in terms of large-scale reclamation activities to transform rocks and shoals into outposts that could easily be militarized. That's one reason why we have constructively advocated for self-restraint, for a freeze, for a moratorium on behavior that each of the claimants finds troubling.”³⁷

Chinese Statements and Technology

China's reclamation work in the Spratlys appears to have begun as early as September 2013.³⁸ The Chinese government did not comment substantively on the work until March 2015 and did not offer any explanation of its intentions for use of the artificial islands it was building until April 2015. Since that date, China has acknowledged planned military uses for the islands, while highlighting a stated intention to use the islands to provide “international public services.” On June 16, 2015, Chinese Foreign Ministry Spokesperson Lu Kang released a statement saying the reclamation work would soon end.³⁹

³⁴ Gregory Poling, “The Legal Challenge of China's Island Building,” Center for Strategic and International Studies, Asia Maritime Transparency Initiative, February 18, 2015.

³⁵ IHS-Jane's 360, “China Starts Work on Mischief Reef Land Reclamation,” March 11, 2015.

³⁶ Open Source Center, “Philippines: RP Lashes Back at Beijing over South China Sea,” March 15, 2015.

³⁷ Daniel Russel, Assistant Secretary of State, State's Russel on Priorities for East Asia and Pacific Region. Address to National Press Club, February 4, 2105.

³⁸ 施洋 Shi Yang, “南沙填海利器——中国制造” (“South China Sea Reclamation Weapon—Made in China”) (in Chinese), Guancha, http://www.guancha.cn/ShiYang/2014_09_12_266391.shtml.

³⁹ Ministry of Foreign Affairs of the People's Republic of China, “Foreign Ministry Spokesman Lu Kang's Remarks on Issues Relating to China's Construction Activities on the Nansha Islands and Reefs,” June 16, 2015, http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2535_665405/t1273370.shtml.

Official Chinese Statements

The Chinese government's first detailed comment on the reclamation work came in response to a question at Chinese Foreign Minister Wang Yi's annual press conference in Beijing on March 8, 2015. Wang stated

China is carrying out necessary construction on its own islands and reefs. The construction does not target or affect anyone. We are not like some countries, who engage in illegal construction in another person's house. And we do not accept criticism from others when we are merely building facilities in our own yard. We have every right to do things that are lawful and justified.

This said, China will continue to uphold freedom of navigation in the South China Sea. We will continue to peacefully resolve the disputes through direct dialogue and consultation. And we will continue to play a constructive role in maintaining regional peace and stability. China's policy towards the neighborhood is guided by the principle of sincerity, amity, mutual benefit and inclusiveness. It aims to bring harmony, stability and prosperity to the neighborhood. This policy has not and will not change.⁴⁰

A month later, on April 9, 2015, Foreign Ministry spokesperson Hua Chunying for the first time sought to explain the broad intentions underlying China's reclamation and construction work in the Spratlys. She listed China's goals as

- “optimizing” the functions of the islands and reefs;
- “improving the living and working conditions of personnel stationed there”;
- “better safeguarding territorial sovereignty and maritime rights and interests”;
- “better performing China's international responsibility and obligation[s]”; and
- “satisfying the need of necessary military defense.”⁴¹

Hua said construction on the reefs would allow China to fulfill its international responsibilities in the areas of

- maritime search and rescue;
- disaster prevention and mitigation (including offering ships shelter from typhoons and monsoons);
- marine science and research;
- marine meteorological observation and forecasting;
- environmental protection;
- navigation safety; and
- fisheries services.

⁴⁰ Ministry of Foreign Affairs of the People's Republic of China, “Foreign Minister Wang Yi Meets the Press,” March 8, 2015, http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1243662.shtml.

⁴¹ Foreign Ministry of the People's Republic of China, “Foreign Ministry Spokesperson Hua Chunying's Regular Press Conference,” April 9, 2015, http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2511_665403/t1253488.shtml.

Hua pledged that China would provide such services to “ships of China, neighboring countries and other countries that sail across the South China Sea.” In the face of charges that China’s reclamation activities are ecologically destructive, Hua stated that China was mindful of the need to protect the ecological environment and fishing resources. “The ecological environment of the South China Sea will not be damaged,” she promised.⁴²

More senior Chinese officials have since repeated Hua’s talking points about China’s intentions in other fora. Speaking at the Shangri-La Dialogue in Singapore in May 2015, Admiral Sun Jianguo, Deputy Chief of the People’s Liberation Army General Staff, offered as an example of China’s provision of public services its construction of lighthouses on two of the reefs it occupies, Cuarteron Reef and Johnson South Reef. He defended the scale of China’s reclamation and construction work by stating, “As a major country, the scale and pace of its construction is in line with the international responsibilities and obligations China assumes in the South China Sea.” He added that China had “exercised enormous restraint” in its handling of maritime disputes.⁴³

In his June 16, 2015, statement announcing the planned end to China’s reclamation work, Foreign Ministry Spokesman Lu Kang said that “as planned” the work would be completed “in the upcoming days.” Then, he said, “we will start the building of facilities to meet functional requirements.” The statement also reiterated elements of the previous statements. Specifically, Lu claimed that China’s activities

- “fall within the scope of China’s sovereignty, and are lawful, reasonable and justified”;
- “do not affect the freedom of navigation and overflight enjoyed by all countries in accordance with international law in the South China Sea”; and
- have not and will not “cause damage to the marine ecological system and environment in the South China Sea.”

As for China’s intentions, Lu repeated that “Apart from satisfying the need of necessary military defense, the main purpose of China’s construction activities is to meet various civilian demands and better perform China’s international obligations and responsibilities....”⁴⁴

On June 17, 2015, China’s official Xinhua News Agency cited China’s National Development and Reform Commission as saying that civil facilities China plans to build on the artificial islands include lighthouses, radio navigation stations, and “[f]acilities used for environmental observation, disaster prevention and alleviation, transportation and logistical support.” Xinhua quoted the NDRC as saying such facilities “are meant to ensure local civil needs, provide the international community with public services like assistance and salvage at sea, and promote international cooperation on maritime scientific research.”⁴⁵ China has not disclosed its plans for military facilities.

⁴² Foreign Ministry of the People’s Republic of China, “Foreign Ministry Spokesperson Hua Chunying’s Regular Press Conference,” April 9, 2015.

⁴³ Admiral Sun Jianguo, “Jointly Safeguard Peace and Build a Secure Asia-Pacific Region,” Speech at the 14th Shangri-La Dialogue, May 31, 2015, http://eng.mod.gov.cn/TopNews/2015-05/31/content_4587686.htm.

⁴⁴ Ministry of Foreign Affairs of the People’s Republic of China, “Foreign Ministry Spokesman Lu Kang’s Remarks on Issues Relating to China’s Construction Activities on the Nansha Islands and Reefs,” June 16, 2015, http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2535_665405/t1273370.shtml.

⁴⁵ Xinhua News Agency English Service, “China Plans Civil Facilities in Nansha Islands,” June 17, 2015, (continued...)

China has not so far asserted new legal claims based on its artificial island building. After the United States flew a P-8A Poseidon maritime surveillance plane near the reclaimed features, with a CNN crew on board, China objected to the flight, but not in legal terms. Rather, Chinese Foreign Ministry spokesperson Hong Lei said reconnaissance by U.S. military aircraft “poses a potential threat to the security of China’s maritime features, and is highly likely to cause miscalculation, or even untoward maritime and aerial incidents.”⁴⁶

Unofficial Chinese Commentary

The theme of restraint is common in Chinese narratives related to the reclamation work. They generally depict China as playing catch-up to rival claimants, who are portrayed as having engaged in decades of construction and land reclamation work on features in the sea, as well as exploitation of economic resources, including oil. The United States is portrayed as having turned a blind eye to this activity. The narrative presented in a December 2014 article by the *Dongguan Daily’s* military analyst is representative:

China has always taken a cautious approach, adhered to the ‘Declaration on the Conduct of Parties in the South China Sea,’ and avoided ‘showdowns,’ but China’s restraint has not been reciprocated. With the support of external big powers, some neighboring countries in the South China Sea have further intensified [their efforts] and ‘staked out’ the South China Sea. In the face of such an urgent situation, China has realized that just relying on diplomatic declarations of sovereignty and protests is insufficient to stop intensified encroachment on [China’s] interests, and so in recent years, China has started to change its thinking about rights protection.⁴⁷

Chinese accounts often claim the following points.

- China occupies just 7 features in the Spratly Islands group, while Vietnam occupies 29, the Philippines 8, Malaysia 5, and Taiwan 1.⁴⁸ (Non-Chinese sources sometimes give different numbers.) Chinese officials routinely refer to other claimants who occupy features in the Spratlys as having “illegally invaded and occupied” China’s islands and reefs.⁴⁹

(...continued)

http://news.xinhuanet.com/english/2015-06/17/c_134335391.htm.

⁴⁶ Ministry of Foreign Affairs of the People’s Republic of China, “Foreign Ministry Spokesperson Hong Lei’s Regular Press Conference,” May 22, 2015, http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2511_665403/t1266162.shtml. Jim Sciutto, “Exclusive: China Warns U.S. Surveillance Plane,” CNN, May 26, 2015, <http://www.cnn.com/2015/05/20/politics/south-china-sea-navy-flight/>.

⁴⁷ Xu Xu 徐旭, “中国海陆空立体掌控南海” (“China’s Sea, Ground, and Air Dimensional Control of the South China Sea”) (in Chinese), *Dongguan Daily*, December 8, 2014.

⁴⁸ 杨波 “被越南非法侵占的南沙群岛岛礁” (“Spratlys Islands and Reefs Illegally Occupied by Vietnam,” 兵器知识 (Ordnance Knowledge), No. 3, 2010. A 2014 position paper by China’s Foreign Ministry accused the Philippines of having “illegally occupied” eight features in the Spratly Islands: Nanshan Island, Flat Island, Thitu Island, Loaita Island, Northeast Cay, West York Island, Loaita Nan, and Commodore Reef, Foreign Ministry of the People’s Republic of China, “Position Paper of the Government of the People’s Republic of China on the Matter of Jurisdiction in the South China Sea Arbitration Initiated by the Republic of the Philippines,” December 7, 2014, <http://www.fmprc.gov.cn/ce/cegv/eng/zywjjh/t1217446.htm>.

⁴⁹ See, for example, Ministry of Foreign Affairs of the People’s Republic of China, “Foreign Ministry Spokesperson Hua Chunying’s Regular Press Conference,” May 12, 2015.

- The number of features Vietnam occupies in the Spratly Islands, and the number of troops it has stationed on them, both grew substantially over the 1990s. By one Chinese account, in 1993 Vietnam occupied 24 features and had 600 soldiers stationed on them; by 2002, Vietnam occupied 29 features and had as many as 2,020 soldiers stationed on them.⁵⁰
- Even before China's recent reported construction of an airstrip on Fiery Cross Reef, four other claimants had already built airfields big enough for large fighter planes on features they control in the Spratly Islands. Those airfields are on Itu Aba Island, occupied by Taiwan; Spratly Island, occupied by Vietnam; Thitu Island, occupied by the Philippines; and Swallow Reef, occupied by Malaysia.⁵¹ China and Brunei are the only claimants that do not currently have operational air bases in the Spratlys.
- Other countries have engaged in significant land reclamation on disputed features in the Spratly Islands since the 1970s. China's Foreign Ministry has charged, for example, that Vietnam "carried out large-scale reclamation on over 20 maritime features" in the Spratly Islands and "built on them a considerable amount of fixed facilities such as harbor basins, airstrip, missile bases, office buildings, barracks, hotels and lighthouses." The ministry also raised the Philippines' construction of an airport and dock at Thitu Island.⁵²
- Other claimants allegedly have drilled 1,380 oil wells in the South China Sea, with annual production as high as 423 million barrels (50 million tonnes). China says it has drilled no wells, although since 2012, it has several times sent its Haiyang Shiyou 981 platform into the South China Sea to explore for oil and natural gas.⁵³

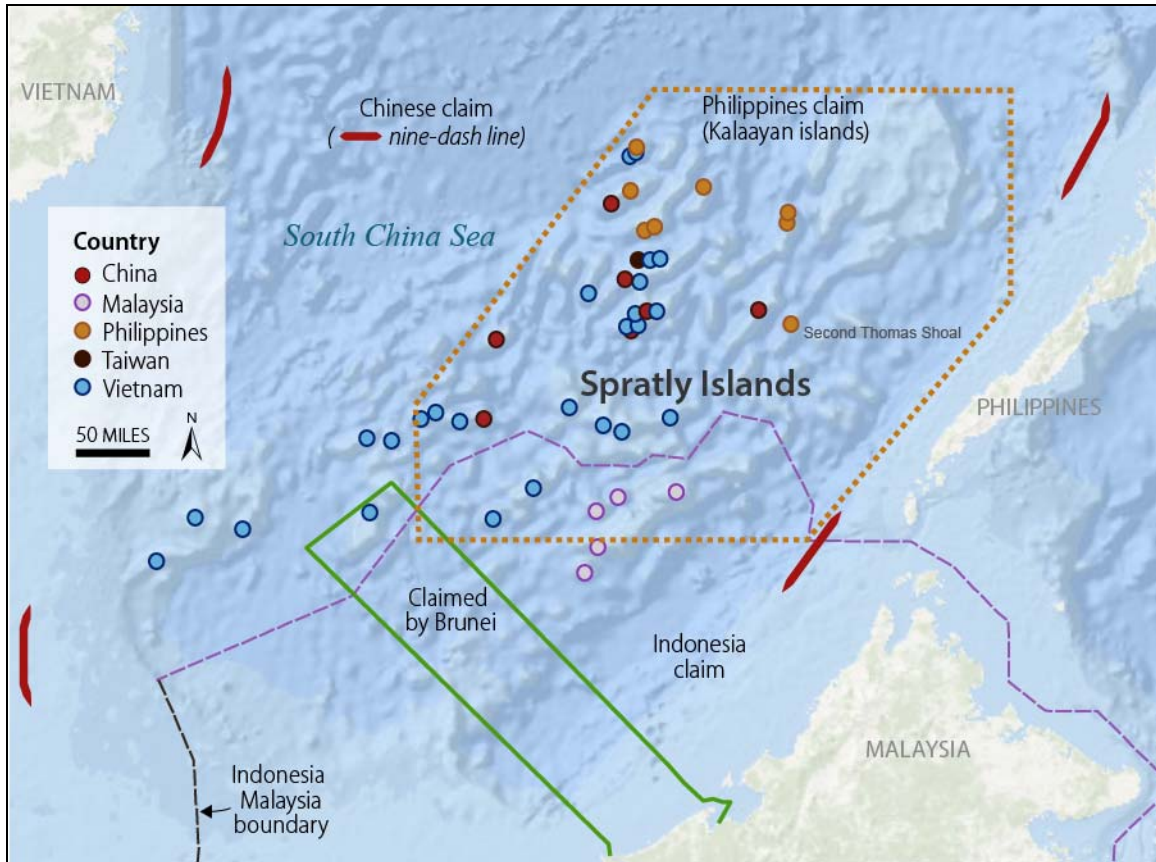
⁵⁰ Xi Zhigang, 席志刚, 中国南沙前进机场锁定永暑礁? ("Is China's Forward-based Airport in the South China Sea Set for Fiery Cross Reef?") (in Chinese), *China Newsweek* (中国新闻周刊), October 16, 2014, <http://news.inewsweek.cn/detail-1029-1.html>.

⁵¹ Ibid.

⁵² Foreign Ministry of the People's Republic of China, "Foreign Ministry Spokesperson Hong Lei's Regular Press Conference," April 29, 2015, http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2511_665403/t1259519.shtml.

⁵³ Xu Xu, 徐旭, "中国海陆空立体掌控南海" ("China's Sea, Ground, and Air Dimensional Control of the South China Sea") (in Chinese), *Dongguan Daily*, December 8, 2014. See also Wu Qi (吴琪), 菲律宾的战略意图——黄岩岛为什么重要 ("The Philippines' Strategic Intent: Why Scarborough Reef Is Important"), *Life Week* (三联生活周刊), May 16, 2012, <http://www.lifeweek.com.cn/2012/0516/37226.shtml>.

Figure 2. Occupied Features in the Spratlys (April 2015)



Source: State Department map, adapted by CRS.

The Role of New Technology

Chinese reports credit new technology for China’s success in rapidly transforming Chinese-controlled features in the Spratlys. China has deployed a sophisticated new dredger known as the Tianjing, or “Sky Whale,” operated by state-owned Tianjin Dredging Co., Ltd, a unit of China Communications Construction Company, Ltd. (See image below.) According to reports on the website of the vessel’s designer and owner, the Tianjing was designed by Shanghai Jiaotong University and the German engineering firm Vosta LMG and built by China Merchants Heavy Industry Yard in Shenzhen between April 28, 2008 and January 2010. It is now the third largest self-propelled cutter suction dredger in the world, and the largest in Asia, with the ability to dredge to a depth of 30 meters (98 feet) and to move 4,500 cubic meters (159,000 cubic feet) of clay, compacted sand, gravel, and rocks per hour.⁵⁴ Because it is self-propelled, it can make its own way to the southern part of the South China Sea, unlike non-self-propelled vessels, which

⁵⁴ “天鲸号,” (“The Tianjing”) , October 12, 2013, on the website of the CCC Tianjin Dredging Co. Ltd. <http://www.tjhdj.com/index.php?mod=article&act=view&cid=46&id=397>;
 “天鲸号’自航绞吸式挖泥船完成航行试验[图]” (“The Tianjing Self-Propelled Cutter Suction Dredger Completes Sea Trials (Image),” January 4, 2010, website of Shanghai JiaoTong University, <http://news.sjtu.edu.cn/info/1007/74411.htm>.

need to be towed. Once in place, the Tianjing can easily shuttle among all the Spratlys reefs that China occupies.

Figure 3. The Tianjing (“Sky Whale”) Self-Propelled Cutter Suction Dredger
Involved in Reclamation Work in the Spratly Islands



Source: “天鲸号’自航绞吸式挖泥船完成航行试验[图]” (“The Tianjing Self-Propelled Cutter Suction Dredger Completes Sea Trials (Image),” January 4, 2010, website of Shanghai Jiaotong University, <http://news.sjtu.edu.cn/info/1007/74411.htm>).

Writing on a popular Chinese news aggregator site, *Guancha*, commentator Shi Yang reported that the Tianjing spent 193 days moving among five reefs in the Spratly Island group between September 2013 and June 2014. Shi estimated that in that time, the Tianjing blasted more than 10 million cubic meters (13 million cubic yards) of sand and sea water onto the reefs, or the equivalent of three times the volume of concrete used to build the Hoover Dam. “In this reclamation contest involving national will and capacity, where China is coming from behind, the advanced technology and superior products of the industrial departments will undoubtedly be crucial,” Shi wrote.⁵⁵

⁵⁵ “施洋Shi Yang, “南沙填海利器——中国制造” (“South China Sea Reclamation Weapon – Made in China”) (in Chinese), *Guancha*, http://www.guancha.cn/ShiYang/2014_09_12_266391.shtml. For information on the Tianjing, see also James Hardy, Krispen Atkinson, Richard Hurley, and Michael Cohen, “China Goes All Out with Major Island Building Project in Spratly’s,” *IHS Jane’s Defence Weekly*, June 20, 2014, <http://www.janes.com/article/39716/china-goes-all-out-with-major-island-building-project-in-spratlys>.

Other Countries' Land Reclamation Efforts

Land reclamation is a common activity around the world. Many coastal and riparian cities in the United States and other countries have had their land areas expanded through reclamation projects. The Netherlands is a well-known case of a country that has expanded its land area by a substantial percentage through reclamation. Singapore is another example.⁵⁶ A Singaporean land reclamation project in the Straits of Johor became the subject of an international legal case between Singapore and Malaysia that was settled in 2005.⁵⁷ More recently, Singaporean officials have expressed concerns about a Malaysian land reclamation project in the Straits of Johor.⁵⁸

Numerous countries around the world, as part of their land reclamation activities, have built artificial islands in harbors and waters close to their natural mainland coasts. Some of the largest of these artificial islands have been built by Japan.

Within the Spratlys, all the claimants except Brunei have undertaken reclamation on occupied features, although observers and U.S. government officials argue that China's activity is much more extensive than that of all the others combined. Satellite imagery released in April 2015 by CSIS's Asia Maritime Transparency Initiative indicated that Vietnam had done reclamation recently on two of the Spratly landmasses that it occupies, Sand Cay and West Reef.⁵⁹ The report indicated that Vietnam has reclaimed a total of 200,000 square meters on features it occupies in the Spratlys. The Defense Department's Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2015 reported that Taiwan began a modest land reclamation effort at Itu Aba Island by April 2014 and has reclaimed at least approximately five acres of land near the island's airstrip.⁶⁰

⁵⁶ See, for example, "Reclaimed Land in Singapore: Nation-Building in the Most Literal Sense," *The Basement Geographer*, February 3, 2011, accessed March 11, 2015, <http://basementgeographer.com/reclaimed-land-in-singapore-nation-building-in-the-most-literal-sense/>; and "Such Quantities of Sand," *The Economist*, February 28, 2015.

⁵⁷ See Case Concerning Land Reclamation by Singapore In and Around the Straits of Johor (Malaysia v. Singapore), Provisional Measures, Case No. 12, International Tribunal for the Law of the Sea, accessed March 11, 2015, <https://www.itlos.org/cases/list-of-cases/case-no-12/>; and Land Reclamation by Singapore In and Around the Straits of Johor (Malaysia v. Singapore), Permanent Court of Arbitration, accessed March 11, 2015, http://www.pca-cpa.org/showpage.asp?pag_id=1154. See also Tommy Koh and Jolene Lin, "The Land Reclamation Case: Thoughts and Reflections," accessed March 11, 2015, http://lkyspp.nus.edu.sg/wp-content/uploads/2013/04/pa_tk_The-Land-Reclamation-Case-Thoughts-and-Reflections-_2007.pdf.

⁵⁸ See, for example, "Vivian Balakrishnan Restates Singapore's Concerns over Johor Strait Land Reclamation Projects During KL Visit," *The Straits Times*, November 25, 2014, accessed March 11, 2015, <http://www.straitstimes.com/news/singapore/more-singapore-stories/story/vivian-balakrishnan-restates-singapores-concerns-over-jo>; Yvonne Lim, "Malaysian Land Reclamation Work Suspended Pending Environment Impact Reports," *Today*, November 29, 2014, accessed March 11, 2015, <http://www.todayonline.com/singapore/malaysian-land-reclamation-work-suspended-pending-environment-impact-reports>; Marissa Lee, "Controversial Johor Strait Land Reclamation Project Forest City Gets the Go-Ahead," *The Straits Times*, January 14, 2015, accessed March 11, 2015, <http://www.straitstimes.com/news/business/more-business-stories/story/malaysia-okays-1386-ha-reclamation-controversial-johor-str>; "Johor Chief Minister: Singapore Has Also Done Massive Land Reclamation," *Asia One*, January 18, 2015, accessed March 11, 2015, <http://news.asiaone.com/news/singapore/johor-chief-minister-singapore-has-also-done-massive-land-reclamation>.

⁵⁹ Asia Maritime Transparency Initiative, "Sandcastles of Their Own: Vietnamese Expansion in the Spratly Islands." <http://amti.csis.org/vietnam-island-building>.

⁶⁰ Department of Defense, "Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2015."

Between 1936 and 1964, the U.S. military employed land reclamation to enlarge the main island of Johnston Atoll, a U.S. territory in the North Pacific that is located several hundred miles southwest of Hawaii. The island's size was increased from an original area of 46 acres to a final area of 596 acres—an increase of more than 10 times. Reclamation work also increased the area of another island in the atoll, Sand Island, from 10 acres to 22 acres, and created two new islands in the atoll, called North and East, of 25 and 18 acres, respectively.⁶¹ The atoll was used by the U.S. military for various purposes over the course of several decades, until 2004, and is administered by the U.S. Fish and Wildlife Service as a National Wildlife Refuge.⁶²

U.S. Strategy

The question of whether the United States has a strategy for dissuading China from continuing its land reclamation activities, or for responding to those activities, and if so, whether that strategy is adequate, is part of a larger question. That larger question is whether the United States has an overarching strategy for countering China's various so-called "salami slicing" tactics for incrementally gaining a greater degree of control over land features, waters, and air space in the East and South China Seas, and if so, whether that overarching strategy is adequate. This larger question is addressed at some length in CRS Report R42784, *Maritime Territorial and Exclusive Economic Zone (EEZ) Disputes Involving China: Issues for Congress*, by (name redacted) (see the section "U.S. Strategy for Countering "Salami-Slicing" Strategy"). As discussed in that report, some observers believe that the United States does not have a coordinated overarching strategy for countering China's salami-slicing tactics, or that the current U.S. strategy is inadequate. The report reprints at some length suggestions from these observers as to what the United States might do to implement a stronger strategy.⁶³

U.S. officials have expressed strong concerns about China's land reclamation activities on the grounds that they are destabilizing and inconsistent with commitments China has made under the non-binding 2002 DOC, and have also asked China to halt the activities.⁶⁴ One specific warning that the United States has issued to China is on the subject of a potential Chinese ADIZ in the South China Sea. In an interview in January 2014, a senior official at the National Security Council stated, "We have been very clear with the Chinese that we would see that (setting of another ADIZ) as a provocative and destabilizing development that would result in changes in our presence and military posture in the region."⁶⁵ A senior official from the U.S. Defense

⁶¹ See "Johnston Atoll, About the Refuge," U.S. Fish and Wildlife Service, accessed March 11, 2015, http://www.fws.gov/refuge/Johnston_Atoll/about.html. For an unverified map showing the stages of land expansion at Johnston Atoll, see "America's Perilous Habit of Undervaluing Islands," *Next Navy*, March 30, 2014, accessed March 11, 2015, <http://nextnavy.com/americas-perilous-habit-of-undervaluing-islands/>.

⁶² See "Johnston Atoll," U.S. Fish and Wildlife Service, accessed March 15, 2015, http://www.fws.gov/refuge/Johnston_Atoll/.

⁶³ One analyst has questioned whether, as China becomes stronger over the mid- to long-term, the United States should stake its credibility on ensuring that a non-coercive process is followed in every instance. Michael Swaine, "Beyond American Predominance in the Western Pacific: The Need for a Stable U.S.-China Balance of Power," Carnegie Endowment for International Peace, April 20, 2015, <http://carnegieendowment.org/2015/04/20/beyond-american-predominance-in-western-pacific-need-for-stable-u.s.-china-balance-of-power>.

⁶⁴ See, for example, Jeremy Page and Julian E. Barnes, "China Expands Island Construction in Disputed South China Sea," *Wall Street Journal*, February 18, 2015.

⁶⁵ NSC Senior Director Evan Medeiros as quoted by Jun Kaminishikawara, "U.S. Could Change Military Posture If China Expands Air Defense Zone," *Kyodo News Agency*, January 31, 2014.

Department stated in May 2015, “We are actively assessing the military implications of land reclamation and are committed to taking effective and appropriate action.”⁶⁶

The United States has flown—and publicized—surveillance flights near several of the reclaimed features, prompting Chinese warnings to leave the area.⁶⁷ Some observers argue that one aspect of U.S. strategy could be publicizing the extent of the reclamation and construction, and the United States’ intention to support freedom of navigation.⁶⁸ In his speech at the Shangri-La Dialogue, Defense Secretary Carter said, “There should be no mistake: the United States will fly, sail, and operate wherever international law allows, as U.S. forces do all around the world.”⁶⁹

The Commander of the U.S. Navy Seventh Fleet, Vice Admiral Robert Thomas, has suggested that the U.S. and Japanese militaries conduct combined air patrols in the South China Sea, and that countries in ASEAN form a combined maritime patrol in the South China Sea—an effort, he stated, that the U.S. Navy would support.⁷⁰ More generally, the United States is taking steps to increase its security cooperation with Japan, the Philippines, Vietnam, and Malaysia, and to increase Manila and Hanoi’s maritime capabilities. This has included providing equipment and infrastructure support to the Vietnamese coast guard, helping the Philippines build a National Coast Watch System to improve its maritime domain awareness, and conducting sea surveillance exercises with Indonesia which recently included flight portions over the South China Sea for the first time.⁷¹

Whether individual U.S. actions (other than statements directly referencing the land reclamation activities) are being taken in response to China’s military modernization effort, its salami-slicing tactics in general, its land reclamation efforts in particular, or some combination of these things is difficult to discern. Whether there are additional, non-public elements of the current U.S. strategy for dissuading China from continuing its land reclamation activities is not clear.

Short of direct U.S. military intervention, it is not clear what the United States can do to directly stop China’s land reclamation activities. U.S. options for responding to those activities thus appear to consist of potential actions for imposing costs on China for continuing those activities. With many of these options, as with current policy, there is a risk that the United States may either provoke strong Chinese reactions or be seen as ineffectual if China does not change course.

In recent weeks, several observers have presented ideas on potential U.S. options for imposing such costs, including the following:

⁶⁶ David Shear, “Statement of David Shear, Assistant Secretary of Defense for Asian and Pacific Security Affairs before the Senate Committee on Foreign Relations,” written testimony, Senate Foreign Relations Committee Hearing on the United States and the East and South China Seas, May 13, 2015.

⁶⁷ “China Cautions U.S. Navy on Patrols in the South China Sea,” CNN, May 14, 2015.

⁶⁸ Mira Rapp-Hooper, “In Defense of Facts in the South China Sea,” CSIS Asia Maritime Transparency Initiative. June 2, 2015. <http://amti.csis.org/in-defense-of-facts-in-the-south-china-sea/>.

⁶⁹ Department of Defense, “IISS Shangri-la Dialogue: ‘A Regional Security Architecture Where Everyone Rises,’” May 30, 2015.

⁷⁰ Sharon Chen, “U.S. Navy Urges Southeast Asian Patrols of South China Sea,” *Bloomberg Business*, March 17, 2015; Tim Kelly and Nobuhiro Kubo, “U.S. Would Welcome Japan Air Patrols in South China Sea,” Reuters, January 29, 2014.

⁷¹ Prasanth Parameswaran, “US Launches New Maritime Security Initiative at Shangri La Dialogue 2015,” *The Diplomat*, June 2, 2015.

- stronger U.S. statements to China about the consequences for China of continuing the land reclamation activities, and more generally, changing the U.S. tone of conversation with China;
- better publicizing China's land reclamation activities and other actions in the area, as well as their potential implications for international law and the treatment of the global commons, to the public and governments in the region and globally;
- opposing land reclamation activities in disputed waters by both China and other claimants;
- strengthening the capacity of allied and partner countries in the region to maintain maritime domain awareness (MDA), coast guard patrols, and fishing fleet operations in the area;
- further strengthening U.S. security cooperation with allied and partner countries in the region, and with India, to the point of creating a coalition for balancing China's assertiveness;
- increasing arms sales to Taiwan;⁷² and
- increasing U.S. Navy operations in the region.⁷³

In late March 2015, the Senate agreed to S.Amdt. 705 to the Senate budget resolution S.Con.Res. 11, which enables the Senate Budget Committee to fund a “comprehensive, multi-year partner capacity building and security cooperation plan in the Indo-Pacific region, including for a regional maritime domain awareness architecture and for bilateral and multilateral exercises, port calls, and training activities of the United States Armed Forces and Coast Guard....” The cooperative security activities envisioned in this amendment, in particular joint MDA operations, could be a short-term focus for congressional efforts to adjust U.S. security strategy in Southeast Asia. The National Defense Authorization Act introduced by the Senate Armed Services Committee for FY2016 (S. 1376) authorizes \$50 million to provide equipment, supplies, and training to South East Asian nations to build maritime domain awareness capabilities to address growing maritime sovereignty challenges in the South China Sea. At the multilateral Shangri-La Dialogue in May, 2015, Defense Secretary Ashton Carter announced a five-year, \$425 million Southeast Asia Maritime Security Initiative to assist regional nations improve maritime capabilities.⁷⁴

⁷² Although Taiwan's South China Sea claims mirror China's, there has been no indication that China may seek forced control over Itu Aba, the one South China Sea landmass that Taiwan controls.

⁷³ “China's Menacing Sandcastles in the South China Sea,” War on the Rocks, March 2, 2015 (a collection of short writings by several authors; see in particular those by Ely Ratner, Shawn Brimley, Robert Haddick, Mira Rapp-Hooper, and Zack Cooper); Richard Fontaine, “Chinese Land Reclamation Pushes Boundaries,” *Wall Street Journal*, March 3, 2015; Michael Mazza, “Obama's China Tool Kit: In Need of Serious Repair,” American Enterprise Institute, March 5, 2015; Harry Kazianis, “Superpower Showdown: America Can Stop Chinese Aggression in Asia,” *National Interest*, March 6, 2015; Michael J. Green and Mira Rapp Hooper, “China's New Maritime Provocation,” *Washington Post*, March 13, 2015; John Schaus, “Concrete Steps for the U.S. in the South China Sea,” War on the Rocks, March 16, 2015, <http://warontherocks.com/2015/03/concrete-steps-for-the-u-s-in-the-south-china-sea/>.

⁷⁴ Prashanth Parameshwaran, “US Announces New Maritime Security Initiative at Shangri-La Dialogue 2015,” *The Diplomat*, June 2, 2015.

Looking Ahead

Several events in the coming months may be affected by the reclamation activities or by instability in the South China Sea more generally. These events may present opportunities for Congress to play a role.

- The Philippines UNCLOS case: The UNCLOS Arbitral Tribunal received the Philippines' response to its initial questions on March 15, 2015. Some of the questions the tribunal is considering involve the land features under reclamation. The tribunal could make a decision on whether it has standing to make a ruling in the second half of 2015. A subsequent ruling could then come as early as the first half of 2016.
- Possible energy exploration: The regional monsoon season makes deep-sea exploration difficult during much of the year. However, the calm season typically starts in April or May. In 2014, the onset of this calm period coincided with China's decision to move a floating oil exploration rig into waters disputed with Vietnam.
- Diplomatic events: U.S. officials may also have the opportunity to raise the issue at meetings including the ASEAN Regional Forum (August 6) and the East Asia Summit (November 22).

Other potential triggering events related specifically to China's land reclamation activities that Congress may monitor and that U.S. strategy may take into account include but are not limited to the following:

- The possible release of satellite evidence that China has completed construction of specific infrastructure—such as airbases, ports, or radar systems—on reclaimed features;
- Chinese public statements or legal filings claiming that previously submerged features or rocks now qualify as islands for purposes of claiming territorial waters and an exclusive economic zone (EEZ);
- The use of newly built island facilities to support Chinese military, China Coast Guard, fishing, or oil and gas exploration activities; and
- The stationing of Chinese military forces, paramilitary forces, fishing boats, oil and gas exploration assets, and residents at newly built island facilities.

Under such scenarios, or others, Congress has a range of options to address the state of U.S. policy. Many of these options are discussed in CRS Report R42784, *Maritime Territorial and Exclusive Economic Zone (EEZ) Disputes Involving China: Issues for Congress*, by (name redacted), and CRS Report R42930, *Maritime Territorial Disputes in East Asia: Issues for Congress*, by (name redacted), (name redacted), and (name redacted). As noted above, as tensions have risen over recent years Congress has played an important oversight role over the Administration's approaches to maritime security and diplomacy in the region. Many observers argue that this role has become particularly important against the backdrop of this new development in China's territorial assertions in the region.

Author Contact Information

(name redacted)
Specialist in Asian Affairs
[redacted]@crs.loc.gov, 7-....

(name redacted)
Legislative Attorney
[redacted]@crs.loc.gov, 7-....

(name redacted)
Specialist in Asian Affairs
[redacted]@crs.loc.gov, 7-....

(name redacted)
Specialist in Naval Affairs
[redacted]@crs.loc.gov, 7-....

(name redacted)
Analyst in Asian Affairs
[redacted]@crs.loc.gov, 7-....

EveryCRSReport.com

The Congressional Research Service (CRS) is a federal legislative branch agency, housed inside the Library of Congress, charged with providing the United States Congress non-partisan advice on issues that may come before Congress.

EveryCRSReport.com republishes CRS reports that are available to all Congressional staff. The reports are not classified, and Members of Congress routinely make individual reports available to the public.

Prior to our republication, we redacted names, phone numbers and email addresses of analysts who produced the reports. We also added this page to the report. We have not intentionally made any other changes to any report published on EveryCRSReport.com.

CRS reports, as a work of the United States government, are not subject to copyright protection in the United States. Any CRS report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS report may include copyrighted images or material from a third party, you may need to obtain permission of the copyright holder if you wish to copy or otherwise use copyrighted material.

Information in a CRS report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to members of Congress in connection with CRS' institutional role.

EveryCRSReport.com is not a government website and is not affiliated with CRS. We do not claim copyright on any CRS report we have republished.