

## CHAPTER 2

### U.S.-CHINA SECURITY RELATIONS

#### SECTION 1: YEAR IN REVIEW: SECURITY AND FOREIGN AFFAIRS

##### **Introduction**

The year 2016 saw Chinese President and General Secretary of the Chinese Communist Party (CCP) Xi Jinping continue to consolidate and grow the power of China's military and security apparatus. This was highlighted in particular by his ambitious new military reform and reorganization; China's continued assertiveness in the South China Sea, even in the face of an international arbitral ruling; demonstrations of the Chinese military's efforts to improve its force projection capabilities; and the Chinese military's expanding global engagement and footprint. This section, based on Commission hearings, discussions with outside experts, and open source research and analysis, discusses these and other trends and developments related to China's territorial disputes, military reforms and modernization, defense budget and procurements, military exercises and training, international defense engagement, and security relations with the United States.

##### **Major Developments in China's National Security and Military Modernization in 2016**

###### ***China's Maritime Disputes in the South China Sea***

After several years of taking increasingly assertive steps to strengthen its position and undermine those of other claimants in the South China Sea disputes,\* in 2016 China for the first time faced an international legal ruling regarding its actions in the South China Sea. In July, an arbitral tribunal at the Permanent Court of Arbitration in The Hague issued a ruling on the merits of a case initiated in 2013 by the Philippines † regarding China's claims and activities in the South China Sea. The Philippines' case asked the tribunal, among other things, to declare whether: (1) China's claims based on the nine-dash line—China's vague and expansive demarcation of its claim to around 90 percent of the South China Sea—are invalid under the UN Convention on the Law of the Sea

---

\*Parties to South China Sea disputes include Brunei, China, Malaysia, the Philippines, Taiwan, and Vietnam.

† In 2014, Vietnam submitted a formal statement of interest in the case to the Permanent Court of Arbitration. Carl Thayer, "Vietnam Files Statement of Interest with the Permanent Court of Arbitration," *cogitASIA* (Center for Strategic and International Studies blog), December 15, 2014.

(UNCLOS);\* (2) certain land features in the South China Sea are rocks, islands, or low-tide elevations;† and (3) China has interfered with the Philippines’ right to exploit resources within the latter’s claimed waters.<sup>1</sup>

In a blow to the credibility of China’s claims, the tribunal ruled overwhelmingly in the Philippines’ favor. The most notable findings of the 479-page ruling included:

- China’s claims to historic rights and resources within the nine-dash line (see Figure 1) have no legal basis.<sup>2</sup>
- None of China’s claimed land features in the Spratly Islands are islands (and as such, none of China’s claimed features can generate more than 12 nautical miles [nm] of surrounding maritime territory).<sup>3</sup>
- China violated the Philippines’ sovereign rights by conducting the following activities in the Philippines’ exclusive economic zone: interfering with Philippine oil exploration activities, prohibiting Filipino fishermen from operating, failing to stop Chinese fishermen from operating, and building artificial islands.<sup>4</sup>
- China violated its marine environmental protection obligations under UNCLOS by causing “severe harm to the coral reef environment” with its land reclamation activities and by not preventing the harvesting of endangered species by Chinese fishermen.<sup>5</sup>

While many countries in the region and around the world responded to the ruling with statements of support for international law,<sup>6</sup> China’s initial response was to reject and attempt to discredit the ruling.<sup>7</sup> Also, in early August, China’s Supreme People’s Court announced that foreign fishermen who illegally fish in China’s “jurisdictional waters” could be imprisoned for up to one year.<sup>8</sup> The actions China could take in the longer term to consolidate its territorial claims and register its displeasure with the ruling include, among other things, one or more of the following: increasing its presence and activities in disputed waters; adding arms or defenses to land features it occupies; conducting land reclamation on Scarborough Reef—a coral reef atoll claimed by China, the Philippines, and Taiwan—over which China effectively secured control in 2012; and declaring an air defense identification zone (ADIZ)‡ over part of the South China Sea.

\* China is a party to UNCLOS.

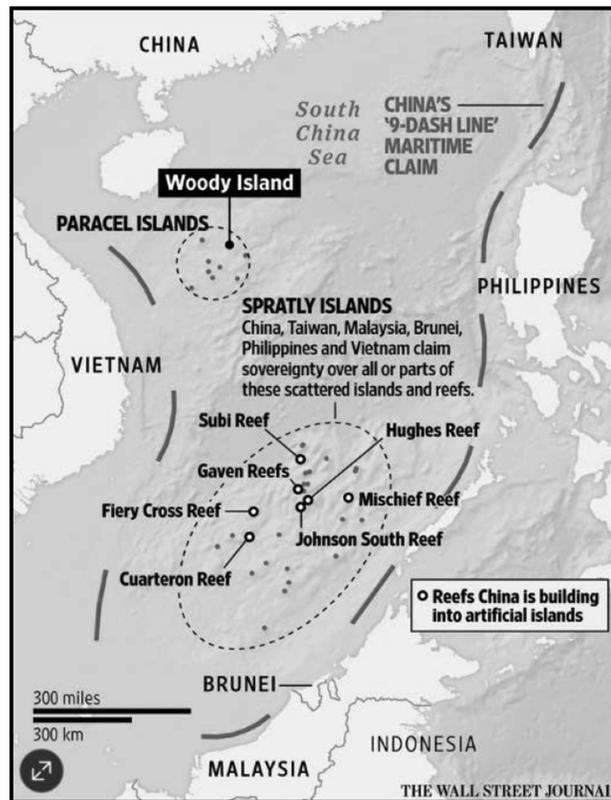
† The distinction, as defined by UNCLOS, between an island, rock, and low-tide elevation is important because each type of feature generates a different maritime entitlement. Islands, which must be above water at high tide and be capable of sustaining human habitation or economic activity of their own, can generate exclusive economic zones. (An exclusive economic zone is a 200-nautical-mile zone extending from a country’s coastline, within which that country can exercise exclusive sovereign rights to explore for and exploit natural resources, but over which it does not have full sovereignty.) Rocks, which are defined as being above water at high tide but unable to sustain human habitation or economic activity, only generate a 12-nautical-mile territorial sea. Low-tide elevations are land features that are submerged at high tide. Unless they are located within the territorial sea of another island or mainland coastline, they do not generate any maritime entitlements. UN Convention on the Law of the Sea, “Part 8: Regime of Islands”; UN Convention on the Law of the Sea, “Part 2: Territorial Sea and Contiguous Zone”; and UN Convention on the Law of the Sea, “Part 5: Exclusive Economic Zone.”

‡ An ADIZ is a publicly declared area, established in international airspace adjacent to a state’s national airspace, in which the state requires that civil aircraft provide aircraft identifiers and location. Its purpose is to allow a state the time and space to identify the nature of approaching aircraft before those aircraft enter national airspace in order to prepare defensive

The ultimate impact of the ruling on China's behavior and the status of the disputes is not yet clear. Because the ruling has no inherent enforcement mechanism, the onus is on the international community to support and initiate means of enforcing the ruling. Among the potential actions for enforcing the tribunal's ruling are freedom of navigation operations, such as those undertaken by the U.S. Navy, and actions in other international legal institutions. For example, Mark Rosen, senior vice president at CNA, a nonprofit research and analysis organization, writes that "the Philippines could petition the International Court of Justice for an order enforcing the tribunal's decision since China cannot veto such a petition and the order would be legally binding upon China."<sup>9</sup>

The ruling aside, China's efforts to advance its position in the South China Sea continued unabated in 2016.

**Figure 1: Map of the South China Sea**



Source: Chun Han Wong, "U.S., China Trade Familiar Accusations over South China Sea," *Wall Street Journal*, February 18, 2016.

measures if necessary. In November 2013, China established an ADIZ in the East China Sea that encompasses the Senkaku Islands, which Japan administers but over which both countries claim sovereignty. An ADIZ does not have any legal bearing on sovereignty claims. Kimberly Hsu, "Air Defense Identification Zone Intended to Provide China Greater Flexibility to Enforce East China Sea Claims," *U.S.-China Economic and Security Review Commission*, January 14, 2014.

*Continued Infrastructure Development on Artificial Islands*

After finishing major land reclamation work on seven coral reef atolls in October 2015, China continues to build infrastructure on its 3,200 acres of artificial islands.<sup>10</sup> This construction in the Spratly Islands will help China advance its position in the southern portion of the South China Sea by bolstering its ability to enhance and sustain its maritime law enforcement and military presence. The infrastructure will also serve to improve China's ability to detect and track foreign maritime forces and fishing boats.\*<sup>11</sup> China has completed runways on three outposts.<sup>12</sup> In January 2016, three Chinese commercial aircraft landed on Fiery Cross Reef—the first aircraft landing on a Chinese runway in the Spratly Islands—and in April a People's Liberation Army (PLA) aircraft landed there.<sup>13</sup> The latter was the first publicized landing by military aircraft on one of these land features.<sup>14</sup> Within one day of the tribunal's ruling in July, several commercial aircraft requisitioned by the Chinese government had landed on Mischief and Subi reefs.<sup>15</sup> China is also building reinforced aircraft hangars on Fiery Cross, Mischief, and Subi reefs. Each outpost will have enough hangars for 24 fighters and three to four larger military aircraft,<sup>16</sup> such as small transport aircraft (see Figure 2).

**Figure 2: Hangars under Construction on China's South China Sea Outposts at Fiery Cross Reef (Left) and Subi Reef (Middle, Right) in the Spratly Islands**



Source: Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "Build It and They Will Come," August 9, 2016.

China also continues to build infrastructure to enable large ships to access these outposts and has built surveillance systems, including military radars.<sup>17</sup> There appears to be a high-frequency radar installation on one outpost,<sup>18</sup> which would provide for a large surveillance coverage area.<sup>19</sup>

To counter China's land reclamation and infrastructure construction in the Spratly Islands, Vietnam has deployed rocket launchers to five land features it occupies in the Spratly Islands, according to unnamed Western officials interviewed by Reuters. The officials said the launchers were unarmed but could be made operational in two or three days. Vietnam's Ministry of Foreign Affairs said this information was "inaccurate," however.<sup>20</sup>

\*The infrastructure China is building in the Spratly Islands would help it enforce an ADIZ over part of the South China Sea should it decide to declare one there. However, China will have to overcome challenges such as the impact of the harsh maritime environment on the maintenance of aircraft and an underdeveloped joint command structure in the South China Sea. For more information, see Michael Pilger, "ADIZ Update: Enforcement in the East China Sea, Prospects for the South China Sea, and Implications for the United States," *U.S.-China Economic and Security Review Commission*, March 2, 2016, 7–10.

### **Environmental Impact of China's Island Building in the South China Sea**

Between 2013 and 2015, Chinese dredgers deposited sand and gravel on top of about five square miles of coral reefs in the South China Sea.\*<sup>21</sup> In addition, according to John W. McManus, professor of marine biology and fisheries at the University of Miami, China's dredging of sand and gravel for the island building and dredging of channels and harbors at the artificial islands resulted in damage to at least 40.68 square kilometers (km) (15.7 square miles [mi]) of reefs in the Spratly Islands.<sup>22</sup> Furthermore, Kent Carpenter, professor of biological sciences at Old Dominion University, whom the tribunal consulted as part of the proceedings in the Philippines' arbitration case, said island building, such as that conducted by China, "removes vital components of available reef habitat that have functioned as a single ecosystem for many generations of reef inhabitants. This causes dramatic reductions in populations and local extinction of prominent fishes and invertebrates."†<sup>23</sup>

China's island building will almost certainly contribute to increased Chinese fishing in the surrounding waters. The Chinese government claims these islands will provide Chinese and foreign fishing boats with shelter during storms as well as repair and replenishment services.<sup>24</sup> In addition, however, they could exacerbate the already severe problem of fisheries depletion in the South China Sea and will raise the risk of a clash between Chinese fishing boats and those of other claimant countries. Chinese fishing boats regularly ram or otherwise harass other ships in the South China Sea,<sup>25</sup> and China's practice of using coast guard ships to protect its fishing boats could further raise the risk of a clash, particularly as the port facilities at China's outposts will enhance the coast guard's ability to operate in the area.

Of further concern is that China's maritime militia, a quasi-military force of fishermen that are tasked by and report to the PLA, has a key role in China's South China Sea strategy. They are trained to participate in a variety of missions, including search and rescue, reconnaissance, deception operations, law enforcement, and "rights protection," which often entails activities like harassing foreign vessels in China's claimed waters.<sup>26</sup>

These developments are occurring in the context of a looming fisheries crisis in the South China Sea. In an interview with *National Geographic*, Dr. McManus said that due to overfishing,

\* Although these reefs may already have been damaged by the widespread harvesting of giant clams in the South China Sea by Chinese fishermen in recent years, coral could have grown there again if they were left undisturbed. However, as long as the reefs are buried, coral will never grow there. Hannah Beech, "The Environment Is the Silent Casualty of Beijing's Ambitions in the South China Sea," *Time*, June 1, 2016; Victor R. Lee, "Satellite Imagery Shows Eocide in the South China Sea," *Diplomat* (Japan), January 16, 2016.

† For more information on the environmental impact of China's island building in the Spratly Islands, see Matthew Southerland, "China's Island Building in the South China Sea: Damage to the Marine Environment, Implications, and International Law," *U.S.-China Economic and Security Review Commission*, April 12, 2016.

**Environmental Impact of China's Island Building  
in the South China Sea—Continued**

“What we’re looking at is potentially one of the world’s worst fisheries collapses ever.” He explained, “We’re talking hundreds and hundreds of species that will collapse, and they’ll collapse relatively quickly, one after another.”<sup>27</sup>

*Deployment of Advanced Military Equipment to South China Sea Islands*

Since late 2015, China has conducted several rotational deployments of advanced military equipment to Woody Island in the Paracel Islands,\* likely signaling to the United States, rival claimants, and Chinese citizens its resolve to protect its sovereignty claims.<sup>28</sup> In October 2015, Chinese J-11 fighter aircraft appeared to deploy there,† seemingly in conjunction with training in the South China Sea<sup>29</sup> (China deployed them again in February and April 2016).‡<sup>30</sup> Then, in February 2016, China deployed two HQ-9 surface-to-air missile batteries.<sup>31</sup> Although it was not the first time the platform had been deployed to Woody Island, it was the first deployment not associated with a military exercise.<sup>32</sup> China removed the missiles in July.<sup>33</sup> It is unclear if and when they will be redeployed there.

*Military Presence in the South China Sea*

The PLA continues to train for contingencies in the South China Sea. In July, the PLA Navy conducted a large-scale military exercise in the South China Sea near Hainan Province and the Paracel Islands.<sup>34</sup> Forces from all three PLA Navy fleets took part in the exercise, which involved surface ships, submarines, navy aviation aircraft, and coastal defense forces and training in anti-air, anti-surface, and anti-submarine warfare.<sup>35</sup> The seven-day exercise concluded the day before the arbitral tribunal announced its ruling.<sup>36</sup> Prior to the exercise, the Chinese government announced that an area of 100,000 square km (38,610 square mi) where the exercise would be held—which included waters claimed by Viet-

\* China took control of the Paracel Islands after a short naval battle with Vietnam in 1974. The Paracel Islands, which are also claimed by Taiwan and Vietnam, are located in the northern part of the South China Sea. Toshi Yoshihara, “The 1974 Paracels Sea Battle: A Campaign Appraisal,” *U.S. Naval War College Review* 69:2 (Spring 2016): 41.

† Two aircraft are seen in photographs posted on China Military Online, a website sponsored by the *People's Liberation Army Daily*. Although the captions in the photos do not state where the aircraft were located, military experts believe the location to be Woody Island. China Military Online, “Naval Aviation J-11 Fighters Conduct Flight Training,” October 31, 2015; Jun Mai, “Chinese Jets Training with Missiles Fly by Disputed South China Sea Waters near Vietnam in New Response to US Warships,” *South China Morning Post* (Hong Kong), November 2, 2015; and Wendell Minnick, “China Expands Presence with Fighters on Woody Island,” *Defense News*, November 8, 2015.

‡ An unnamed U.S. official told Fox News that under ten military aircraft were observed on Woody Island in February. Commercial satellite imagery showed two J-11 fighter aircraft on Woody Island in April. Lucas Tomlinson, “Exclusive: China Sends Fighter Jets to Contested Island in South China Sea,” Fox News, February 23, 2016; Lucas Tomlinson and Yonat Friling, “Chinese Fighter Jets Seen on Contested South China Sea Island, Evidence of Beijing’s Latest Bold Move,” Fox News, April 12, 2016.

nam—would be off limits.\* Starting on July 19, PLA Naval Aviation fighter aircraft conducted a live fire exercise in the South China Sea.<sup>37</sup> It is unclear whether the exercise had been planned prior to the tribunal’s announcement.

On July 18, a PLA Air Force spokesperson said the PLA Air Force had recently carried out a combat air patrol near Scarborough Reef and other South China Sea reefs and islands. Among the aircraft that participated in the patrol were H-6K bombers, fighters, and tankers. The spokesperson said the PLA Air Force “will continue to conduct combat patrols on a regular basis in the South China Sea.”<sup>38</sup> On August 6, the spokesperson said H-6K bombers, Su-30 fighters, and other aircraft conducted another patrol above the Spratly Islands and Scarborough Reef as part of combat training.<sup>39</sup>

### *Dispute Diplomacy*

During the three and a half years between the initiation of the Philippines’ arbitration case and the tribunal’s ruling, China expended resources and energy to discredit the Philippines’ case and the legitimacy of the proceedings, arguing that it would “neither accept nor participate in the arbitration.”<sup>40</sup> In the months leading up to the ruling in particular, Beijing began a campaign of diplomatic warfare<sup>41</sup> to solicit support from other countries, and suggested in June that nearly 60 countries had pledged support to China’s position,<sup>42</sup> although in reality only 31 foreign governments made public statements to that effect before the ruling.<sup>†</sup><sup>43</sup> The Chinese government and government-affiliated entities also placed advertisements and editorials in overseas media outlets, including the United States’ *Washington Post*<sup>44</sup> and *San Francisco Chronicle*,<sup>45</sup> the UK’s *Telegraph*,<sup>46</sup> and Australia’s *The Age*,<sup>47</sup> supporting Beijing’s stance on the arbitration. In addition, following the tribunal’s ruling, a three-minute video supporting China’s position played on a large screen 120 times per day above New York City’s Times Square for 12 days in July and August.<sup>‡</sup><sup>48</sup> Through diplomatic pressure and economic leverage China has also succeeded in preventing other South China Sea claimants from rallying in opposition to China’s activities or in support of the legal arbitration process. Members of the Association of Southeast Asian Nations (ASEAN) §—five of whom have claims in the South China Sea—

\*State practice under international law has been that countries issue these kinds of notices prior to military exercises for safety reasons, but they cannot prohibit ships and aircraft from entering the area. Steve Mollman, “China Illegally Cordoned off a Huge Part of the South China Sea for Military Drills—And Will Likely Do So Again,” *Quartz*, July 11, 2016.

† These were Afghanistan, Algeria, Bahrain, Comoros, Djibouti, Egypt, The Gambia, Iraq, Jordan, Kenya, Kuwait, Lebanon, Lesotho, Liberia, Libya, Mauritania, Morocco, Niger, Oman, Palestine, Papua New Guinea, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Togo, Tunisia, United Arab Emirates, Vanuatu, and Yemen. The joint statement between China and the 21 countries of the Arab League at the China-Arab States Cooperation Forum in June 2016, which included a section on the resolution of territorial and maritime disputes, is counted as a statement of support from each of these countries. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, *Arbitration Support Tracker*, June 15, 2016.

‡ In 2015, the privately-funded Hainan Nanhai Research Foundation, which is affiliated with China’s National Institute for South China Sea Studies, founded a think tank called the Institute for China-America Studies. The institute is located in Washington, DC. Institute for China-America Studies; Jeremy Page, “New Chinese Institute to Tackle Thorny Island Dispute,” *Wall Street Journal*, May 1, 2015.

§ ASEAN members are Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

have failed to endorse a joint plan of action. The joint statement issued by the body after its first meeting following the tribunal's ruling did not include language regarding the ruling.<sup>49</sup>

The Philippines' election of Rodrigo Duterte, whose presidential campaign featured contradictory approaches to resolving the Philippines' dispute with China,\* raises questions about the direction of China-Philippines relations going forward. While the bilateral relationship was strained under former president Benigno Aquino Jr., who took a firm stand on the Philippines' South China Sea claims, Mr. Duterte suggested on the campaign trail and while in office that his government might be more amenable to negotiating bilaterally with Beijing. Appearing to have sensed an opportunity to influence the new administration, Beijing pursued a two-pronged approach: strongly condemning the Philippines' case at The Hague while conducting friendly outreach to the new administration.<sup>50</sup> It is not yet clear whether this approach will bear fruit for Beijing's South China Sea strategy. President Duterte enthusiastically welcomed the tribunal ruling, and the Philippines' foreign secretary rejected his Chinese counterpart's offer to enter bilateral negotiations over the dispute "outside of and in disregard of the arbitral ruling." However, in August, former Philippines president Fidel Ramos traveled to Hong Kong at the request of President Duterte for unofficial meetings with Chinese interlocutors and President Duterte said bilateral talks on the dispute between Manila and Beijing would begin "within the year."<sup>51</sup>

Following U.S. criticisms of extrajudicial killings associated with President Duterte's ongoing counternarcotics campaign, President Duterte in September seemed to signal a turn away from the Philippines' previously robust defense relations with the United States. In October, the Philippines minister of Defense announced the suspension of joint patrols with the United States in the South China Sea, and indicated he may request the withdrawal of U.S. military advisers stationed in the country once the Philippines military is able to carry out counterterrorism operations on its own—perhaps years away.<sup>52</sup> Around the same time, President Duterte said his administration should explore procuring arms from China and Russia, suggesting a departure from the country's longstanding reliance on U.S. arms exports (underscored by his statement that, "We don't need F-16 jets, that is of no use to us").<sup>53</sup> In these and other remarks, he emphasized his personal dislike of the United States, culminating in his declaration of a "separation from the United States" during a state visit to Beijing in October, although he later clarified this did not mean a severance of ties.<sup>54</sup> As this Report went to print, the U.S. Department of Defense (DOD) had not received any formal request for the withdrawal of U.S. forces or other specific changes in the U.S.-Philippines military relationship.<sup>55</sup> Should President Duterte's anti-American rhetoric translate to real policy shifts, it could have significant consequences for the ongoing South China Sea disputes and regional security.

---

\*During his presidential campaign, Mr. Duterte made several inflammatory and contradictory remarks about how his administration would handle the South China Sea dispute with China: he alternately asserted he would personally ride a jet ski out to defend the Philippines' claimed islands and strike a deal with China to resolve the dispute. *Economist*, "Change of Command in the Philippines: Talk Duterte to Me," July 9, 2016.

### *China's Maritime Disputes in the East China Sea*

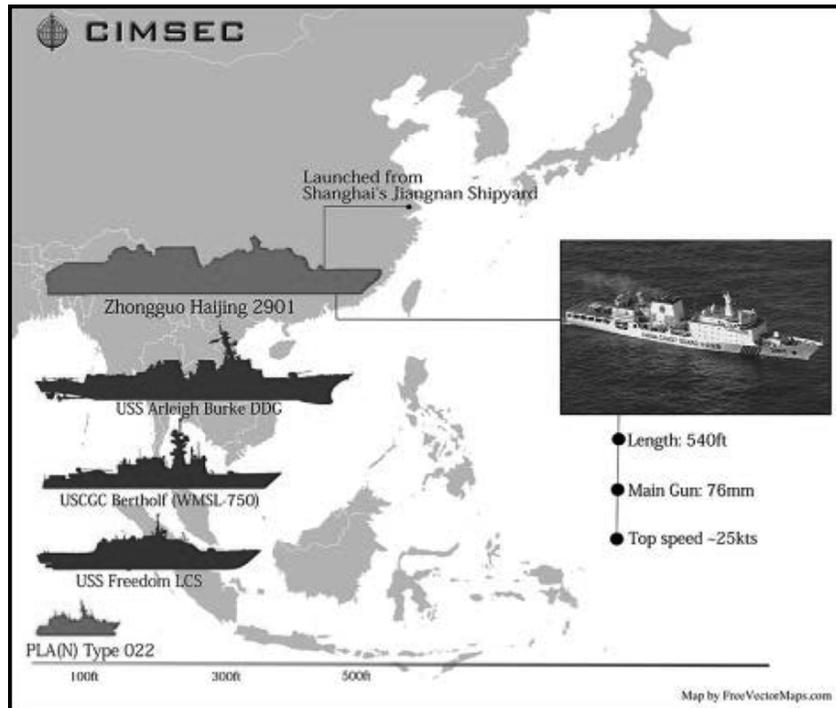
The dispute between China and Japan over the Senkaku Islands (called the Diaoyu Islands by China) entered a period of increased risk of escalation in 2016 as PLA Navy ships sailed within 24 nm of the islands for the first time in June. On June 9, a PLA Navy frigate entered the Japanese-administered contiguous zone—a 12-nm area adjacent to the territorial sea\*—around the Senkakus; a few days later, a PLA Navy intelligence-gathering ship entered the territorial sea.<sup>56</sup> Previously, only China Coast Guard and other Chinese maritime law enforcement ships had patrolled within the contiguous zone. These developments followed an announcement by Japan's chief cabinet secretary in January that the Japanese government was prepared to deploy the Japan Maritime Self-Defense Force to conduct “a maritime policing operation” in response to a foreign warship that conducts activities not allowed under the principle of “innocent passage” in Japan's territorial waters.<sup>57</sup> The Japanese government announced that on August 6, about 230 Chinese fishing boats had sailed to the waters near the Senkaku Islands and that 6 China Coast Guard ships had entered the Senkaku Islands' contiguous zone.<sup>58</sup>

Meanwhile, the average tonnage of China Coast Guard ships that patrol around the Senkakus increased by about 45 percent between 2014 and 2015.<sup>59</sup> China is also likely to deploy to the Senkakus its new China Coast Guard ship *Haijing 2901*, which is larger than the U.S. Navy's Arleigh Burke-class destroyer (see Figure 3).<sup>60</sup> *Haijing 2901* is armed with 76 millimeter guns.<sup>61</sup> In contrast, the Japan Coast Guard unit dedicated to patrolling the Senkakus has ten new ships that are of much smaller tonnage.<sup>62</sup> According to the Center for Strategic and International Studies' Asia Maritime Transparency Initiative, “Tokyo understands that the increasing size and capabilities of [China Coast Guard] vessels around the Senkakus present a unique challenge—sooner or later [Japan Coast Guard] counterparts could face a situation in which they cannot maintain their decades-long administrative control over the waters around the islets, at least without assistance from the Japan Maritime Self-Defense Force.”<sup>63</sup> If Japan responds to Chinese patrols with military ships, tensions would increase, as would the risk of miscalculation or an accidental collision, which could spark a crisis.

---

\*In its territorial sea, a state has full sovereignty, subject to the right of innocent passage. In its contiguous zone, a state can enforce customs-related laws. Under UNCLOS, foreign civilian and military ships may transit through a country's territorial sea according to the principle of innocent passage, which prohibits activities that are “prejudicial to the peace, good order or security of the coastal State,” such as military exercises or intelligence gathering. UN Convention on the Law of the Sea, “Part 2: Territorial Sea and Contiguous Zone.”

**Figure 3: Comparison of the China Coast Guard *Haijing 2901* with U.S. Navy and PLA Navy Ships**



Source: Ryan Martinson, "East Asian Security in the Age of the Chinese Mega-Cutter," *Center for International Maritime Security*, July 3, 2015.

In addition, scrambles\* by Japanese fighter aircraft in response to Chinese aircraft continue to increase, suggesting an uptick in Chinese air activity around the islands and raising the risk of an accidental collision.<sup>64</sup> In its 2015 fiscal year (which ended on March 31, 2016), Japan scrambled fighters 571 times against Chinese aircraft after 464 such scrambles in fiscal year 2014.<sup>65</sup> The number of scrambles against Chinese aircraft in the first three months of 2016 more than doubled in comparison to the same period in 2015.<sup>66</sup> Scrambles against Chinese aircraft increased again during the next three months, jumping from 114 during that same period in 2015 to around 200.<sup>67</sup> The head of public affairs at the Japanese Self-Defense Force's Joint Staff said in April 2016, "China is modernizing its air force and is clearly aiming to improve its air combat capability in faraway skies ... Concrete activities based on those targets are reflected in these numbers."<sup>68</sup> Regarding a scramble by Japanese fighter aircraft over the East China Sea on June 17, China's Ministry of Defense asserted that the aircraft took "provocative" actions against Chinese fighter aircraft, an assertion the Japanese government denied.<sup>69</sup>

\* In military aviation, scrambling refers to directing the immediate takeoff of aircraft from a ground alert condition of readiness to react to a potential air threat.

### ***Reform and Reorganization of the PLA***

In January 2016, China began executing the most sweeping reform and reorganization of the PLA\* since the 1950s.<sup>70</sup> The intent of this reform is to strengthen the CCP's control over the military and improve the PLA's capability to fight regional conflicts at greater distances from China through integrated joint operations.<sup>†</sup><sup>71</sup> The reforms, announced in December 2015 by President Xi, called for restructuring China's leading military authority, the Central Military Commission, expanding the service headquarters system, transitioning the PLA from a military region to a theater joint command structure, and eventually reducing the PLA by 300,000 troops to a force size of two million personnel.<sup>72</sup> China has indicated these reforms will be completed by 2020.<sup>73</sup>

#### *Reform Objectives*

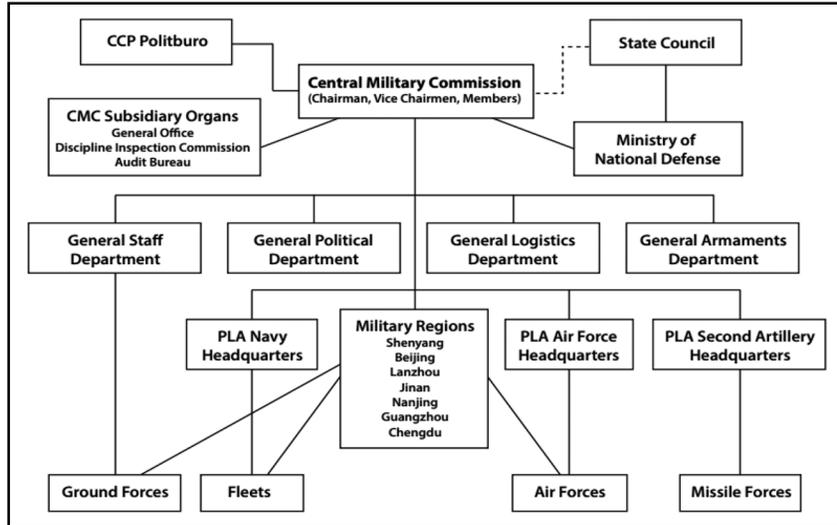
The Third Plenary Session of the CCP's 18th Central Committee, held in November 2013, established a series of objectives for PLA reforms to include restructuring the command institutions for joint operations, which led to the reorganization of the Central Military Commission's four general departments and establishment of theater joint commands.<sup>74</sup> A 2014 article published online in a weekly Chinese state-run newsmagazine noted that the "core objective" of reorganization was adapting the PLA to the "operational needs of modern warfare, to build . . . systems and mechanisms . . . conducive to joint operations, to advance fusion and integration of operational elements, and to achieve joint operations."<sup>75</sup> The reforms establish two lines of authority under the Central Military Commission: the first line creates a flatter command and control relationship with theater commands, and the second line establishes a true services structure‡ focused on the "train, man, and equip" mission for maintaining and improving the PLA.<sup>76</sup> Phillip C. Saunders, director of the Center for the Study of Chinese Military Affairs at the U.S. National Defense University, and Joel Wuthnow, research fellow at the Center for the Study of Chinese Military Affairs, note military reforms are intended to "tighten central political control over a force that was seen as increasingly corrupt and to build the PLA into a credible joint warfighting entity."<sup>77</sup>

\*As noted elsewhere in this Report, China's definition of "reform" often differs from that of the United States and other countries. China's military reforms, which are intended to improve the PLA's ability to achieve a true joint warfighting capability and address corruption, will not necessarily unfold along the same lines of past U.S. military reforms. This latest reform is the PLA's 11th since 1949. The largest previous structural reorganization occurred in 1985 when the PLA's 13 military regions were restructured and reduced to 7 (Shenyang, Beijing, Lanzhou, Jinan, Nanjing, Guangzhou, and Chengdu). For additional information concerning PLA troop reductions and reorganizations since 1949, see Kevin McCauley, "PLA Transformation: Difficult Military Reforms Begin," *Jamestown Foundation*, September 18, 2015.

†Integrated joint operations incorporate all service elements in a common network under a unified commander over the entire battlespace, rather than having each service conducting sequential operations within a campaign. Roy Kamphausen, David Lai, and Andrew Scobell, eds., *The PLA at Home and Abroad: Assessing the Operational Capabilities of China's Military*, Strategic Studies Institute, 2010, 208–209; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2009*, April 2009, 15; and Major General Zhan Yu, "A Study of Theory of Integrated Joint Operations," *China Military Sciences* 20:6, 2007.

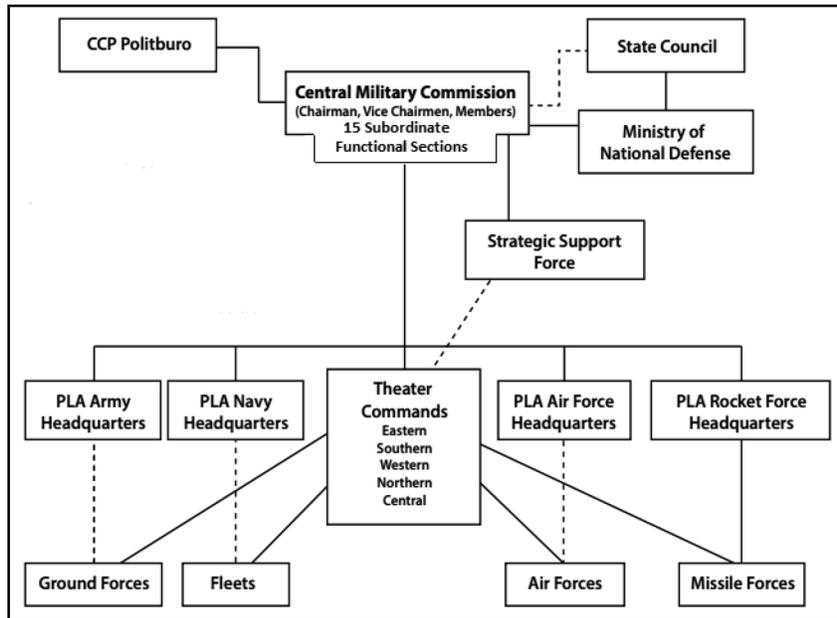
‡The PLA Army, unlike the navy and the air force, did not have a separate national-level command headquarters in Beijing as the general departments acted as the national-level army headquarters prior to the reorganization of the Central Military Commission. Dennis J. Blasko, *The Chinese Army Today: Tradition and Transformation for the 21st Century*, Routledge, 2006. 31.

**Figure 4A: PLA Organizational Structure before Reforms**



Source: Adapted from Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 2016, 2-3.

**Figure 4B: PLA Organizational Structure after Reforms**



Source: Adapted from Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 2016, 2-3.

### *National-Level Military Reform and Reorganization*

In an effort to improve command and control as well as tighten political control over the PLA, the four general departments of the Central Military Commission (the general staff, political, logistics, and armaments departments) were reorganized into 15 subordinate functional sections in January 2016 (see Figures 4A and 4B).<sup>\* 78</sup> One of the more important developments resulting from the abolishment of the general departments was the subsequent establishment of the Joint Staff Department, which will serve as a direct command and control link between the Central Military Commission and operational forces in the five new joint theater commands.<sup>79</sup> With this reorganization, the oversight functions that had previously resided in the General Staff Department, such as military training and education, were transferred to other new departments or offices, leaving the Joint Staff Department to focus on providing operational guidance to the PLA. However, it is too early to tell if this change will improve the Central Military Commission's command and control of PLA joint operations conducted at the theater level.<sup>† 80</sup>

In addition to improving national-level command and control, military reforms also provide President Xi an opportunity to tighten CCP control over the PLA. Dr. Saunders and Dr. Wuthnow state that some "senior PLA officers at the [Central Military Commission], the general departments, and the military regions had too much power and were not always responsive to orders from the center."<sup>81</sup> To address this problem, President Xi may have used reforms to restructure the departments across a system of many subordinate functional sections to diffuse its responsibilities and minimize the potential for concentrated power bases within the PLA.<sup>82</sup>

### *Theater-Level Military Reform and Reorganization*

A central feature of the reforms is the creation of a theater structure with combat responsibilities along China's periphery and within the geographic boundaries of the theater to replace the military region structure, improve joint operations, and meet security challenges in western China and along China's periphery.<sup>83</sup> The missions and structure associated with the five Joint Theater Commands also align with the PLA's previous war zone structure.<sup>84</sup> Wang Xiaohui, a scholar from China's National Defense University,

\*The 15 functional sections replacing the general departments include the Joint Staff Department, Political Work Department, Logistic Support Department, Equipment Development Department, Training Management Department, National Defense Mobilization Department, Discipline Inspection Commission, Political and Law Commission, Science and Technology Commission, Strategic Planning Office, Reform and Formation Office, International Military Cooperation Office, Audit Office, and the General Affairs Administration. Kenneth Allen, Dennis J. Blasko, and John F. Corbett, "The PLA's New Organizational Structure: What Is Known, Unknown and Speculation (Part 1)," *Jamestown Foundation*, February 4, 2016, 6.

†The Joint Staff Department, in addition to having operational control over PLA troops in the new theaters, has a command and control function over troops conducting overseas operations through the department's Combat Operations Bureau and the Overseas Operations Office. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of David M. Finkelstein, January 21, 2016; Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 20, 2016, 4; China Military Online, "MND Holds Press Conference on CMC Organ Reshuffle," January 12, 2016; *Global Times* (China), "CMC Reveals Combat Ops, Info Bureaus," April 12, 2016; Andrew Tate, "China Establishes Overseas Operations Office," *IHS Jane's*, March 29, 2016; and *Global Times* (China), "CMC Reveals Combat Ops, Info Bureaus," April 12, 2016.

suggests that establishing theaters and a theater-level joint command system allows Beijing to organize forces for conducting “joint training according to the theater’s strategic direction” and to “exercise operation[al] command in wartime ... of all combat forces within the theater to carry out integrated joint operations.”<sup>85</sup> This new structure enables PLA forces to more quickly and efficiently meet the requirements of specific anticipated regional war scenarios than the previous structure, which required a transition from an administrative to an operational structure to respond to a crisis. The operational focus and structure of the theaters is likely as follows:

- ***Eastern Theater:*** The Eastern Theater Command’s security challenges include preventing Taiwan independence, compelling Taiwan unification, countering any foreign intervention during a Taiwan conflict, and defending maritime sovereignty claims in the East China Sea.<sup>86</sup>
- ***Southern Theater:*** The Southern Theater Command’s security challenges include defending maritime sovereignty claims and China’s sea lines of control in the South China Sea, as well as defense along the border with Vietnam.<sup>87</sup>
- ***Western Theater:*** The Western Theater Command is focused on missions associated with combating domestic extremism and terrorism in Xinjiang Uyghur Autonomous Region and Tibet Autonomous Region, as well as addressing an Indian border dispute contingency.<sup>88</sup> The theater will likewise guard against infiltration by Central Asian extremist and terrorist groups.<sup>89</sup>
- ***Northern Theater:*** The primary security concern for the Northern Theater Command is stabilizing the Korean Peninsula and conducting border stability operations associated with a North Korea contingency.<sup>90</sup> The theater may share responsibility for contingencies involving Japan with the Eastern Theater, and likely is responsible for northern border contingencies involving Mongolia and Russia.<sup>91</sup>
- ***Central Theater:*** The primary security concern for the Central Theater Command is conducting capital defense operations during any contingency involving another theater’s area of responsibility.<sup>92</sup> This theater likely also has responsibilities for responding to domestic emergencies.

#### *Service-Level Military Reform and Reorganization*

China transformed the PLA service structure by designating the ground forces as the PLA Army and establishing a headquarters for the service, and by elevating the Second Artillery Force, responsible for China’s nuclear and conventional missiles, to a service called the Rocket Force.<sup>93</sup> Along with the PLA Navy and Air Force, this brings the total number of services to four, all of which will focus on the “train, man, and equip” mission. The new Strategic Support Force will focus on cyber, information, and electromagnetic warfare, and possibly some areas of space operations. Creating a more equitable service structure puts all four services on equal footing from an organizational standpoint.

- **PLA Army Headquarters:** China established a separate PLA Army service headquarters for the ground forces at the end of 2015.<sup>94</sup> Prior to establishing an army headquarters, leadership for the ground force was integrated into the PLA's four general departments.<sup>95</sup> Now, the army for the first time is aligned with the other services and will have the same responsibilities for managing and equipping the force—tasks for which the four general departments were previously responsible.<sup>96</sup>
- **PLA Rocket Force:** China's elevation of the PLA Rocket Force at the end of 2015 from an independent branch to a full service puts the Rocket Force on equal footing with the PLA Navy, Air Force, and Army concerning force modernization.<sup>97</sup> The Rocket Force has retained the responsibility for land-based nuclear missiles and conventional missiles and is charged with enhancing China's nuclear deterrence and counternuclear strike capability, strengthening medium- and long-range precision strike, and building a powerful modernized rocket force.<sup>98</sup>
- **PLA Strategic Support Force:** China created a new force under the Central Military Commission called the Strategic Support Force to oversee space and cyber capabilities.<sup>99</sup> While much remains unknown about the full range of missions the Strategic Support Force will conduct, the departments that resided under the General Staff Department prior to reform that appear to have been transferred to this force include elements from the First Department (operations), Second Department (intelligence), Third Department (technical reconnaissance), and Fourth Department (radars and electronic countermeasures).<sup>100</sup> This composition at a minimum would suggest the Strategic Support Force is charged with cyber, space, reconnaissance, and electronic warfare missions supporting joint integrated operations. Furthermore, the Strategic Support Force may play a role in the conduct of both information and legal warfare, though it is too early to determine whether and how these warfare areas will be addressed by the force.<sup>101</sup>

### ***China's 2016 Defense and Security Budget***

In March 2016, China announced a 2016 military budget of \$146.67 billion (renminbi 954.35 billion), an increase of 7.6 percent over its announced budget for 2015, but the lowest rate of growth in six years.<sup>102</sup> This figure represents 11 percent of China's total central government outlays budgeted for 2016\* and approximately 1.3 percent of projected gross domestic product (GDP).<sup>103</sup> Observers offer varying estimates of China's defense budget, having long noted the impossibility of accepting China's official figures at face value for numerous reasons (including Beijing's provision of only top-line numbers and its omission of major defense-related expendi-

\*China's central government general public budget includes "central government expenditures, tax rebates for local governments, general transfer payments to local governments, special transfer payments to local governments, and payments to central government reserve funds." If only the central government expenditures category is counted, China's 2016 defense budget represents 35 percent of projected central government spending. National People's Congress of the People's Republic of China, *Full Text: Report on China's Central, Local Budgets (2016)*, March 23, 2016.

tures such as research and development programs, foreign arms purchases, and local government support to the PLA).<sup>104</sup> U.S. Department of Defense estimates have added roughly 25 percent to China's reported budget in each of the past four years,<sup>105</sup> projecting that it "exceeded \$180 billion" in 2015<sup>106</sup> as opposed to the \$141.9 billion figure China reported,\* for example. The Stockholm International Peace Research Institute (SIPRI) typically estimates China's military budget to be around 50 percent higher than reported, projecting \$215 billion for 2015 (2016 estimates from these sources are not yet available).<sup>107</sup> The International Institute for Strategic Studies, another source of independent estimates, added around 40 percent to Beijing's reported budget from 2008 to 2014.<sup>108</sup> For comparison, the United States appropriated \$572.7 billion for DOD in 2016.<sup>109</sup> This number would represent a decline in U.S. military expenditures in both real and nominal terms for the fifth straight year, according to SIPRI data (SIPRI has not yet reported on U.S. military spending for 2016).<sup>110</sup>

Chinese officials have sought to highlight this slower rate of increase in military spending, beginning with the March 2016 budget announcement's observation that "China's military budget will continue rising, but more slowly compared to the previous few years,"<sup>111</sup> terming this "in line with China's national defense need and fiscal revenue."<sup>112</sup> President Xi stated that "it is not easy to secure a normal rise in the military budget anymore," tying this to "mounting pressure from the economic downturn."<sup>113</sup> China's economic performance has long been touted as the reference point for its decisions on military spending, although its reported nominal military budget increases have outpaced GDP growth for four years in a row prior to 2016.<sup>114</sup> With China projecting real GDP growth of 6.5 to 7 percent in 2016,<sup>115</sup> this marks the fifth straight year the numbers have not aligned, albeit with a narrower gap. Importantly, however, adjusting for inflation reveals that defense spending hikes have generally been in line with GDP growth:<sup>116</sup> The Department of Defense stated in 2016 that "analysis of data from 2006 through 2015 indicates China's officially-disclosed military budget grew at an average of 9.8 percent per year in inflation-adjusted terms over that period,"<sup>117</sup> close to its average real GDP growth rate of 9.7 percent during this time.<sup>118</sup> China's reported real defense budget growth rate will actually be lower than its real GDP growth rate in 2016, assuming a 2 percent inflation rate.<sup>119</sup> Whether this alignment with GDP growth is reflected in independent estimates, and whether it continues if China's gradual economic slowdown persists, will bear watching in future years.

Outside assessments of China's lower rate of defense spending growth in 2016 have generally agreed that China's economic slowdown is playing a role.<sup>120</sup> Several experts have specifically suggested that China's planners are cognizant of the dangers of Soviet-style military overextension in pursuing military modernization.<sup>121</sup> Other analysts have suggested the lower growth rate may be related to China's ongoing military reorganization.<sup>122</sup>

\*Due to fluctuations in exchange rates this figure may vary by source; this Report utilizes the rate at the time of the 2015 budget's announcement. U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 238.

Several trends in addition to economic performance will likely factor into China's defense budget planning going forward. Craig Caffrey, principal analyst for defense budgets at IHS Jane's, assesses that China's military reforms "will reduce pressure on the defense budget in the longer term."<sup>123</sup> On the other hand, studies have observed that the cost of ships and weapons generally tends to increase faster than inflation (even in the absence of a large-scale, high-technology military modernization effort such as China's), eventually requiring continuous spending increases to avoid force reductions.<sup>124</sup> Andrew S. Erickson, professor of strategy at the Naval War College, noted in testimony to the Commission in 2014 that a buildup of aircraft carriers and other large vessels—which China now appears to be pursuing under a doctrinal shift toward "far seas" protection\*<sup>125</sup>—could be detrimental to its budget for this reason.<sup>126</sup> China's ability to rely on large numbers of low-paid recruits will also continue to diminish as labor costs rise;<sup>127</sup> the September 2015 decision to cut 300,000 troops<sup>128</sup> is notable for this reason. However, the longstanding assessment that China's defense spending increases appear sustainable in the near term, reiterated by DOD in 2016,<sup>129</sup> should be expected to hold.

### ***China's Military Hardware Development and Acquisitions Impacting Force Projection Capabilities***

Over the past several years, China significantly increased its number of available weapons and weapons systems for force projection in air, sea, and amphibious missions.<sup>130</sup> Moreover, in addition to producing large numbers of platforms, China also has focused on improving the capabilities of individual platforms. The Congressional Research Service reported that PLA Navy modernization in particular "has appeared focused less on increasing total platform (i.e., ship and aircraft) numbers than on increasing the modernity and capability of Chinese platforms."<sup>131</sup> China also tested new space launch vehicles and launched additional intelligence, surveillance, and reconnaissance (ISR) and navigation satellites in 2016, in an effort to further augment the capabilities of its military forces in areas such as intelligence-gathering and precision strike. Significant developments in China's defense acquisitions from late 2015 to 2016 include the following:

***J-20 stealth fighter production:*** China's first squadron † of J-20 multirole stealth jet fighters is expected to be delivered by the end of 2016 and could become operational as early as 2018.<sup>132</sup> In addition to eight prototype J-20s built to date, China has reportedly produced its first production-line J-20 and began test flights with the new aircraft in January 2016.<sup>133</sup> The J-20 is a fifth-generation fighter with modern stealth features and integrated electronic warfare capabilities that could degrade the ability of U.S. forces to detect and engage it.<sup>134</sup>

\* China typically defines its "near seas" as waters within the Yellow Sea, East China Sea, and South China Sea. China typically describes its "far seas" or "distant seas" as waters outside of its near seas.

† A squadron of J-20s would consist of two to four aircraft. Kevin Pollpeter and Kenneth W. Allen, eds., *The PLA as Organization v2.0*, Defense Group Inc., 2015, 14.

**Second aircraft carrier confirmed:** In December 2015, a Chinese Ministry of National Defense spokesperson confirmed for the first time that China's second aircraft carrier (Type 001A) is under construction.<sup>135</sup> He did not give a timeline for construction.<sup>136</sup> The new carrier will have a conventional power plant and a ski jump ramp rather than a powered catapult launch system.<sup>137</sup> The ski jump ramp will limit the carrier's capabilities by restricting the launch weight of its fighters.<sup>138</sup> Satellite imagery indicated that as of August 2016, construction of the new carrier was nearly complete.<sup>139</sup> China could build multiple additional aircraft carriers over the next 15 years.<sup>140</sup> According to DOD, "China's next generation of carriers will probably be capable of improved endurance and of launching more varied types of aircraft, including [electronic warfare], early warning, and [antisurface warfare], thus increasing the potential striking power of a [PLA Navy] 'carrier battle group' in safeguarding China's interests in areas beyond its immediate periphery."<sup>141</sup>

**Su-35 fighter purchase:** In November 2015, Russia and China signed a \$2 billion contract for Russia to deliver 24 Su-35 (FLANKER-E) multirole jet fighters to China.<sup>142</sup> The Su-35, with its advanced avionics and targeting and passive electronically scanned array radar systems, will improve China's air-to-air and strike capabilities.<sup>143</sup> Moreover, the aircraft's long range (reportedly approximately 2,200 mi with internal fuel and 2,800 mi with auxiliary fuel tanks) will enhance the PLA's ability to project force in the South China Sea and Western Pacific.<sup>144</sup> The Su-35 is capable of firing advanced antisurface and air-to-air missiles.<sup>145</sup> China most likely will attempt to reverse engineer components of the Su-35—particularly its advanced turbofan engine—to aid indigenous jet fighter production.<sup>146</sup> The Su-35 could enter service in 2018.<sup>147</sup>

**Type 072A tank landing ship production:** The PLA Navy commissioned three Type 072A tank landing ships\* (see Figure 5) from May 2015 to January 2016, bringing the PLA Navy's Type 072A fleet to 12 ships.<sup>148</sup> The Type 072A can carry 10 tanks, 4 landing craft (such as China's Zubr [POMORNIK] hovercraft), and 250 soldiers, and has a helicopter landing pad.<sup>149</sup> The resumption of production could suggest Beijing wants to increase its force projection capabilities for contingencies in the South and East China seas. It may also signal to Taiwan's new Democratic Progressive Party-led government that Beijing is willing to take Taiwan by force.<sup>150</sup>

---

\*Tank landing ships are designed to carry vehicles and troops to shore during amphibious operations.

Figure 5: Type 072A Tank Landing Ship



Source: Shahryar Pasandideh, "China's Developing Naval Power Projection Capabilities," *NATO Association of Canada*, October 29, 2014.

**Type 054A frigate production:** China commissioned its 22nd Type 054A (JIANGKAI II) guided missile frigate in February 2016.<sup>151</sup> The Type 054A has been deployed for global missions, such as Gulf of Aden antipiracy patrols. However, according to *China Signpost*, a China-focused research consultancy, the ship's limited size, armaments, and electronics suite make it suited for a limited fleet defense role rather than for high-intensity missions.<sup>152</sup> The Type 054A reportedly is equipped with HHQ-16 surface-to-air missiles (range of 20 nm to 40 nm) and can fire YJ-83 antiship cruise missiles (range of 65 nm to 100 nm).<sup>153</sup>

**Type 052D destroyer production:** In December 2015, a second Type 052D (LUYANG III) destroyer entered service with the PLA Navy.<sup>154</sup> According to the U.S. Office of Naval Intelligence, the Type 052D's advanced air defense radar "allows the [PLA Navy] surface force to operate with increased confidence outside of shore-based air defense systems, as one or two ships are equipped to provide air defense for the entire task group."<sup>155</sup> According to the U.S. Office of Naval Intelligence, the Type 052D carries the YJ-18 antiship cruise missile (range of 290 nm) and an extended-range variant of the HHQ-9 surface-to-air missile (80 nm).<sup>156</sup> The PLA Navy reportedly plans to deploy ten Type 052Ds in total.<sup>157</sup>

**Y-20 production:** In July 2016, the PLA Air Force inducted China's first operational Y-20 heavy transport aircraft into service (see Figure 6).<sup>158</sup> The PLA likely will develop airborne early warning, maritime patrol, and tanker variants of the Y-20.<sup>159</sup> A tanker variant of the Y-20 would improve China's force projection capabilities by extending the range of its aircraft to reach farther into areas of

potential conflict, such as the South China Sea and Western Pacific.<sup>160</sup> The Y-20 reportedly has a maximum payload of roughly 55–65 tons.\*<sup>161</sup> By comparison, the U.S. C-17 Globemaster heavy transport aircraft has a maximum payload of approximately 76 tons.<sup>162</sup> A March 2016 article in the state-run *People's Daily* said the Y-20 would be delivered “in bulk” to the PLA by the end of 2016.<sup>163</sup>

**Figure 6: Y-20 Heavy Transport Aircraft**



*Source:* Jay Bennett, “China’s New Y-20 Is the Largest Military Aircraft Currently in Production,” *Popular Mechanics*, June 20, 2016.

**Space:** China conducted its first Long March-7 (LM-7) rocket launch in June 2016, utilizing the new Wenchang Satellite Launch Center in Hainan Province for the first time.† The LM-7 uses a less toxic and more efficient fuel than previous Chinese rockets and will reportedly serve as China’s main carrier for future space missions.<sup>164</sup> The LM-7 can carry 13.5 tons into low Earth orbit, a significant increase from the LM-2F at 8 tons and the more frequently-used LM-2C and LM-2D at 3.9 tons;<sup>165</sup> the forthcoming LM-5, expected to be launched later this year, will be able to carry 25 tons into low Earth orbit and 14 tons to geostationary transfer orbit‡ (as opposed to the LM-3E at 5.5 tons)<sup>166</sup> as China’s largest launch vehicle to date.<sup>167</sup> The LM-7 and LM-5 will thus be able to launch larger payloads, such as the three modules planned for China’s future 60-ton space station,<sup>168</sup> or greater numbers of sat-

\* When used in this section, “ton” refers to “metric ton.”

† The Wenchang Space Launch Center is China’s fourth such center and closer to the equator than the others, providing fuel savings and, by extension, payload savings for satellite launches to geosynchronous orbit, as satellites require less maneuvering to get into position once launched. Wang Cong and Fu Shuangqi, “Rocket Launch Gets China One Step Closer to Own Space Station,” *Space Daily*, June 28, 2016.

‡ It is common to compare launch vehicles’ capabilities based on the amount of mass they can lift to “geosynchronous transfer orbit,” an elliptical orbit at an altitude of around 23,000 mi at the furthest point from Earth into which a spacecraft is first launched in order to later reach geosynchronous and geostationary Earth orbits. The spacecraft does this by turning and firing its rocket engine to circularize its orbit. Geosynchronous Earth orbit can be achieved at about 22,000–23,000 mi above the equator; spacecraft in this orbit return to the same point in the sky at the same time each day. Geostationary Earth orbit is the highest orbital band within geosynchronous Earth orbit; at this altitude, satellites move at the same speed as the Earth’s rotation, enabling them to cover large geographic areas. National Aeronautics and Space Administration, *Basics of Space Flight: Planetary Orbits*, 2015.

ellites.\* They also represent steps along the path toward the LM-9 “heavy lift launch vehicle” that China plans to develop in the next 15 years.<sup>169</sup> China reportedly requires the ability to launch around 100 tons (likely less at higher orbits) to support manned lunar and deep space missions.<sup>170</sup> Furthering its manned space program, China launched its second space lab, the Tiangong-2, in September 2016,<sup>171</sup> and launched the Shenzhou-11 spacecraft to link with Tiangong-2 in October 2016, its first manned space mission since 2013.<sup>172</sup>

China launched numerous military-relevant satellites in 2016. Of its primary series that likely provide military ISR functions, Beijing launched a remote sensing satellite, the Gaofen-4,<sup>173</sup> into geosynchronous orbit† for the first time, as well as additional Yaogan and Shijian satellites.‡<sup>174</sup> China also launched its 23rd Beidou navigation satellite,<sup>175</sup> and announced plans in May 2016 to launch a total of 30 Beidou satellites during the 13th Five-Year Plan period (2016 to 2020) in pursuit of its objective to complete a global satellite navigation system by 2020.<sup>176</sup> A government white paper published in June 2016 also announced that China plans to make this service available to global users free of charge (as the United States does with the Global Positioning System [GPS]).<sup>177</sup> China launched the Aolong-1 spacecraft, equipped with a robotic arm, aboard the LM-7. While Chinese officials have described it as the first spacecraft in a series tasked with collecting man-made debris in space, one article quoted two unnamed Chinese experts noting it has potential as an antisatellite weapon.<sup>178</sup> Finally, state media reported that China launched the world’s first experimental quantum communications§ satellite in August 2016, which will test

\*For reference, the U.S. Federal Aviation Administration forecast an average mass of 4.9 tons for commercial satellites in 2016, while satellites in the “extra heavy” category have a mass of over 5.4 tons. Early U.S. reconnaissance satellites weighed as much as 15 tons, but modern military satellites are much smaller: China’s first Yaogan satellite weighed 2.7 tons according to media reports, the newest U.S. Global Positioning System satellites weigh 3.9 tons, and U.S. Space-Based Infrared System early warning satellites weigh 4.8 tons. China’s prototype space station, the Tiangong-1, has a mass of 8.5 tons. Federal Aviation Administration, *2015 Commercial Space Transportation Forecasts*, April 2015, 8; Kevin Pollpeter, *China Dream, Space Dream: China’s Progress in Space Technologies and Implications for the United States* (prepared for the U.S.-China Economic and Security Review Commission by the University of California Institute on Global Conflict and Cooperation), March 2, 2015, 47; Lockheed Martin Corporation, *GPS III Fact Sheet*, 2014; Rui C. Barbosa, “Long March 4C Launches Yaogan Weixing-19,” *NASASpaceflight.com*, November 20, 2013; United States Air Force, *Space Based Infrared Systems*, March 13, 2013; and Peter Pae, “Massive Spy Satellite Program to Cost Billions,” *Los Angeles Times*, March 18, 2001.

†Geosynchronous Earth orbit can be achieved at about 22,000–23,000 mi above the equator. The highest orbital band within geosynchronous Earth orbit in frequent use is known as “geostationary Earth orbit.” At this altitude, satellites move at the same speed as the Earth’s rotation, enabling them to cover large geographic areas.

‡The Yaogan series represents the core component of China’s maritime ISR architecture and includes electro-optical (EO), synthetic aperture radar (SAR), and electronic intelligence (ELINT) variants. Some Shijian satellites have been used for strictly civilian purposes; many appear to perform military ISR functions and likely feature ELINT sensors used for broad area maritime surveillance, or infrared sensors to detect ballistic missile launches in support of a future early warning system. The Gaofen series has EO and SAR variants and features China’s first high-definition satellite and first satellite capable of sub-meter resolution. U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 299–301.

§A quantum communication network is theoretically unbreakable as any attempt to intercept the encryption key would alter the physical status of the data (quantum data, unlike bits, are in a state of “superposition,” existing in two states at the same time) and trigger an alert to the communicators. Quantum communication has thus far been limited to short distances due to the technological difficulty of maintaining the quantum data’s fragile state over a long distance. Giuseppe Vallone et al., “Experimental Satellite Quantum Communications,” *Physical Review Letters* 15:4 (July 20, 2015): 1; Yu Dawei, “In China, Quantum Communications Comes of

Continued

technology that could eventually enable secure digital communication using a virtually unbreakable encryption key.<sup>179</sup>

On the commercial side, China built and launched a satellite for Laos in November 2015, a service known as “delivery-in-orbit” that it has also provided to Bolivia, Nigeria, Pakistan, and Venezuela to date.<sup>180</sup> Since U.S. restrictions prohibit exports of satellites and components to China (including for launch service purposes),<sup>181</sup> China relies on launch service contracts like these to compete in the global market.<sup>182</sup>

### ***PLA Navy Nuclear Ballistic Missile Submarine Deterrent Patrol Developments***

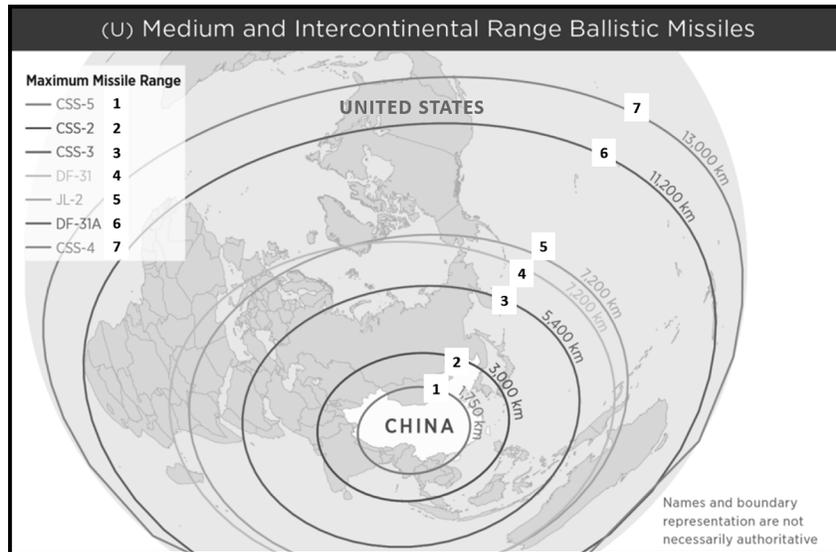
The PLA Navy currently operates four Type 094 JIN-class nuclear-powered ballistic missile submarines (SSBNs) and has a fifth submarine under construction.<sup>183</sup> The JIN SSBN, based in Hainan Province in the South China Sea, is supported by underground submarine facilities.<sup>184</sup> The JIN’s JL–2 submarine-launched ballistic missile (SLBM)\* is armed with a nuclear warhead with an assessed range of 7,200 km (4,474 mi), far enough to strike the continental United States depending on the location of the launch (see Figure 7).<sup>185</sup> In testimony to the U.S. Senate Armed Services Committee in 2016, Lieutenant General Vincent Stewart, director of the U.S. Defense Intelligence Agency, indicated that the “PLA Navy deployed the JIN-class ... submarine in 2015, which, when armed with the JL–2 SLBM, provides Beijing its first sea-based nuclear deterrent.”†<sup>186</sup> This provides China the ability to conduct a nuclear strike from the sea and, perhaps more importantly, provides it with the potential for a survivable second strike capability should it suffer a first strike on land.

---

Age,” Caixin, February 6, 2015; Stephen Chen, “China to Launch Hack-Proof Quantum Communication Network in 2016,” *South China Morning Post* (Hong Kong), November 4, 2014; and Michael A. Nielsen and Isaac L. Chuang, *Quantum Computation and Quantum Information*, Cambridge University Press, 2000, 14.

\* China conducted a series of JL–2 tests from the JIN SSBN beginning in 2009, with the most recent test occurring in January 2015. Jesse Karotkin, a former senior intelligence officer for China at the U.S. Office of Naval Intelligence, testified to the Commission in January 2014 that it had “been a long-road for the Chinese to get this system operational.” Another potential indication that the JL–2 is operational is a report that a JIN-class SSBN crew was given two awards for successful missile tests that occurred in November 2013 and January 2015. U.S.-China Economic and Security Review Commission, *Hearing on PLA Modernization and its Implications for the United States*, written testimony of Jesse Karotkin, January 30, 2014; China Central Television, “Focus Today’ on Type-094 Submarine, DF-26 Missile, Aircraft Carrier ‘Liaoning,’” October 1, 2015; Ge Chong, “Type 094 Nuclear Submarine High Seas Navigation Will Enhance Sea-Based Deterrence Capability—Carrying JL–2 Missiles with Range Covering the Territory of the United States,” *Wen Wei Po* (Hong Kong), February 12, 2014; and Bill Gertz, “Ready to Launch,” *Washington Free Beacon*, August 21, 2012.

† The Type 092 XIA-class SSBN was China’s first attempt to develop a sea-based nuclear deterrent; however, the XIA is likely currently incapable of conducting operational missions. DOD noted in 2010 that the XIA’s operational status was in question, and in 2015 omitted any mention of the XIA in discussing China’s SSBNs in its *Annual Report to Congress on Military and Security Developments Involving the People’s Republic of China 2015*. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2015*, April 2015, 9; U.S. Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, April 2015, 16.

**Figure 7: JL-2 Missile Range Compared to other Chinese Ballistic Missiles**

Note: The ring labeled “5” represents the range of the JL-2. DOD uses a mix of both Chinese and NATO designators in the above graphic. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2015*, April 7, 2015, 88.

Source: U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2015*, April 7, 2015, 88.

DOD currently assesses that China will conduct its first SSBN nuclear deterrence patrol before the end of 2016, a timeline that has been revised twice (DOD previously estimated the patrol would occur in 2014, then in 2015).<sup>187</sup> It will not necessarily be clear when China begins its first nuclear deterrence patrol: though some of the preparations for a patrol (such as the submarine’s movement into an underground tunnel complex prior to deployment) may be observable, it will not be apparent whether a nuclear warhead is mated to the missile, or when missiles are loaded prior to deployment.\* For this reason, any JIN SSBN deployment may require senior U.S. defense officials to assume that China is conducting a deterrence patrol (i.e., a patrol in which an SSBN is armed with a nuclear warhead).† DOD assesses a fifth JIN-class SSBN will enter the PLA Navy’s order of battle by 2020, which would provide

\* Hans M. Kristensen, director of the Nuclear Information Project at the Federation of American Scientists, notes there is a “covered railway ... connect[ing] a high-bay building with possible access into the mountain at the eastern part of the [Longpo naval] base [on Hainan Island] with one of the land-based tunnels to the underground submarine cave. ... The covered railway ... seems intended to keep movement of something between the two mountains out of sight from spying satellites. ... The purpose of the facilities and rail is unknown but might ... be intended for movement of SLBMs or other weapons between storage inside the mountain to the submarine cave for arming of SSBNs.” Hans M. Kristensen, “China SSBN Fleet Getting Ready—But for What?” *Federation of American Scientists*, April 25, 2014.

† Admiral Cecil Haney, Commander of U.S. Strategic Command, stated in October 2015 that when a JIN SSBN goes to sea he must assume it is conducting a deterrence patrol based on the submarine’s “operational capability.” Cecil Haney, “Transcript: Admiral Cecil Haney, Commander STRATCOM, Defense Writers Group,” *Defense Writers Group*, October 22, 2015, 16.

China the minimum SSBN force required to maintain a near continuous at-sea nuclear deterrent presence in peacetime.<sup>188</sup>

Conducting nuclear deterrence patrols likely will require a series of procedures to be in place prior to SSBN patrol activity. For example, DOD states “SSBN deterrence patrols will force the PLA to implement more sophisticated [command and control] systems and processes that safeguard the integrity of nuclear release authority for a larger, more dispersed force.”<sup>189</sup> China’s policy of keeping nuclear warheads stored separately from missiles in order to prevent an accident or unauthorized use (known as “de-alerting”)<sup>190</sup> will likewise require revision for JL-2 SLBMs to be deployed on submarines during peacetime.<sup>191</sup> China may also be enhancing peacetime readiness levels for these nuclear forces to ensure responsiveness,<sup>192</sup> which may be applied to China’s SSBN force as well.

### **PLA Exercises and Training**

China views conducting joint and transregional exercises as key to narrowing the gap between training and real combat experience for the PLA.<sup>193</sup> The PLA conducts exercises to enhance warfighting competencies, test and evaluate tactics, develop and refine integrated joint operations command structures and concepts, and evaluate service proficiencies.<sup>194</sup> The overall objective of PLA exercises is to develop an effective operational capability to achieve success in local wars under “informationized” conditions.\*

#### ***Evolution of PLA Exercises for Joint Operations***

While the development of joint integrated operations has been a focus of PLA modernization objectives since the late 1990s, it was not until the Tenth Five-Year Plan (2001 to 2005) that the PLA initiated its program to develop a credible joint operation concept.<sup>195</sup> Mark Cozad, a senior international defense policy analyst with the RAND Corporation, states that during this period, China pursued a “multifaceted effort . . . that brought together a broad body of military science research, technology development, new training guidelines, and operational experimentation.”<sup>196</sup> This phase of joint exercise development culminated with Sharp Sword-2005, an exercise that experimented with air-land integration and firepower strike coordination between the army and air force.<sup>197</sup> Mr. Cozad argues that although this “exercise highlighted several shortcomings in the PLA’s capability to perform integrated joint operations, it marked a significant foundational basis on which follow-on efforts would build.”<sup>198</sup> Between 2006 and 2008, China continued to refine and experiment with joint operational concepts that contributed to the revision of the Outline on Military Training and Evaluation, which provides training guidance to the PLA.<sup>199</sup> The revised Outline, released by the then General Staff Department in January 2009, emphasized realistic training, joint training, and training under complex electromagnetic environments.<sup>200</sup> PLA joint training then entered a “standardized development” phase between 2009 and 2010 to test joint operation concepts that emerged from

\* In Chinese military doctrine, “informationization” refers to the application of advanced information technology to military operations. The PLA views informationization as a required enabler of its goal to be able to win “local wars under informationized conditions.”

the Sharp Sword series of exercises.<sup>201</sup> During this period China conducted Stride-2009, Firepower-2009, and Mission Action-2010, which set key themes for joint exercises that followed the Tenth Five-Year Plan.<sup>202</sup> The exercise themes the PLA focused on included civil-military integration, air force and naval force projection, joint training methods, and command and control for war zones.<sup>203</sup>

### **Key Exercises**

Since the release of the revised Outline and training standardization, China has continued to focus on incorporating greater realism, strengthening campaign training, and conducting long-distance maneuvers during exercises to develop PLA capabilities to conduct large-scale joint operations.<sup>204</sup> Exercises such as Stride, Firepower, Mission Action, and Joint Action emphasize many of these focus areas.<sup>205</sup>

**Stride (Kuayue):** Stride is a long-distance ground force maneuver exercise that was held four times from 2009 to 2016.<sup>206</sup> Skills practiced in this exercise series have included command and control, logistics, civil-military integration, joint campaign planning, long-range firepower strike, deployment of special operational forces, urban combat, reconnaissance, information warfare, and electronic warfare.<sup>207</sup> The Stride series of exercises has sought to test and evaluate combat forces and since 2014 has made use of opposing forces to increase realism.<sup>208</sup> During Stride-2016 the PLA continued the theme of long-distance maneuver operations, which included moving combined arms brigades from each of the five new theater commands, using an opposing force, and conducting operations in a complex electromagnetic (jamming) environment.<sup>209</sup>

**Firepower (Huoli):** Firepower, like Stride, was held four times between 2009 and 2016. The Firepower series focuses on long-range mobility, precision strike, command and control, and reconnaissance operations.<sup>210</sup> Firepower-2015 made use of opposing forces simulating U.S. tactics during the exercise.<sup>211</sup> As in 2015, Firepower-2016 continued the use of an opposition force to create realistic battlefield conditions for the transregional exercise.<sup>212</sup>

**Mission Action (Shiming Xingdong):** Mission Action, held in 2010 and 2013, focused on long-range maneuver. Mission Action-2010, a followup to the Stride-2009 exercise, was the first time operational PLA forces crossed military region boundaries to participate in a joint exercise and were deployed by road, rail, and air.<sup>213</sup> Mission Action-2013 built upon the 2010 transregional mobility theme by conducting the deployment while defending against an opposing force to create a more realistic training environment.<sup>214</sup>

**Joint Action (Lianhe Xingdong):** Joint Action, held in 2014 and 2015, emphasized theater command and control, reconnaissance, information operations, logistics, ground-air integration, and civil-military integration for conducting joint operations.<sup>215</sup> During Joint Action 2015, the PLA focused on sea-air-land integration, information operations, and maritime operations.<sup>216</sup> The 2014 and 2015 exercises both emphasized PLA joint planning.<sup>217</sup>

### ***Evaluation and Prospects for Joint Exercises and Future Operations***

The goal of PLA exercises is to improve joint integrated operational capabilities by collecting data to support training and doctrinal development and then implement lessons learned from training assessments\* and evaluations.<sup>218</sup> Kevin McCauley, an independent researcher who has published widely on China's military, states the PLA views the conduct of exercises "approximating actual combat conditions as vital for supporting research for future training and operational methods, as well as a means to overcome lack of combat experience."<sup>219</sup> In addition to using exercises to overcome a lack of combat experience, the PLA uses them to evaluate units and ensure the highest-performing PLA troops will be deployed at the front lines of any future conflict.<sup>220</sup> The continued monitoring of PLA exercises should provide insight into the types of operations the PLA is preparing for as well as any strengths or weaknesses the PLA experiences in preparation for those missions.

### **China's Global Security Activities in 2016**

#### ***PLA Overseas Activities***

China's global security engagement continued to expand in 2016, reflecting the PLA's improving ability to operate far from China's shores, and China's goal—outlined in its 2015 defense white paper—to "safeguard the security of [its] overseas interests."<sup>221</sup>

#### *China Constructing Djibouti Military Support Facility*

In February 2016, China began constructing a naval facility in Djibouti, its first overseas military facility.<sup>222</sup> According to a Chinese Ministry of Foreign Affairs spokesperson, the facility "will better serve Chinese troops when they carry out international peacekeeping operations, escort ships in the Gulf of Aden and the waters off the Somali coast, and perform humanitarian rescue [operations]."<sup>223</sup> The facility most likely will provide more comprehensive and streamlined logistical support than PLA Navy ships have received in past replenishment and maintenance visits to port facilities in Djibouti and other regional countries.<sup>224</sup> According to Djibouti Foreign Minister Mahmoud Ali Youssouf, the facility will host "a few thousand" military and administrative personnel.<sup>225</sup>

China's military foothold in Djibouti will boost its power projection capabilities and influence in an area of the world crucial to China's economic interests.<sup>226</sup> Djibouti occupies a strategic position at the Straits of Bab el Mandeb—a chokepoint for sea lines of communication between the Red Sea and the Indian Ocean—through which travels a large portion of hundreds of billions of dollars in trade between China and the Middle East and Europe.<sup>227</sup> In 2014,

\*The PLA makes assessments based on factors that include the amount of training time units receive and unit effectiveness in both confrontation and simulation training. Data are collected on operational areas such as maneuver, coordination between units, fire strike coordination, and electromagnetic spectrum management. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; Kevin McCauley, "Incomplete Transformation: PLA Joint Training and Warfighting Capabilities," *Jamestown Foundation*, March 6, 2015.

for example, 52 percent of China's crude oil imports by volume came from the Middle East.<sup>228</sup> Moreover, China could deploy equipment to Djibouti to collect intelligence on U.S. and friendly forces in the region.<sup>229</sup> Djibouti hosts U.S. Navy Camp Lemonnier—a critical hub for U.S. counterterrorism operations in Africa and the Middle East—as well as Japanese and French military facilities.<sup>230</sup>

#### *Gulf of Aden Antipiracy Deployments*

In August 2016, China launched its 24th PLA Navy antipiracy deployment to the Gulf of Aden.<sup>231</sup> These operations have significant implications for China's force projection capabilities. According to DOD, "The expansion of [Chinese] naval operations beyond China's immediate region will facilitate non-war uses of military force and provide China with a diverse set of capabilities for striking targets across the Pacific and Indian Ocean regions. Improving 'blue water' capabilities will extend China's maritime security buffer to protect China's near and far seas interests more effectively."<sup>232</sup> PLA Navy ships on antipiracy deployments in the Gulf of Aden have also conducted several other security operations in the region, such as a March 2015 non-combatant evacuation operation in Yemen<sup>233</sup> and an escort operation for ships transporting chemical weapons out of Syria for destruction in 2013–2014.<sup>234</sup> Though piracy in the Gulf of Aden has declined significantly in recent years due to the success of international piracy efforts, there is no indication that the PLA Navy will conclude operations there. David Brewster, senior research fellow at Australian National University's National Security College, testified to the Commission that "Beijing is now using its antipiracy deployment[s] as justification for expanding its naval presence in the Indian Ocean and making it more permanent."<sup>235</sup>

#### *UN Peacekeeping Operations*

In September 2015, President Xi announced China will establish a ten-year, \$1 billion "China-UN peace and development fund" to support UN activities—to include peacekeeping operations and sustainable development programs—and commit 8,000 personnel\* to build a UN "peacekeeping standby force."†<sup>236</sup> China currently has roughly 2,600 personnel active in UN peacekeeping operations.<sup>237</sup> China's peacekeeping activities reflect its apparent desire to generate international goodwill and soft power by demonstrating that it is a responsible stakeholder in international affairs.<sup>238</sup> These deployments also support China's goal to safeguard its overseas economic interests and expatriate citizens.<sup>239</sup> Moreover, conducting peacekeeping operations around the world could provide Chinese personnel with valuable logistics, mobility, and operational experience.<sup>240</sup> In the most notable case of Chinese peacekeeping operations, in December 2015 China deployed 1,031 personnel on a UN

\*"Personnel" here refers to police, military experts, and troops.

†Although authoritative sources have not outlined the mission or role of China's proposed peacekeeping standby force, it could resemble the former Denmark-led Standby High-Readiness Brigade, an international force of thousands of soldiers that from 1997 to 2009 was available to the UN as a rapidly deployable peacekeeping force. Peter Viggo Jakobsen, "Peacekeeping Contributor Profile: Denmark," *Providing for Peacekeeping*, June 2016; UN, *SHIRBRIG: Ready to Deploy*, 2007.

peacekeeping mission in South Sudan,<sup>241</sup> where violence has threatened the civilian population of the country, as well as Chinese investments in oil production and the physical safety of Chinese workers.<sup>242</sup> In 2014, China successfully lobbied the other members of UN Security Council to support a resolution directing peacekeepers in South Sudan to guard oil facilities, in addition to conducting other peacekeeping duties (China is the largest investor in South Sudan's oil sector).<sup>243</sup> Two Chinese peacekeepers were killed in July 2016 amid violence between rival factions in the country.<sup>244</sup> As of August 2016, roughly 2,200 Chinese peacekeepers were active in South Sudan and five other African countries: Côte d'Ivoire, the Democratic Republic of Congo, Liberia, Mali, and Sudan, as well as Western Sahara.<sup>245</sup>

#### *Overseas Humanitarian Assistance/Disaster Relief Operations*

According to DOD, the PLA's ability to perform overseas humanitarian assistance and disaster relief (HA/DR) operations is "modest but growing" as it gains more experience operating far from China, and China's growing HA/DR capabilities "will increase [its] options for military influence to press its diplomatic agenda, advance regional and international interests, and resolve disputes in its favor."<sup>246</sup> Moreover, in testimony before the Commission, Georgetown University professor Oriana Skylar Mastro suggested China's HA/DR operations could "provide a legitimate and nonthreatening rationale for the development of power projection capabilities."<sup>247</sup> Recent developments regarding Chinese HA/DR include the following:

- In May 2016, China conducted a search and rescue exercise in the Pearl River Delta in Guangdong Province involving 35 vessels and more than 1,300 personnel, the "largest exercise of its kind" China has organized.<sup>248</sup>
- In May 2016, a Chinese official announced China will build a base station—apparently to include port facilities—for a search and rescue ship in the Spratly Islands in the South China Sea. According to a *China Daily* report, the ship will be equipped with advanced rescue facilities, and "might carry [unmanned aerial vehicles] and underwater robots." The ship reportedly will assist fishing boats and other vessels in distress.<sup>249</sup>
- In April 2016, Chinese search and rescue vessel *Dong Hai Jiu* 101 joined an international search effort for Malaysia Airlines flight MH370.<sup>250</sup> Most of the passengers on MH370 were Chinese nationals.<sup>251</sup>
- In December 2015, approximately 200 Chinese and U.S. Army troops conducted a joint HA/DR drill in Washington State.<sup>252</sup>
- The PLA deployed more than 1,000 personnel to contribute to HA/DR in Nepal following a catastrophic earthquake in April 2015.<sup>253</sup> The Nepal mission was China's largest-ever overseas HA/DR operation.<sup>254</sup>

*Space-Tracking Facility in Argentina*

China is building a space telemetry, tracking, and control facility in Argentina.<sup>255</sup> The PLA-affiliated China Satellite Launch and Tracking Control General is managing the project.<sup>256</sup> The station will provide China a southern hemisphere node to communicate with its satellites to download images or conduct orbital adjustments without waiting for them to fly over Chinese territory.<sup>257</sup> Many observers have suggested the station could have dual-use applications, such as the ability to track missiles and space assets.<sup>258</sup> The station reportedly will support China's planned unmanned missions to the moon and Mars.<sup>259</sup>

***Military-to-Military Engagement***

As China proceeds with an ambitious military modernization program and gradually institutes reforms aimed at informationization and integration of its military services, the PLA continues to expand its engagement with foreign militaries. Since the Commission's *2015 Annual Report to Congress*, the PLA has increased the number and type of exercises it holds with other countries' armed forces.<sup>260</sup> Through such engagement, China seeks to improve its international standing and enhance its presence abroad while easing foreign anxieties about the PLA's growing capabilities and expanding missions; acquire insights into other militaries' operations, doctrine, and training methods (including those of the United States and U.S. allies and partners); and gain experience operating newly introduced platforms while helping facilitate defense industrial cooperation.<sup>261</sup>

*The PLA's Bilateral and Multilateral Exercises with Foreign Militaries*

Since November 2015, the PLA has been involved in 12 significant bilateral and multilateral exercises (see Table 1). Several of these exercises were the first of their kind, including Falcon Strike-2015 and Joint Evacuation-2016, demonstrating closer cooperation between the PLA and the militaries of Thailand and the United Kingdom, respectively. Many focused on non-traditional security challenges including counterterrorism, antipiracy, and HA/DR. They have also attempted to ease foreign countries' anxieties concerning China's military modernization and support President Xi's foreign policy objectives by seeking to shape the international system and improve the security environment along China's periphery.<sup>262</sup> The knowledge and experience acquired from these exercises can be applied to a variety of missions. The PLA also engaged in bilateral exercises focusing on missile defense operations and sea and air combat (some involving live-fire drills) with close defense partners, including Russia and Pakistan.<sup>263</sup>

**Table 1: Significant PLA Bilateral and Multilateral Military Exercises, November 2015–October 2016 \***

<b>Date</b>	<b>Exercise Name or Type (Location)</b>	<b>Other Participants</b>	<b>PLA Weapons Systems and Units Involved (if reported)</b>	<b>Details</b>
11/12/15–11/30/15	Falcon Strike-2015 (Thailand)	Thailand	J-11A fighters <sup>264</sup>	This exercise was the first ever between the two air forces. According to a Chinese Defense Ministry spokesperson, the purpose of the exercise was to enhance mutual understanding, deepen bilateral cooperation, and increase mutual trust. <sup>265</sup>
12/31/15–1/1/16	Naval Exercise (East China Sea)	Pakistan	Two missile frigates	The first naval exercise between the two countries in the East China Sea included drills on ship formation movement, search and rescue, and live-fire drills striking targets in the air and at sea. The exercise also had antipiracy and antisubmarine components. <sup>266</sup>
2/7/16	China-India 2016 Cooperation (India)	India	30 border troops	The first combined exercise between Chinese and Indian border troops was focused on HA/DR. It was designed to preserve peace and stability in the border region and promote trust between the two militaries. <sup>267</sup>
3/23/16–3/24/16	Joint Evacuation-2016 (Nanjing, China)	Great Britain	Not reported	The two countries conducted their first simulated tabletop non-combatant evacuation operation together, which simulated evacuating people from an unnamed third country in a civil war beset by terrorism, and each shared their respective policies and experiences in such operations. <sup>268</sup>

\*Not noted in this table is the PLA's involvement in military competitions with foreign armed forces, which serve as another venue for the PLA to engage with other countries' militaries and gain experience in logistics and deployment of forces in unfamiliar environments. Rather than focusing on tactics and involving specific scenarios like most military exercises, competitions typically only test certain combat skills and weapons systems. From July 30 to August 13, 2016, the PLA Army, Navy, and Air Force attended the International Army Games 2016 in Russia. Joining over 17 countries, the PLA delegation reportedly included more than 1,000 officers and soldiers participating in 21 competitions—a larger footprint than previous years. China Military Online, "International Army Games 2016 Wraps Up in Russia," August 15, 2016; China Military Online, "China Sends Troops to Participate in International Army Games 2016," July 18, 2016.

**Table 1: Significant PLA Bilateral and Multilateral Military Exercises, November 2015–October 2016—Continued**

Date	Exercise Name or Type (Location)	Other Participants	PLA Weapons Systems and Units Involved (if reported)	Details
4/9/16–4/30/16	Shaheed V (Pakistan)	Pakistan	JH-7A, J-8II, and J-11 fighters, and KJ-200 early warning aircraft	This annual exercise consisted of ground attack and air-to-air combat and simulated fighting against extremists in China's Xinjiang Uyghur Autonomous Region, Central Asia, and the northern tribal areas of Pakistan. <sup>269</sup>
4/12/16–4/16/16	Komodo-2016 (Indonesia)	United States (and 34 other countries)	Guided-missile frigate and salvage lifting ship	This exercise (now in its second iteration) consisted of drills on maritime peacekeeping and HA/DR, live-fire drills directed at surface targets, and early warning drills. <sup>270</sup>
5/2/16–5/12/16	ASEAN Defense Minister's Meeting Plus (ADMM-Plus) Maritime Security and Counterterrorism Exercise (Singapore and Brunei)	ASEAN,* the United States (and seven other countries)	Guided-missile destroyer	This semiannual exercise was larger and more complex than any previous ADMM-Plus exercise. Maritime security and counterterrorism drills included helicopter operations, divisional tactics, and land storming in a counterterrorism scenario. <sup>271</sup>
5/21/16–6/10/16	Blue Strike-2016 (Thailand)	Thailand	Warship, nine amphibious armored vehicles, air defense and antitank missile launchers, naval aviation troops, and 266 marines	In the third major exercise between the two militaries, China sent a warship and naval aviation troops to the exercise for the first time. Marines from both sides held seminars on anti-piracy, disaster relief, and air defense operations. The exercise also included training at sea and on land, including counterterrorism, anti-chemical warfare, and live-fire drills. <sup>272</sup>
5/23/16–5/28/16	Aerospace Security-2016 (Russia)	Russia	Not reported	The two countries conducted their first "computer-assisted anti-missile defense exercise."

\* All ASEAN members sent troops to the exercise except Burma and Laos. China Military Online, "Destroyer Lanzhou Leaves Singapore after ADMM-Plus Exercise," May 13, 2016.

**Table 1: Significant PLA Bilateral and Multilateral Military Exercises, November 2015–October 2016—Continued**

Date	Exercise Name or Type (Location)	Other Participants	PLA Weapons Systems and Units Involved (if reported)	Details
				The purpose of the exercise was to improve the capacity of each country to respond to intentional or accidental cruise and ballistic missile strikes. <sup>273</sup>
6/30/16–8/4/16	Rim of the Pacific (RIMPAC) 2016 (United States)	United States (and 25 other countries)	Guided missile frigate, guided missile destroyer, hospital ship, replenishment ship, and submarine-rescue ship	During the exercise, the PLA Navy participated in HA/DR, submarine rescue, maritime blockade, and antipiracy training. <sup>274</sup>
9/5/16–9/21/16	Peace Mission-2016 (Kyrgyzstan)	Shanghai Cooperation Organization (SCO) countries *	Self-propelled artillery, fighters, and Z-9 helicopters	In the eighth iteration of Peace Mission, which has been conducted since 2005, the SCO countries held the counterterrorism exercise for the first time in Kyrgyzstan. The exercise was designed to strengthen mutual trust and combat the “three evils” of terrorism, extremism, and separatism. <sup>275</sup>
9/12/16–9/20/16	Joint Sea-2016 (South China Sea)	Russia	11 fixed-wing aircraft, eight helicopters, 10 ships, and 160 marines	The annual Joint Sea exercise was conducted for the first time in the South China Sea in undisputed waters near Zhanjiang, home of the PLA Navy’s South Sea Fleet. The exercise focused on amphibious operations and “island seizing,” and also included air defense, antisubmarine warfare, and search and rescue drills. <sup>276</sup>
Forthcoming 2016	Gulf of Aden Counter-piracy Exercise	United States	N/A	N/A

\*SCO member countries include China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Afghanistan, Belarus, Iran, and Mongolia are observer states, and India and Pakistan are in the process of becoming full members. The organization was established in 2001 and is the primary vehicle for China’s security engagement with Central Asia.

*The PLA Participates in RIMPAC 2016 Exercise*

Despite opposition from some U.S. defense analysts and members of Congress,\* the United States invited China to participate in its biennial RIMPAC exercise for the second time in a row. Already the world's largest naval exercise, this year's exercise expanded in size to involve 26 countries (compared to 22 in the previous iteration). The PLA Navy slightly increased its delegation from four to five ships compared to RIMPAC 2014—including a submarine rescue ship for the first time—and increased its number of participating personnel from 1,100 to 1,200.<sup>277</sup> Before the exercise, the PLA Navy task force participated in a group sail† from waters near Guam to Hawaii, where the exercise was staged, with several U.S. destroyers.<sup>278</sup> During the exercise, the PLA Navy participated in HA/DR, submarine rescue, maritime blockade, and antipiracy drills, but was restricted by U.S. law, per the National Defense Authorization Act for Fiscal Year 2000,<sup>279</sup> from engaging in combat drills related to surface warfare, air and missile defense, and amphibious operations.<sup>280</sup>

*China and Russia Conduct South China Sea Naval Exercise*

In September, China and Russia conducted an eight-day-long naval exercise, Joint Sea-2016—their first exercise together in the South China Sea—with five Russian ships and ten PLA Navy ships participating, including surface combatants and support ships from both countries, as well as Chinese submarines.<sup>281</sup> According to analysts Peter W. Singer and Jeffrey Lin, the Chinese task group comprised “some of China’s most modern warships,” including a Type 052C (LUYANG II) destroyer, a Type 052B (LUYANG I) destroyer, and three Type 054A (JIANGKAI II) frigates;<sup>282</sup> the Russian task group included two 1980s-vintage UDALOY I destroyers.<sup>283</sup> The Russian contingent also included two helicopters, amphibious assault craft, and 90 marines; the Chinese contingent included 11 fixed-wing aircraft, eight helicopters, and 160 marines. The exercise, which has been held annually since 2012, was based in Zhanjiang, a city in southern China’s Guangdong Province and the headquarters of the PLA Navy South Sea Fleet.<sup>284</sup> According to Chinese state-run media, it was held in undisputed waters to the east of Zhanjiang.<sup>285</sup> It focused on “island-seizing,” among other drills covering amphibious operations, air defense, anti-submarine warfare, and search and rescue; 2015’s Joint Sea-2015 II drill in the Sea of Japan also emphasized forced incursions and island landing.<sup>286</sup> This is the first time the PLA has conducted a naval exercise in the South China Sea with another country. Beijing has long argued that outside countries should not “meddle” in the South China Sea dispute.<sup>287</sup>

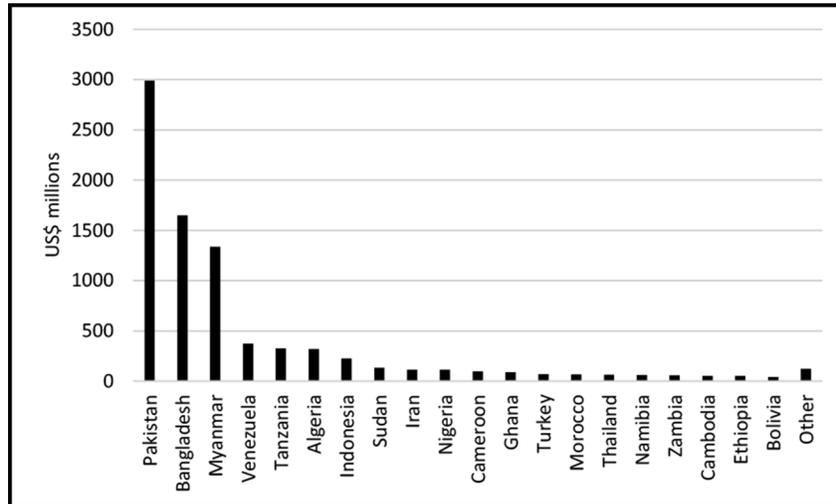
\*Much of the opposition was related to China’s assertive actions in the South China Sea. Notably, in May 2015, senators Jack Reed and John McCain, the bipartisan leadership of the Senate Armed Services Committee, co-authored a letter to the Obama Administration expressing their opposition to inviting China to RIMPAC. Shirley Kan, “Rescind China’s Invitation to Join RIMPAC,” *PacNet* #35 (Center for Strategic and International Studies), April 15, 2016; USNI News, “Document: McCain, Reed Letter to SECDEF Carter on Chinese Actions in South China Sea,” May 22, 2015.

†According to the U.S. Navy, the group sail “offers participating units the chance to operate together and conduct basic training-like tactical maneuvering drills and communication system checks. [It] helps prepare participating units for the more complex exercises conducted during RIMPAC.” Commander Naval Surface Force U.S. Pacific Fleet, *International Ships Sail to Hawaii for Rim of the Pacific 2016*, June 24, 2016.

### **Military Sales**

China was the third-largest arms exporter worldwide in aggregate terms during the 2011–2015 period with \$8.5 billion in exports, following the United States with \$46.9 billion and Russia with \$36.2 billion (all in constant 1990 dollars).<sup>288</sup> Comparing five-year periods, China’s exports of major arms rose 88 percent from \$4.5 billion between 2006–2010 and 2011–2015, while U.S. and Russian exports rose 27 and 28 percent, respectively,\* meaning China’s share of global arms sales rose from 3.6 to 5.9 percent.<sup>289</sup> During the past five years China has sold arms to 37 countries, with Pakistan (35 percent), Bangladesh (20 percent), and Burma (Myanmar) (16 percent) as top recipients.<sup>290</sup> China’s customer base has also extended to Africa, the Middle East, and South America, with exports to Algeria, Nigeria, and Venezuela surging late in this period.<sup>291</sup> Over two-thirds of African countries now use military equipment from China, including at least ten countries that only began using Chinese arms over the past decade, according to a report published by the International Institute for Strategic Studies in 2016.<sup>292</sup> All recipients of China’s arms exports to date have been low- and middle-income countries (see Figure 8).<sup>293</sup>

**Figure 8: China’s Arms Sales by Recipient, 2011–2015**  
(constant 1990 dollars)



Source: Stockholm International Peace Research Institute, *SIPRI Arms Transfers Database*. <https://www.sipri.org/databases/armstransfers>.

Major Chinese arms exports agreed upon or revealed in 2016 include the following:

- Nigeria reportedly signed an agreement to purchase the JF-17, an inexpensive multirole fighter jointly produced by China and Pakistan,<sup>292</sup> in January 2016.<sup>295</sup> If the agreement is fulfilled,

\*This represents a decline from last year’s comparison of back-to-back five-year periods (2005–2009 and 2010–2014), which showed a 143 percent rise. U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 254.

Nigeria will be the first export customer for this aircraft; prospective customers have withdrawn from negotiations in several previous cases.\*<sup>296</sup>

- Thailand's defense minister announced in July 2016 that the Royal Thai Navy would seek cabinet approval to purchase YUAN-class diesel-electric submarines from China, a contract reportedly worth \$1 billion, despite Thailand's government reportedly deciding to shelve the deal last year. The purchase is indicative of Thailand's efforts to pursue closer relations with China, even as relations with the United States, a treaty ally, have soured following Thailand's 2014 military coup and the suspension of U.S. military assistance programs as required by U.S. law.<sup>297</sup>
- Pakistan publicly displayed Chinese-made Z-10 attack helicopters for the first time during a parade in 2016 (having begun an operational evaluation in 2015), although defense officials are reportedly still weighing the purchase. Pakistan currently operates the U.S.-made AH-1F Cobra, and is awaiting delivery of the U.S.-made AH-1Z Viper and pursuing Russian-made MI-35 Hind attack helicopters to replace these in addition to considering the Z-10, according to media reports.<sup>298</sup> A statement by a senior Pakistani naval official in August 2016 confirmed that the purchase of eight YUAN-class submarines, announced in 2015, is moving forward and scheduled for completion by 2028;<sup>299</sup> this sale indicates that Chinese arms exports to Pakistan are advancing in sophistication.<sup>300</sup>
- Turkmenistan conducted a military exercise in April 2016 that revealed it purchased the FD-2000 long-range surface-to-air missile—the export version of China's HQ-9, with a range of approximately 200 km (124 mi)—as well as the export version of the medium-range HQ-12, with a range of 50 km (31 mi).<sup>301</sup>
- Kazakhstan will purchase Pterodactyl WJ-1 unmanned aerial vehicles (UAVs) from China, according to a media report from June 2016.<sup>302</sup> The WJ-1, produced by the Chengdu Aircraft Industry Group under the state-owned Aviation Industry Corporation of China, is an integrated reconnaissance and strike variant of a medium-altitude, long-endurance UAV in the Yilong or Wing Loong series,<sup>303</sup> which closely resembles the design of the U.S. MQ-9 Reaper.<sup>304</sup> It is closer in size to the smaller U.S. MQ-1 Predator, with significantly reduced capabilities such as a lower maximum payload weight.<sup>305</sup>

\*In February 2015, Argentina announced it would explore fighter aircraft purchases from China, potentially involving the JF-17, but did not sign a contract and no longer appears to be interested. Malaysia was reportedly discussing a JF-17 purchase, but its defense minister denied this report in December 2015. Sri Lanka was reported to have signed an agreement to buy JF-17s, but denied this in January 2016; India had lobbied hard against the purchase. At least eleven other countries have been named as potential buyers in past media reports, but none have signed agreements to date. Richard D. Fisher Jr., "DSA 2016: Pakistan Bullish on JF-17 Sales," *IHS Jane's Defence Weekly*, April 21, 2016; Ankit Panda, "Revealed: Why Sri Lanka Backed off the Sino-Pakistani JF-17 Thunder," *Diplomat (Japan)*, January 11, 2016; MercoPress (Uruguay), "Argentina's Purchase of Israeli Fighter Jets Will Be Left to Next Government," November 12, 2015; and Franz-Stefan Gady, "Is This Country the Sino-Pak JF-17 Fighter's First Customer?" *Diplomat (Japan)*, June 24, 2015.

- Media reports in early 2016 took note of the expanding use of Chinese-made UAVs worldwide, highlighted by drone strikes carried out by Iraq and Nigeria for the first time.<sup>306</sup> One article noted that during the 18 months preceding February 2016 the number of states or nonstate actors with armed drones had “quietly grown to double-digit membership, largely thanks to Chinese technology that is both less expensive and easier to obtain than U.S. drone technology.”<sup>307</sup> To date, China is reported to have sold armed UAVs to Egypt, Iraq, Burma, Nigeria, Pakistan, Saudi Arabia, and the United Arab Emirates,<sup>308</sup> while Algeria is considering a purchase,<sup>309</sup> according to public sources. One of China’s most commonly exported drones is the CH-4, one of the Caihong or Rainbow series manufactured by a subsidiary of the state-owned China Aerospace Science and Technology Corporation (see Figure 9).<sup>310</sup> This medium-altitude, long-endurance UAV also resembles the MQ-9 Reaper and is closer to it in size than the WJ-1, but again has lower capabilities, such as a smaller maximum payload weight;<sup>311</sup> the series includes reconnaissance, attack, and mixed variants.<sup>312</sup> According to a report from *People’s Daily*, China successfully carried out two CH-4-launched missile tests using satellite data links at a range of over 1000 km (621 mi) in May 2016, whereas operators could previously control Chinese-made UAVs at a maximum distance of 250 km (155 mi).<sup>313</sup> This capability, if achieved, could assist China’s UAV exports going forward.<sup>314</sup>

**Figure 9: CH-4 Unmanned Aerial Vehicle**



Source: Xinhua, “The CH-4: The AK-47 of Drones,” April 9, 2015.

\*This list included China, Iraq, Israel, Nigeria, Pakistan, Somalia, South Africa, the United Arab Emirates, the United Kingdom, and the United States, as well as nonstate actors Hezbollah and Hamas, according to this Report. At least 78 countries deploy surveillance drones. New America, “World of Drones: Military.” <http://securitydata.newamerica.net/world-drones.html>; W.J. Hennigan, “A Fast Growing Club: Countries That Use Drones for Killing by Remote Control,” *Los Angeles Times*, February 22, 2016.

## U.S.-China Security Relations in 2016

U.S.-China security relations continued to be strained in 2016, with tensions in the South China Sea playing a key role. The two sides nonetheless cooperated on several areas of mutual interest, while continuing to expand and institutionalize U.S.-China security ties.

### *Areas of Cooperation*

#### *Iran Sanctions Lifted Pursuant to 2015 Joint Comprehensive Plan of Action*

China was among the eight signatories (along with the European Union, France, Germany, Iran, Russia, the United Kingdom, and the United States) of the Joint Comprehensive Plan of Action in July 2015, which scheduled the removal of UN sanctions on Iran in exchange for the imposition of restrictions on its nuclear program. In January 2016, with these restrictions verified, the sanctions were lifted (not including unilateral sanctions imposed by specific countries).<sup>315</sup> During a visit to Iran by President Xi later in January, the first visit by a Chinese leader in 14 years, Beijing and Tehran agreed to boost trade to \$600 billion over 10 years and formulate a “25-year comprehensive document” covering “long-term and strategic cooperation.”<sup>316</sup> According to National Defense University research fellow Joel Wuthnow, “China is expected to be a prime beneficiary of the deal as Chinese firms take advantage of greater access to the Iranian market, especially in the energy sector.”<sup>317</sup>

As the primary destination for Iranian oil exports, and a historically close security partner to Tehran, China’s involvement in this effort was crucial.<sup>318</sup> For example, according to China’s foreign minister, its negotiators helped resolve a key dispute over the future of Iran’s Arak heavy-water reactor during the July 2015 negotiations.<sup>319</sup> China’s record on the Iran sanctions program is mixed, however. Former deputy assistant secretary of State for East Asian and Pacific affairs Thomas Christensen noted that China watered down the most significant UN Security Council resolution establishing the sanctions in the first place by ensuring Iran’s largest banks and energy sector were not included, and did not join North American and European countries in passing unilateral sanctions—the primary source of pressure on Iran’s economy—alongside the UN sanctions.<sup>320</sup> China also used its role in the UN Security Council to indirectly aid Iran by vetoing crucial resolutions affecting the Syrian government, Iran’s ally, during the sanctions period.<sup>321</sup> In addition, Chinese national oil companies were reportedly able to negotiate favorable prices on Iranian crude oil imports during the time in which UN sanctions were in effect (although these imports did decrease), and exploited a loophole by increasing their Iranian fuel oil imports—not covered by the sanctions—beginning in 2013.\*<sup>322</sup> Analysts have pointed out several other potential con-

\*The U.S. Department of Commerce also imposed severe restrictions on U.S. exports to Chinese telecommunications company ZTE in March 2016, after ZTE allegedly violated sanctions against exporting U.S.-made technology to Iran. Two weeks later the U.S. government granted a reprieve on these restrictions, since extended to November 2016. Juro Osawa, “U.S. Grants ZTE Another Extension of Trade-Sanctions Relief,” *Wall Street Journal*, August 18, 2016; Joel Schechtman, “U.S. Extends ZTE Reprieve for Alleged Iran Sanctions Violations,” Reuters, June

cerns that might arise from closer Sino-Iranian ties moving forward: whether China would be willing to roll back its trade deals in compliance with reimposed sanctions if Iran were to violate the agreement<sup>323</sup> (China could not block the reimposition of sanctions, based on the agreement's construction);<sup>324</sup> whether deeper strategic cooperation could weaken U.S. regional influence;<sup>325</sup> whether Chinese assistance could strengthen Iran's position and indirectly benefit nonstate actors supported by Iran;<sup>326</sup> and whether China is poised to resume major arms sales to Iran\* (although most Chinese arms sales to Iran would require a UN Security Council waiver for the first eight years of the agreement).<sup>327</sup> Thus while China's participation should be seen as an important example of international cooperation, it also likely indicates that the threshold required for Beijing to lend assistance in future challenges will be high, depending on whether the case involves vital national interests and a far-reaching threat.<sup>328</sup> (For a detailed discussion of China's approach to the rules-based international system, see Chapter 4, "China and the U.S. Rebalance to Asia.")

#### *2016 U.S.-China Strategic and Economic Dialogue*

The official U.S. State Department press release following the eighth annual Strategic and Economic Dialogue, held in Beijing from June 6 to 7, 2016, noted that Washington and Beijing expressed general agreement on several international issues: condemnation of North Korea's 2016 nuclear and ballistic missile tests and support for relevant UN Security Council resolutions; support for the UN Mission in South Sudan and the implementation of the Sudan-South Sudan peace agreement; support for cooperative efforts to promote a "peaceful, stable, and unified Afghanistan"; support for resolving the Syrian conflict through political means; and support for the Iraqi government's reform and counterterrorism efforts, for example. They also endorsed further cooperation on civil efforts such as the Container Security Initiative program and the Community Emergency Response Team training course held by U.S. federal and Chinese central disaster management organizations in 2015. More specifically, the two sides stated they would improve the implementation of previously established bilateral confidence building measures by: (1) conducting military exercises related to the Rules of Behavior for Safety of Air and Maritime Encounters † in conjunction with port visits and (2) discussing addi-

27, 2016; and Jeffrey Sparshott, "U.S. to Provide Temporary Trade Sanction Relief to China's ZTE Corp.," *Wall Street Journal*, March 21, 2016.

\*According to Dr. Wuthnow, China ended its support for Iran's nuclear program in 1997 and has largely refrained from major military sales to Iran over the last decade. Joel Wuthnow, "Posing Problems without an Alliance: China-Iran Relations after the Nuclear Deal," *National Defense University*, February 2016, 1-2.

†The Memorandum of Understanding (MOU) on Rules of Safety of Air and Maritime Encounters, agreed on by the United States and China in 2014, seeks to avoid miscalculations and misunderstandings in encounters between U.S. and Chinese surface ships by establishing best practices for unplanned encounters. During a state visit in September 2015, the United States and China announced an air-to-air annex to the Rules MOU. The original MOU followed a similar nonbinding agreement, the Code for Unplanned Encounters at Sea, signed in 2014 by China, the United States, and 19 other Pacific countries. U.S. Department of Defense and China's Ministry of National Defense, *Supplement to the Memorandum of Understanding on the Rules of Behavior for Safety of Air and Maritime Encounters between the Department of Defense of the United States of America and the Ministry of Defense of the People's Republic of China*, September 18, 2015; U.S. Department of Defense and China's Ministry of National Defense, *Memorandum of Understanding between the United States of America Department of Defense and the People's Republic of China's Ministry of Defense on Notification of Major Military Activities Con-*

tional annexes to the 2014 Notification of Major Military Activities Memorandum of Understanding, including “a mechanism for informing the other party of ballistic missile launches.”<sup>329</sup> The dialogue was overshadowed, however, by China’s assertive behavior in the South China Sea and economic disputes,<sup>\*</sup><sup>330</sup> reflected in President Xi’s statement that “some differences can be solved through hard work . . . [but] some differences cannot be solved at the moment.”<sup>331</sup> Moreover, DOD officials reported an “unsafe” intercept in which Chinese J–11 aircraft came within 50 feet of a U.S. EP–3 reconnaissance aircraft that was conducting a routine mission in international airspace over the South China Sea in May 2016,<sup>†</sup> showing that concerns regarding dangerous actions persist despite statements by Administration officials that China’s behavior is becoming safer and more professional.<sup>332</sup>

#### *2016 Nuclear Security Summit*

Following the fourth biannual Nuclear Security Summit, hosted in Washington in March 2016, Washington and Beijing released a Joint Statement on Nuclear Security Cooperation declaring their “commitment to working together to foster a peaceful and stable international environment by reducing the threat of nuclear terrorism and striving for a more inclusive, coordinated, sustainable and robust global nuclear security architecture for the common benefit and security of all.” The statement specifically noted the outcomes of the first annual U.S.-China bilateral talks on this topic, held in Stockholm in February 2016 and intended to “intensify [U.S.-China] cooperation to prevent nuclear terrorism and continue advancing Nuclear Security Summit goals,” as means to this end.<sup>333</sup> Specific outcomes have included the opening of the Nuclear Security Center of Excellence in Beijing, a joint U.S.-Chinese venue intended to provide nuclear security training, a forum for bilateral and regional best practices exchanges, and a location for demonstrating advanced nuclear security technologies.<sup>334</sup> Another point of action has been ongoing U.S. assistance in converting Chinese-origin Miniature Neutron Source Reactors—both in China and

*fidence Building Measures Mechanism*, November 4, 2014; and Jeremy Page, “China Won’t Necessarily Observe New Conduct Code for Navies,” *Wall Street Journal*, April 23, 2014.

<sup>\*</sup>For a detailed discussion on outcomes of the economic track, see Chapter 1, Section 1, “Year in Review: Economics and Trade.”

<sup>†</sup>The 2015 air-to-air annex to the U.S.-China MOU on Rules of Safety of Air and Maritime Encounters calls for “safe separation” during such intercepts but does not define this term specifically, instead requiring both militaries to refer to their own national rules and relevant international guidance, among other factors. It also notes that what qualifies as safe separation can vary depending on circumstances. The annex specifically refers to the Chicago Convention on International Civil Aviation (initiated in 1944), which calls for intercepts to not endanger the lives of persons on board or the safety of aircraft, but also does not define what specifically constitutes a “safe” as opposed to “unsafe” intercept, leaving it to signatory countries to write national laws that comply with the Convention. U.S. Federal Aviation Administration regulations, which provide much greater detail and are followed by U.S. military aircraft, set the threshold for safe separation at 500 feet. U.S. Department of Defense and China’s Ministry of National Defense, *Supplement to the Memorandum of Understanding on the Rules of Behavior for Safety of Air and Maritime Encounters between the Department of Defense of the United States of America and the Ministry of Defense of the People’s Republic of China*, September 18, 2015; International Civil Aviation Organization, *Convention on International Civil Aviation Part 1*, Chapter 1, Article 3 bis, 2006, 3; and U.S. Federal Aviation Administration, *Aeronautical Information Manual Chapter 5, Section 6: National Security and Interception Procedures*, February 11, 2010.

abroad—from highly enriched uranium (HEU) fuel to low-enriched uranium (LEU) fuel.\*<sup>335</sup>

### Select U.S.-China Security-Related Visits and Exchanges in 2016

*Shangri-La Dialogue:* At the 15th Shangri-La Dialogue,<sup>†</sup> held in Singapore in June 2016, U.S. Secretary of Defense Ashton Carter advocated for a “principled security network” featuring expanded cooperation among regional militaries, and warned that China risked building a “Great Wall of self-isolation” through its actions in the South China Sea.<sup>336</sup> Other regional defense officials at the dialogue voiced their support for a rules-based international order, while Chinese defense officials reiterated Beijing’s position on its territorial claims in the South China Sea.<sup>337</sup> Admiral Sun Jianguo, deputy chief of the Joint Staff Department under the Central Military Commission, reading from prepared remarks rather than addressing other participants’ questions,<sup>338</sup> emphasized that China did not intend to comply with the upcoming UN Tribunal ruling and insisted that China’s sovereignty is indisputable.<sup>339</sup>

*High-Level Dialogue on Cybercrime and Related Issues:* China’s Minister of Public Security chaired the second high-level U.S.-Chinese dialogue on cybercrime in Beijing in June 2016, pursuant to an agreement signed in Washington in September 2015 in which both sides pledged not to conduct or knowingly support cyber-enabled theft of intellectual property for commercial gain.<sup>340</sup> At this event, U.S. and Chinese officials agreed to deepen cooperation on combating cybercrime, reflected positively on the cybercrime-themed “table-top exercise” held in April 2016 and decided to hold a second prior to the next dialogue, and determined they would implement a previously planned hotline for cyber-related discussions.<sup>341</sup> The next high-level meeting on cybercrime is planned for late 2016 in Washington.<sup>342</sup>

*Port visits:* Port visits have grown in frequency since the Commission’s 2015 Annual Report to Congress, with a PLA Navy antipiracy task group visiting Florida (the PLA’s first visit to the United States’ East Coast) and Hawaii in November and December 2015, respectively, and the PLA Navy hospital ship *Peace*

\*According to the International Atomic Energy Agency, there are four Chinese-built Miniature Neutron Source Reactors in China, two of which are in operation, and one each in Ghana, Iran, Nigeria, Pakistan, and Syria. These are low-power (approximately 30 kilowatt) research reactors used primarily for scientific analysis, education, and training; national and international efforts have been underway since 1978 to convert them from the use of HEU to LEU fuel. HEU is enriched to the level theoretically required for the construction of a gun-type nuclear weapon (it differs substantially from weapons-grade uranium, which is enriched to a much higher level; the higher the enrichment level, the lower the amount of material needed to construct a weapon). International Atomic Energy Agency, “CRP on Conversion of Miniature Neutron Source Research Reactors (MNSR) to Low Enriched Uranium (LEU),” June 14, 2016; Nuclear Threat Initiative, “Civilian HEU Reduction and Elimination Resource Collection,” March 15, 2016.

†The Shangri-La Dialogue, or Asia Security Summit, is hosted annually by the International Institute for Strategic Studies. It is attended by defense ministers and their civilian and military chiefs of staff from over 50 Asia Pacific countries. International Institute for Strategic Studies, “About the IISS Shangri-La Dialogue.”

**Select U.S.-China Security-Related Visits and Exchanges in 2016—Continued**

*Ark* visiting San Diego in November 2015.<sup>343</sup> Also in November 2015, U.S. Navy destroyer *Stethem* visited Shanghai, where U.S. Pacific Fleet Commander Admiral Scott Swift met with PLA Navy Commander Wu Shengli and PLA Navy East Sea Fleet Commander Admiral Su Zhiqian.<sup>344</sup> Chinese authorities abruptly canceled a planned May 2016 visit to Hong Kong by U.S. aircraft carrier *John C. Stennis*—the first time Beijing had canceled a port visit since 2014—apparently in response to U.S. Navy operations in the South China Sea, but a then-ongoing visit to Hong Kong by command ship *Blue Ridge* proceeded as planned.<sup>345</sup> The U.S. guided missile destroyer *Benfold* made a scheduled port visit to Qingdao, China in August 2016.<sup>346</sup>

*High-level official visits:* In November 2015, U.S. Pacific Command Commander Admiral Harry Harris met with PLA generals in Beijing and Nanjing, including Chief of the Joint Staff Department under the Central Military Commission General Fang Fenghui, Vice Chairman of the Central Military Commission General Fan Changlong, and then-Nanjing Military Region commander general Cai Yingting;\* Secretary Carter also met with Chinese Minister of National Defense General Chang Wanquan in Kuala Lumpur at the ADMM-Plus summit.<sup>347</sup> U.S. Chief of Naval Operations (CNO) John Richardson traveled to China for three days in July 2016, where he visited the headquarters of China's North Sea Fleet in Qingdao, toured Chinese aircraft carrier *Liaoning* and the PLA Navy's submarine academy, and met with Commander Wu, continuing the trend set by his predecessor, CNO Jonathan Greenert, who met several times with Commander Wu.<sup>348</sup> Admiral Swift also visited Qingdao in August 2016.<sup>349</sup>

*Other exchanges:* CNO Richardson held a video teleconference with Commander Wu in January 2016, continuing the program of quarterly discussions begun in 2015. CNO Richardson stated after the teleconference that “face-to-face interaction and frank exchanges help build a personal connection that benefits both our navies now and into the future” and a U.S. Navy press release noted that such conversations serve to establish a dialogue that reduces the risk of miscalculation between U.S. and Chinese naval forces.<sup>350</sup> In January 2016 U.S. and Chinese defense officials met in China for the Defense Policy Coordination Talks, where they reportedly “emphasized the positive momentum sustained in the U.S.-China military-military relationship over the past year” and discussed key regional and global issues.<sup>351</sup> The U.S. Army held its inaugural Army-to-Army Dialogue Mechanism with Chinese forces in Beijing in November 2015.<sup>352</sup>

\*Due to ongoing reforms in the Chinese military structure, the former Nanjing Military Region is now the Eastern Theater Command, headquartered in Nanjing.

### ***Areas of Tension***

#### *Planned U.S. Missile Defense Deployment in South Korea*

Following North Korea's nuclear weapons test in January and satellite test using ballistic missile technology in February, South Korean officials announced they would enter talks regarding the deployment of a U.S. Terminal High Altitude Area Defense (THAAD) missile defense system to South Korea. Later in the year, the United States and South Korea agreed to deploy one THAAD battalion in South Korea by the end of 2017.<sup>353</sup> While U.S. officials have insisted the system is solely intended to defend against missile threats from North Korea and will not affect China's nuclear deterrent,<sup>354</sup> China has opposed the deployment, arguing it exceeds U.S. and Korean defense needs and will harm China's strategic interests.<sup>355</sup> China's ambassador to South Korea even stated that THAAD deployment "could destroy [China-South Korea] bilateral relations in an instant,"<sup>356</sup> and a Chinese Foreign Ministry spokesperson warned in late September that China "will take necessary measures to defend national security interests and [the] regional strategic balance."<sup>357</sup> U.S. Army Chief of Staff Mark Milley visited Beijing in August 2016 to provide a technical briefing on the system to PLA Army General Li Zuocheng in an effort to reassure Beijing that the planned deployment will not threaten China.<sup>358</sup> (For more information on the planned deployment and on North Korea-China relations, see Chapter 3, Section 4, "China and North Korea.")

#### *South China Sea*

Tensions in the South China Sea continued to affect U.S.-China relations over the past year as well. China voiced opposition to each of the freedom of navigation operations and overflights conducted by the United States in the South China Sea in 2016, and continued its attempts to shadow and warn off U.S. vessels and aircraft.<sup>359</sup> As noted earlier, China firmly rejected the July 2016 arbitration ruling that voided many of its South China Sea maritime claims,<sup>360</sup> while the United States urged Beijing to abide by the ruling.<sup>361</sup> During his three-day visit to China in July 2016, CNO Richardson reaffirmed that the U.S. Navy would continue to conduct freedom of navigation operations in the South China Sea. He also stated that his support for "a continued and deepening navy-to-navy relationship" would be "conditioned on continued safe and professional interactions [with the PLA Navy] at sea."<sup>362</sup> Commander Wu also urged cooperation, but stated that "We will never stop our construction on the Nansha [Spratly] Islands halfway ... no matter what country or person applies pressure."<sup>363</sup>

#### *U.S. Arms Sale to Taiwan*

China issued a standard condemnation regarding the U.S. arms sale to Taiwan in December 2015, and for the first time threatened sanctions against the U.S. companies involved, although it did not suspend military exchanges as it has done in the past.<sup>364</sup> (For a detailed discussion on developments in cross-Strait relations in 2016, see Chapter 3, Section 2, "China and Taiwan.")

*Cyber Espionage*

Chinese cyber espionage against a range of U.S. entities continued in 2016, to the detriment of U.S. economic and national security. (See Chapter 2, Section 3, “China’s Intelligence Services and Espionage Threats to the United States,” for a discussion of Chinese intelligence operations and espionage against the United States. See Chapter 1, Section 1, “Year in Review: Economics and Trade,” for an update on China’s September 2015 pledge not to conduct or knowingly support cyber-enabled theft of intellectual property.)

*U.S. Rebalance to Asia*

Finally, Washington’s Asia Pacific strategy aimed at sustaining its regional leadership—the “Rebalance to Asia”—continued to undergo criticism in Beijing in 2016, likely based not on the strategy itself but on underlying differences in the two countries’ approaches to regional and international norms. (For a detailed discussion on the Rebalance strategy and U.S.-China relations, see Chapter 4, “China and the U.S. Rebalance to Asia.”)

**Conclusions**

- In 2016, an international tribunal ruled overwhelmingly in the Philippines’ favor in its case regarding China’s South China Sea claims and activities; Beijing expectedly rejected the ruling. One of the most significant findings of the ruling was that China’s claims to historic rights and resources within the “nine-dash line” have no legal basis. The strength of the ruling will be in its support from and enforcement by the international community, as the ruling itself has no enforcement mechanism. Aside from the arbitration ruling, tensions remained high in the South China Sea, as China landed several aircraft in the Spratly Islands and conducted military deployments to the Paracel Islands, both of which are disputed territories.
- The risk of escalation in tensions between China and Japan in the East China Sea and miscalculation or an accidental collision between Chinese and Japanese ships and aircraft has grown with the first instances of the Chinese navy sailing within 24 nautical miles of the disputed Senkaku Islands, the increased size of Chinese coast guard ships patrolling there, and the growing frequency of scrambles of Japanese fighter aircraft against Chinese aircraft.
- The ongoing People’s Liberation Army (PLA) reorganization, the most sweeping structural reorganization of the PLA since the 1950s, seeks to address operational and developmental challenges Beijing believes have prevented the PLA from meeting the needs of modern warfare. Operational challenges addressed by flattening command and control between Beijing and the theaters could improve the PLA’s capability to conduct joint integrated operations against a range of perceived threats along China’s periphery and within western China. Though China seeks to complete reforms by 2020, it will likely take longer. However,

once reforms are fully realized the PLA will be better positioned to execute the contingency operations assigned to each theater.

- China's reported 2016 military budget grew relative to the previous year at the lowest rate in six years, with slowing economic growth likely playing a role. Future defense spending increases should be sustainable in the near term, however. China is acquiring a growing number of increasingly advanced multi-mission ships, fighter aircraft, heavy transport aircraft, and space assets, which will increase its ability to project power both near and far from its shores. The PLA's improving force projection capabilities will strengthen its hand in regional military conflicts and support its imperative to protect its overseas interests.
- China's increasing overseas military presence reflects its interest and willingness to use military force to defend its growing overseas assets. China's global security activities likely will continue to increase as the population of Chinese nationals overseas grows along with Chinese overseas economic activity and national interests.
- China's military exercises will continue to expand in complexity and scale as the PLA works to overcome its lack of combat experience. As exercises increase in complexity they will reveal insights into specific missions or contingency operations the PLA may be preparing to conduct along China's periphery or beyond. China has also increased the number and type of military exercises it holds with other countries; many of these exercises focused on nontraditional security challenges, including counterterrorism, antipiracy, and humanitarian assistance/disaster relief, helping the PLA improve its capacity to conduct such operations and ease other countries' anxieties about China's military modernization.
- Despite cooperation on several areas of mutual interest and the continued expansion of security ties, U.S.-China relations over the past year continued to be strained. Points of tension included China's activities in the South China Sea, the planned deployment of a U.S. Terminal High Altitude Area Defense (THAAD) missile defense system to South Korea, the U.S. arms sale to Taiwan, Chinese cyber espionage activities, and the U.S. Rebalance to Asia strategy.

## ENDNOTES FOR SECTION 1

1. Philippines' Department of Foreign Affairs, *Notification and Statement of Claim*, January 22, 2013, 12–14; Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "Arbitration on the South China Sea: Rulings from The Hague."
2. PCA Case No. 2013–19 in the Matter of the South China Sea Arbitration before an Arbitral Tribunal Constituted under Annex VII to the 1982 United Nations Convention on the Law of the Sea between the Republic of the Philippines and the People's Republic of China, *Award*, July 12, 2016, 117.
3. PCA Case No. 2013–19 in the Matter of the South China Sea Arbitration before an Arbitral Tribunal Constituted under Annex VII to the 1982 United Nations Convention on the Law of the Sea between the Republic of the Philippines and the People's Republic of China, *Award*, July 12, 2016, 260.
4. PCA Case No. 2013–19 in the Matter of the South China Sea Arbitration before an Arbitral Tribunal Constituted under Annex VII to the 1982 United Nations Convention on the Law of the Sea between the Republic of the Philippines and the People's Republic of China, *Award*, July 12, 2016, 286, 297, 318, 397, 415.
5. Permanent Court of Arbitration, *Press Release: The South China Sea Arbitration*, July 12, 2016, 2, 10.
6. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "What Countries Are Taking Sides after the South China Sea Ruling?" August 24, 2016.
7. China's Ministry of Foreign Affairs, *Statement of the Ministry of Foreign Affairs of the People's Republic of China on the Award of 12 July 2016 of the Arbitral Tribunal in the South China Sea Arbitration Established at the Request of the Republic of the Philippines*, July 12, 2016; Jane Perlez, "Beijing Protests South China Sea Ruling with Modest Show of Strength," *New York Times*, July 13, 2016; and Caitlin Campbell and Nargiza Salidjanova, "South China Sea Arbitration Ruling: What Happened, and What's Next?" *U.S.-China Economic and Security Review Commission*, July 12, 2016, 3–4.
8. Laura Zhou "China to Jail Foreign Fishermen Who Ply Trade in Sovereign Waters," *South China Morning Post* (Hong Kong), August 3, 2016; *People's Court Daily*, Supreme Court Releases Judicial Interpretation on Hearing Cases Related to China's Jurisdictional Waters, August 2, 2016. Staff translation.
9. Mark E. Rosen, "After the South China Sea Arbitration," *Diplomat* (Japan), June 21, 2016.
10. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 13.
11. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 13; Steven Stashwick, "Cuarteron Reef's New Radar: The China Coast Guard's Best New Toy?" *Diplomat* (Japan), March 29, 2016.
12. Liu Yizhan and Zhao Yingquan, "Test Flights of China's Civilian Aircraft at Newly-Built Airports on Mischief Reef and Subi Reef Are Successful," *Xinhua*, July 13, 2016. Staff translation.
13. BBC, "China Lands More Civilian Planes on Fiery Cross Reef," January 7, 2016; Ben Blanchard, "Chinese Military Aircraft Makes First Public Landing on Disputed Island," Reuters, April 18, 2016.
14. Ben Blanchard, "Chinese Military Aircraft Makes First Public Landing on Disputed Island," Reuters, April 18, 2016.
15. *Xinhua*, "Test Flights at the Newly-Built Airports on Mischief Reef and Subi Reef in China's Spratly Islands Are Successfully Carried Out," July 12, 2016. Staff translation; Liu Yizhan and Zhao Yingquan, "Test Flights of China's Civilian Aircraft at Newly-Built Airports on Mischief Reef and Subi Reef Are Successful," *Xinhua*, July 13, 2016. Staff translation.
16. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "Build It and They Will Come," August 9, 2016.
17. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 13; USNI News, "Document: DNI Clapper Assessment of Chinese Militarization, Reclamation in South China Sea," March 8, 2016.
18. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "Another Piece of the Puzzle: China Builds New Radar Facilities in the Spratly Islands," February 22, 2016.
19. Steven Stashwick, "Cuarteron Reef's New Radar: The China Coast Guard's Best New Toy?" *Diplomat* (Japan), March 29, 2016.

20. Greg Torode, "Exclusive: Vietnam Moves New Rocket Launchers into Disputed South China Sea-Sources," Reuters, August 10, 2016.
21. John W. McManus, "Spratly Islands Importance, Damage, and Options for Peace" (Johns Hopkins University School of Advanced International Studies, Washington, DC, October 19, 2015); Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "Island Tracker."
22. John W. McManus, "Offshore Coral Reef Damage, Overfishing and Paths to Peace in the South China Sea," draft accepted for publication in Erik Franckx and Marco Benatar, eds., *International Journal of Marine and Coastal Law* (special edition on the South China Sea), forthcoming in 2017.
23. PCA Case No. 2013–19 in the Matter of the South China Sea Arbitration before an Arbitral Tribunal Constituted under Annex VII to the 1982 United Nations Convention on the Law of the Sea between the Republic of the Philippines and the People's Republic of China, *Award*, July 12, 2016, 359.
24. China's National Development and Reform Commission, *National Development and Reform Commission Draws up a Plan for the Construction of Civilian Infrastructure on the Islands and Reefs in the Spratly Islands*, June 17, 2015. Staff translation; China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Hua Chunying's Regular Press Conference on April 9, 2015*, April 9, 2015.
25. Conor M. Kennedy and Andrew S. Erickson "From Frontier to Frontline: Tanmen Maritime Militia's Leading Role Pt. 2," *Center for International Maritime Security*, May 17, 2016; Jeremy Page, "Vietnam Accuses Chinese Ships," *Wall Street Journal*, December 3, 2012; Bloomberg, "Vietnam Says Chinese Boat Harassed Survey Ship; China Disputes," June 9, 2011; and CNN, "Pentagon Says Chinese Vessels Harassed U.S. Ship," March 9, 2009.
26. Andrew Erickson and Conor M. Kennedy, "China's Fishing Militia Is a Military Force in All but Name," *War Is Boring* (Blog), July 9, 2016.
27. Rachael Bale, "One of the World's Biggest Fisheries Is on the Verge of Collapse," *National Geographic*, August 29, 2016.
28. Wendell Minnick, "China Expands Presence with Fighters on Woody Island," *Defense News*, November 8, 2015.
29. Ankit Panda, "Chinese J-11 Fighters Exercise in the South China Sea after US Navy Patrols," *Diplomat* (Japan), November 2, 2015.
30. Lucas Tomlinson and Yonat Friling, "Chinese Fighter Jets Seen on Contested South China Sea Island, Evidence of Beijing's Latest Bold Move," Fox News, April 12, 2016.
31. Sean O'Connor, "Imagery Shows Chinese HQ-9 Battery Being Removed from Woody Island," *IHS Jane's Defence Weekly*, July 21, 2016; Lucas Tomlinson and Yonat Friling, "Chinese Fighter Jets Seen on Contested South China Sea Island, Evidence of Beijing's Latest Bold Move," Fox News, April 12, 2016; and Lucas Tomlinson and Yonat Friling, "Exclusive: China Sends Surface-to-Air Missiles to Contested Island in Provocative Move," Fox News, February 16, 2016.
32. Hope Hodge Seck, "China Has Deployed Missiles to Disputed Island Before, US Admiral Says," *Military.com*, February 19, 2016.
33. Sean O'Connor, "Imagery Shows Chinese HQ-9 Battery Being Removed from Woody Island," *IHS Jane's Defence Weekly*, July 21, 2016.
34. Xinhua, "Chinese Navy Conducts Combat Drill in South China Sea," July 9, 2016.
35. Xinhua, "Chinese Navy Conducts Combat Drill in South China Sea," July 9, 2016.
36. *Global Times* (China), "China to Conduct Another Drill in S. China Sea," July 20, 2016.
37. China Military Online, "J-11 Fighter Jets Conduct Live-Fire Training in South China Sea," July 22, 2016.
38. Xinhua, "China's Air Force Conducts Combat Air Patrol in South China Sea," July 18, 2016.
39. Xinhua, "Chinese Military Aircraft Patrol South China Sea," August 6, 2016.
40. China's Ministry of Foreign Affairs, *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; Permanent Court of Arbitration at The Hague, *Arbitration between the Republic of the Philippines and the People's Republic of China: Arbitral Tribunal Establishes Rules of Procedure and Initial Timetable*, August 27, 2013; and China's Embassy to the Philippines, *2013 No. 039*, February 19, 2013. See also Julian Ku, "A Guide to Countering Chinese Government Spin on the Fairness of the South China Sea Arbitration Tribunal," *Lawfare* (Blog), June 20, 2016.

41. Amy Searight, "The South China Sea Arbitration: Anticipating Next Moves and Countermoves" (Center for Strategic and International Studies, Washington, DC, June 20, 2016).
42. China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Lu Kang's Regular Press Conference on June 14, 2016*, June 14, 2016.
43. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "Arbitration Support Tracker," June 15, 2016.
44. *China Watch* (*Washington Post*), "Manila Has No Leg to Stand On," June 2, 2016.
45. China's Ministry of Foreign Affairs, *San Francisco Chronicle Publishes Chinese Consul-General's Article on South China Sea*, June 14, 2016.
46. Zhang Yunbi, "Philippines Push Seen as Threat to Peace," *China Watch* (*Telegraph*), April 26, 2016.
47. John Fitzgerald, "Australian Media Deals Are a Victory for Chinese Propaganda," *The Interpreter* (Lowy Institute for International Policy blog), May 31, 2016.
48. Fang Bing and Zhang Zhen, "China Airs Propaganda Video over New York's Times Square," *Voice of America*, August 7, 2016.
49. Association of Southeast Asian Nations, "Joint Communique of the 49th ASEAN Foreign Ministers Meeting," July 24, 2016.
50. Cris Larano, "Philippines' Duterte Says Arbitration Ruling to Be Basis of South China Sea Talks," *Wall Street Journal*, September 2, 2016; *Economist*, "Change of Command in the Philippines: Talk Duterte to Me," July 9, 2016; Patricia Lourdes Viray, "China Congratulates Duterte, Expects 'Friendly Dialogue,'" *Philippine Star*, May 17, 2016; and China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Hong Lei's Regular Press Conference on May 16, 2016*, May 16, 2016.
51. Cliff Venzon, "Ramos Meets Key Beijing Officials in Hong Kong," *Nikkei* (Japan), August 12, 2016; Manuel Mogato, "Philippines' Duterte Says Talks With China on Sea Dispute 'Within the Year,'" Reuters, August 23, 2016.
52. Trefor Moss, "Philippines Suspends Patrols with U.S. in South China Sea," *Wall Street Journal*, October 7, 2016.
53. Trefor Moss, "Duterte Signals Shift in U.S.-Philippine Military Alliance," *Wall Street Journal*, September 13, 2016.
54. Reuters, "Philippines' Duterte says Didn't Really Mean 'Separation' from US," October 22, 2016; Manuel Mogato and Enrico dela Cruz, "Philippines' Duterte Wants to 'Open Alliances' with Russia, China," Reuters, September 26, 2016; and Trefor Moss, "Duterte Signals Shift in U.S.-Philippine Military Alliance," *Wall Street Journal*, September 13, 2016.
55. Trefor Moss, "Philippines Suspends Patrols with U.S. in South China Sea," *Wall Street Journal*, October 7, 2016.
56. Ayako Mie, "Chinese Spy Ship Enters Japan's Territorial Waters for Second Time since End of WWII," *Japan Times*, June 15, 2016; Ayako Mie, "First Chinese Warship to Skirt Senkakus Triggers Protest from Tokyo," *Japan Times*, June 9, 2016.
57. Reiji Yoshida, "MSDF Ready to 'Police' Incursions near Senkaku Islands, Suga Says," *Japan Times*, January 12, 2016.
58. Japan's Ministry of Foreign Affairs, *Protest against the Intrusion of Chinese Coast Guard into Japan's Territorial Waters Surrounding the Senkaku Islands*, August 6, 2016.
59. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "East China Sea Tensions Approaching a Slow Boil," April 14, 2016.
60. Ryan Martinson, "East Asian Security in the Age of the Chinese Mega-Cutter," *Center for International Maritime Security*, July 3, 2015; Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "East China Sea Tensions: Approaching a Slow Boil," April 14, 2016.
61. Ryan Martinson, "East Asian Security in the Age of the Chinese Mega-Cutter," *Center for International Maritime Security*, July 3, 2015.
62. Kyodo (Japan), "Japan Coast Guard Deploys 12 Ships to Patrol Senkakus," April 4, 2016.
63. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "East China Sea Tensions: Approaching a Slow Boil," April 14, 2016.
64. Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "East China Sea Tensions: Approaching a Slow Boil," April 14, 2016.
65. Kiyoshi Takenaka, "Japan Jet Scrambles against China Planes Double in January-March," Reuters, April 22, 2016; Center for Strategic and International Studies, Asia Maritime Transparency Initiative, "East China Sea Tensions: Approaching a Slow Boil," April 14, 2016.
66. Kiyoshi Takenaka, "Japan Jet Scrambles against China Planes Double in January-March," Reuters, April 22, 2016.

67. Tim Kelly, "Japan Says Chinese Military Activity in East China Sea Escalating," Reuters, June 30, 2016.
68. Kiyoshi Takenaka, "Japan Jet Scrambles against China Planes Double in January-March," Reuters, April 22, 2016.
69. Mari Yamaguchi and Didi Tang, "Japan Denies Its Jets Were Provocative in Chinese Encounter," Associated Press, July 5, 2016.
70. M. Taylor Fravel, "China's Changing Approach to Military Strategy: The Science of Military Strategy from 2001 and 2013," in Joe McReynolds, ed., *China's Evolving Military Strategy*, Jamestown Foundation, 2016, 46; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 1.
71. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, i.
72. M. Taylor Fravel, "China's Changing Approach to Military Strategy: The Science of Military Strategy from 2001 and 2013," in Joe McReynolds, ed., *China's Evolving Military Strategy*, Jamestown Foundation, 2016, 46; Xinhua, "Central Military Commission's Opinions on Deepening Reforms of National Defense and Armed Forces," January 1, 2016; Kevin McCauley, "PLA Transformation: Difficult Military Reforms Begin," *Jamestown Foundation*, September 18, 2015; James Mulvenon, "Rearranging the Deck Chairs on the Liaoning? The PLA Once Again Considers Reorganization," *China Leadership Monitor* 43 (Fall 2015): 3; Wen Zhizhong, "Thoroughly Understanding the Major Theoretical Perspectives, Major Strategic Thinking, and Major Policy-Making Arrangements Put Forward by the Third Plenary Session of the 18th Central Committee," *Guangzhou Zhanshi Bao*, November 26, 2013; and Xinhua, "CPC Central Committee Decision on Deepening of Reforms," November 15, 2013.
73. Xinhua, "Central Military Commission's Opinions on Deepening Reforms of National Defense and Armed Forces," January 1, 2016.
74. Xinhua, "Central Military Commission's Opinions on Deepening Reforms of National Defense and Armed Forces," January 1, 2016; Kevin N. McCauley, "PLA Transformation: Difficult Military Reforms Begin," *Jamestown Foundation*, September 18, 2015; James Mulvenon, "Rearranging the Deck Chairs on the Liaoning? The PLA Once Again Considers Reorganization," *China Leadership Monitor* 43 (Fall 2015): 4; Wen Zhizhong, "Thoroughly Understanding the Major Theoretical Perspectives, Major Strategic Thinking, and Major Policy-Making Arrangements Put Forward by the Third Plenary Session of the 18th Central Committee," *Guangzhou Zhanshi Bao*, November 26, 2013; Song Zhongping, "The Requirement for 'Winning Battles' Makes Military Reform a Pressing Concern," *Guoji Xianqu Daobao*, November 25, 2013; and Xinhua, "In Order to Implement the 18th CPC National Congress Strategic Plan for the Comprehensive Deepening of Reforms, the Third Plenary Session of the 18th CPC Central Committee Has Studied Several Major Issues Concerning the Comprehensive Deepening of Reforms and Reached the Following Decision," November 15, 2013.
75. Yao Yijiang and Lu Zhengtao, "The '2013 China Defense Affairs Annual Report: Next Stop for the People's Liberation Army—More Professional, More Career-Oriented,'" *Nanfang Zhoumo*, February 21, 2014.
76. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 3.
77. Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 20, 2016, 1.
78. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, May 2016, 3; Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 20, 2016, 2, 5; and Kenneth Allen, Dennis J. Blasko, John F. Corbett, "The PLA's New Organizational Structure: What is Known, Unknown and Speculation (Part 1)," *Jamestown Foundation*, February 4, 2016.
79. James Mulvenon, "China's Goldwater-Nichols? The Long-Awaited PLA Reorganization Has Finally Arrived," *China Leadership Monitor* 49 (March 1, 2016): 2; U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of David M. Finkelstein, January 21, 2016.
80. Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 2016, 2.

81. Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 20, 2016, 6.

82. Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 20, 2016, 6; David M. Finkelstein, "Initial Thoughts on the Reorganization and Reform of the PLA," *CNA*, January 15, 2016, 10; and Xinhua, "Central Military Commission's Opinions on Deepening Reforms of National Defense and Armed Forces," January 1, 2016.

83. Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 20, 2016, 3; David M. Finkelstein, "Initial Thoughts on the Reorganization and Reform of the PLA," *CNA*, January 15, 2016, 2; Kanwa Defense Review, "PLA Studies on Redefining China's Military Commands," May 1, 2015; Xinhua, "Full Text of White Paper on 'China's National Defense in 2006,'" December 29, 2006; and Xinhua, "Full Text of White Paper on 'China's National Defense in 2000,'" October 16, 2000.

84. Xinhua, "Full Text of PRC White Paper 'China's National Defense in 2006,'" December 29, 2006; James Mulvenon, "China's Goldwater-Nichols? The Long-Awaited PLA Reorganization Has Finally Arrived," *China Leadership Monitor* 49 (March 1, 2016): 2; and U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 43.

85. Wang Xiaohui, "What Strategic Preparations Should the Chinese Armed Forces Make," *Nanfang Zhoumo*, September 11, 2015.

86. Phillip C. Saunders and Joel Wuthnow, "China's Goldwater-Nichols? Assessing PLA Organizational Reforms," *Institute for National Strategic Studies*, April 20, 2016, 3; Liang Pengfei, "Joint Operations and Joint Training: The Only Way to Victory in War—Interviews With PLA Deputies to the National People's Congress on Joint Operations," *PLA Daily*, March 10, 2016; and Guo Yuandan, Ren Zhong, and Lan Yage, "Experts: The Five PLA Theater Commands Have Clear Goals, With the Southeast Coastal Front Being the Key Link of Future Military Operations," *Huanqiu Shibao*, February 2, 2016.

87. Ma Haoliang, "The Chain of Belonging of the 18 Group Armies Has Been Confirmed," *Ta Kung Pao*, February 23, 2016; Guo Yuandan, Ren Zhong, and Lan Yage, "Experts: The Five PLA Theater Commands have Clear Goals, with the Southeast Coastal Front Being the Key Link of Future Military Operations," *Huanqiu Shibao*, February 2, 2016.

88. Ma Haoliang, "The Chain of Belonging of the 18 Group Armies has Been Confirmed," *Ta Kung Pao*, February 23, 2016; Guo Yuandan, Ren Zhong, and Lan Yage, "Experts: The Five PLA Theater Commands have Clear Goals, with the Southeast Coastal Front Being the Key Link of Future Military Operations," *Huanqiu Shibao*, February 2, 2016.

89. June Teufel Dreyer, "China's Military Reorganization—and America's Window of Opportunity," *Foreign Policy Research Institute*, March 14, 2016.

90. Ma Haoliang, "The Chain of Belonging of the 18 Group Armies Has Been Confirmed," *Ta Kung Pao*, February 23, 2016; Guo Yuandan, Ren Zhong, and Lan Yage, "Experts: The Five PLA Theater Commands have Clear Goals, with the Southeast Coastal Front being the Key Link of Future Military Operations," *Huanqiu Shibao*, February 2, 2016.

91. June Teufel Dreyer, "China's Military Reorganization—and America's Window of Opportunity," *Foreign Policy Research Institute*, March 14, 2016; Guo Yuandan, Ren Zhong, and Lan Yage, "Experts: The Five PLA Theater Commands Have Clear Goals, With the Southeast Coastal Front Being the Key Link of Future Military Operations," *Huanqiu Shibao*, February 2, 2016.

92. Ma Haoliang, "The Chain of Belonging of the 18 Group Armies has Been Confirmed," *Ta Kung Pao*, February 23, 2016; and Guo Yuandan, Ren Zhong, and Lan Yage, "Experts: The Five PLA Theater Commands have Clear Goals, with the Southeast Coastal Front Being the Key Link of Future Military Operations," *Huanqiu Shibao*, February 2, 2016; and Kanwa Defense Review, "PLA Studies on Redefining China's Military Commands," May 1, 2015.

93. Cristina L. Garafola, "Will the PLA Reforms Succeed?" *RAND Corporation*, March 30, 2016.

94. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 1.

95. Dennis J. Blasko, *The Chinese Army Today: Tradition and Transformation for the 21st Century*, Routledge, 2006, 31; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 1.

96. David M. Finkelstein, "Initial Thoughts on the Reorganization and Reform of the PLA," *CNA*, January 15, 2016, 14.
97. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 1; David M. Finkelstein, "Initial Thoughts on the Reorganization and Reform of the PLA," *CNA*, January 15, 2016, 13; and Kelsey Davenport, "China Elevates Nuclear Rocket Force," *Arms Control Today* 46:2 (March 2016): 34.
98. David M. Finkelstein, "Initial Thoughts on the Reorganization and Reform of the PLA," *CNA*, January 15, 2016, 14; Li Xuanliang, Zhang Xuanjie, and Li Qinghua, "Meeting on Establishment of Army Leading Organ, Rocket Force, Strategic Support Force Held in Beijing; and Xi Jinping Confers Military Banners to Army, Rocket Force, Strategic Support Force Units of the People's Liberation Army and Delivers Speech," *Xinhua*, January 1, 2016.
99. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 2; David M. Finkelstein, "Initial Thoughts on the Reorganization and Reform of the PLA," *CNA*, January 15, 2016, 13.
100. John Costello, "The Strategic Support Force: China's Information Warfare Service," *Jamestown Foundation*, February 8, 2016; Qiu Yue, "Expert: PLA Strategic Support Force a Key Force to Win Wars," *China Military Online*, January 6, 2016; and Qiu Yue, "Expert: The Strategic Support Force Will Function in the Whole Process of Operations as the Key to Winning," *Renmin Wang*, January 5, 2016.
101. Junichi Takeda, "President Xi's Strong Army Strategy," *Military Research* (Japan), May 1, 2016, 50–65; John Costello, "The Strategic Support Force: China's Information Warfare Service," *Jamestown Foundation*, February 8, 2016.
102. Michael Martina and Ben Blanchard, "China Says Defense Spending Pace to Slow, to Improve Intelligence," *Reuters*, March 5, 2016.
103. International Monetary Fund, "World Economic Outlook Database," April 2016; China's National People's Congress, *Full Text: Report on China's Central, Local Budgets (2016)*, March 23, 2016.
104. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 77.
105. Center for Strategic and International Studies, *China Power*, "What Does China Really Spend on its Military?"
106. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 77.
107. Sam Perlo-Freeman, "Economics Trumps Geopolitics as China Announces Lowest Defence Budget Increase in Years," *Stockholm International Peace Research Institute*, March 7, 2016.
108. Center for Strategic and International Studies, *China Power*, "What Does China Really Spend on its Military?"
109. Consolidated Appropriations Act, 2016 § Pub. L. No. 114–113, 129 STAT. 2333 (2015); Joe Gould, "Congress Includes \$572.7B for DoD in Spending Bill," *Defense News*, December 16, 2016.
110. Stockholm International Peace Research Institute, "SIPRI Military Expenditure Database." <https://www.sipri.org/databases/armstransfers>.
111. Chris Buckley and Jane Perlez, "China Military Budget to Rise Less Than 8%, Slower Than Usual," *New York Times*, March 4, 2016.
112. *Xinhua*, "China to Raise 2016 Defense Budget by 7–8 pct: Spokesperson," March 4, 2016.
113. Tom Mitchell, "China Military Budget Hit by Economic Slowdown, Says Xi Jinping," *Financial Times*, May 25, 2016.
114. Andrew S. Erickson and Adam P. Liff, "China's Military Spending Swells Again Despite Domestic Headwinds," *Wall Street Journal*, March 5, 2015.
115. Mark Magnier, "China Lowers Growth Target to 6.5%-7% Range This Year," *Wall Street Journal*, March 5, 2016.
116. Chris Buckley and Jane Perlez, "China Military Budget to Rise Less Than 8%, Slower Than Usual," *New York Times*, March 4, 2016; Andrew S. Erickson and Adam P. Liff, "Demystifying China's Defence Spending: Less Mysterious in the Aggregate," *China Quarterly* 216 (March 25, 2013): 808.
117. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 77.
118. International Monetary Fund, "World Economic Outlook Database," April 2016.
119. Trading Economics, "China Inflation Rate." <http://www.tradingeconomics.com>.
120. Sam Perlo-Freeman, "Economics Trumps Geopolitics as China Announces Lowest Defence Budget Increase in Years," *Stockholm International Peace Research*

*Institute*, March 7, 2016; Kor Kian Beng, “Analysis: China’s Slowdown Hits Defence Budget,” *Straits Times* (Singapore), March 5, 2016; Jeremy Page, “Ailing Economy Slows China’s Military Expansion,” *Wall Street Journal*, March 4, 2016; and David Tweed, “China Defense Buildup Slows as Xi Focuses on Military Revamp,” Bloomberg, March 3, 2016.

121. Michael Chase, (Senior Political Scientist, RAND Corporation), interview with Commission staff, July 20, 2016; Andrew S. Erickson, China “Announces 7.6% Budget Increase to \$146.67 Billion (954.35 Billion Yuan): Comprehensive Context and Analysis,” *Andrew S. Erickson* (Blog), March 4, 2016; and Chris Buckley and Jane Perlez, “China Military Budget to Rise Less Than 8%, Slower than Usual,” *New York Times*, March 4, 2016.

122. Harry J. Kazianis, “China’s Great Military Spending Slowdown: Big Deal or Big Nothing?” *National Interest*, March 7, 2016; David Tweed, “China Defense Buildup Slows as Xi Focuses on Military Revamp,” Bloomberg, March 3, 2016.

123. David Tweed, “China Defense Buildup Slows as Xi Focuses on Military Revamp,” Bloomberg, March 3, 2016.

124. U.S.-China Economic and Security Review Commission, *Hearing on China’s Military Modernization and its Implications for the United States*, written testimony of Andrew Erickson, January 30, 2014.

125. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 25.

126. U.S.-China Economic and Security Review Commission, *Hearing on China’s Military Modernization and its Implications for the United States*, written testimony of Andrew Erickson, January 30, 2014.

127. *Economist*, “China’s Military Spending: At the Double,” March 15, 2014.

128. Simon Denyer, “China’s Slowing Economy Leads to Smallest Increase in Military Spending in Years,” *Washington Post*, March 4, 2016.

129. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 77.

130. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 2016, 25, 30.

131. Ronald O’Rourke, “China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress,” *Congressional Research Service*, June 17, 2016, 5.

132. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 62.

133. Jeffrey Lin and P.W. Singer, “China Stays ahead in Asian Stealth Race,” *Popular Science*, February 3, 2016; Dave Majumdar, “China’s Lethal New J–20 Warplane Takes Off,” *Buzz* (*National Interest* blog), December 29, 2015; and Jeffrey Lin and P.W. Singer, “Chinese Stealth Fighter J–20 Starts Production,” *Popular Science*, December 28, 2015.

134. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 62.

135. China’s Ministry of National Defense, *Defense Minister’s Regular Press Conference on December 31*, December 31, 2015.

136. China’s Ministry of National Defense, *Defense Minister’s Regular Press Conference on December 31*, December 31, 2015.

137. China’s Ministry of National Defense, *Defense Minister’s Regular Press Conference on December 31*, December 31, 2015.

138. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 28; Jeffrey Lin and P.W. Singer, “China’s New Carrier Gets a Ski Ramp,” *Popular Science*, May 20, 2016.

139. Sean O’Connor, “China’s First Indigenous Aircraft Carrier Nearing Completion,” *IHS Jane’s*, August 17, 2016.

140. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 28.

141. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 68.

142. Reuters, “Russia, China Sign Contract Worth over \$2 Billion for Su-35 Fighter Jets,” November 19, 2015.

143. Jesse Sloman and Lauren Dickey, “Why China’s Air Force Needs Russia’s Su-35,” *Diplomat* (Japan), June 1, 2015; Rostec (Russia), “Sukhoi Su-35S: Capabilities out of This World,” *Defense-Aerospace.com*, October 30, 2014; and Peter Wood, “Why China Wants the Su-35,” *Jamestown Foundation*, October 10, 2013.

144. Peter Wood, “Why China Wants the Su-35,” *Jamestown Foundation*, October 10, 2013.

145. *IHS Jane’s*, “Sukhoi Su-35,” in *All the World’s Aircraft*, August 10, 2016.

146. Wendell Minnick, "Russia-China Su-35 Deal Raises Reverse Engineering Issue," *Defense News*, November 20, 2015; Dave Majumdar, "Confirmed: Russia Just Sold 24 Lethal Su-35 Fighters to China," *Buzz (National Interest blog)*, November 19, 2015; and Jesse Sloman and Lauren Dickey, "Why China's Air Force Needs Russia's Su-35," *Diplomat (Japan)*, June 1, 2015. See also Yuan Can, "China Puts Development of Aircraft Engines High on Agenda, Military Expert Says," *People's Daily (China)*, March 8, 2016.

147. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 30; Wendell Minnick, "Russia-China Su-35 Deal Raises Reverse Engineering Issue," *Defense News*, November 20, 2015.

148. Jeffrey Lin and P.W. Singer, "China Rings in New Year with a New Amphibious Landing Ship," *Popular Science*, January 21, 2016; Andrew Tate, "China Commissions Type 072A LST," *IHS Jane's*, October 27, 2015.

149. Jeffrey Lin and P.W. Singer, "China Rings In New Year with a New Amphibious Landing Ship," *Popular Science*, January 21, 2016; Andrew Tate, "China Commissions Type 072A LST," *IHS Jane's*, October 27, 2015.

150. Wendell Minnick, "Analysis: China Builds Amphibious Capabilities for Taiwan Scenario," *Defense News*, May 14, 2016; Jeffrey Lin and P.W. Singer, "China Rings in New Year with a New Amphibious Landing Ship," *Popular Science*, January 21, 2016.

151. Ridzwan Rahmat, "China Commissions 22nd Type 054A Frigate into East Sea Fleet," *IHS Jane's*, February 25, 2016.

152. Gabe Collins and Andrew Erickson, "The Type 054/054A Frigate Series: China's Most Produced and Deployed Large Modern Surface Combatant," *China Signpost*, August 2, 2015.

153. *IHS Jane's*, "CSS-N-4 'Sardine' (YJ-8/YJ-8A/C-801); CSS-N-8 'Saccade' (YJ-82/YJ-83/C-802/C-802A/Noor/Ghader)," *Weapons: Naval*, May 18, 2016; *IHS Jane's*, "C-801, C-802, C-803," *Jane's Strategic Weapons Systems*, July 21, 2015; and U.S. Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, April 2015, 15, 16.

154. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 26.

155. U.S. Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, April 2015, 16.

156. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 27; Michael Pilger, "China's New YJ-18 Antiship Cruise Missile: Capabilities and Implications for U.S. Forces in the Western Pacific," *U.S.-China Economic and Security Review Commission*, October 28, 2015, 2; and U.S. Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, April 2015, 15, 16.

157. Andrew Tate, "PLAN Launches New Type 052D, Multirole Destroyer Numbers Grow," *IHS Jane's*, December 17, 2015; Sam LaGrone, "China Commissions Second Advanced Destroyer," *USNI News*, July 23, 2015.

158. Gabriel Dominguez, "Chinese Air Force Inducts Y-20 Transport Aircraft into Service," *IHS Jane's*, July 7, 2016; Jeffrey Lin and P.W. Singer, "The World's Largest Military Plane in Production Is China's Y-20," *Popular Science*, June 20, 2016.

159. Jeffrey Lin and P.W. Singer, "The World's Largest Military Plane in Production Is China's Y-20," *Popular Science*, June 20, 2016; Wendell Minnick, "China Reports Y-20 Aircraft IOC in 2017," *Defense News*, March 1, 2016; and U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 32.

160. Richard D. Fisher Jr., "China's Y-20 Transport Aircraft May Enter Service in 2016," *IHS Jane's*, March 1, 2016; Yuan Can, "China's Y-20 to Be Put into Military Use in 2016, Experts Say," *People's Daily (China)*, February 29, 2016.

161. Jeffrey Lin and P.W. Singer, "The World's Largest Military Plane in Production Is China's Y-20," *Popular Science*, June 20, 2016; Wendell Minnick, "China Reports Y-20 Aircraft IOC in 2017," *Defense News*, March 1, 2016; Richard D. Fisher Jr., "China's Y-20 Transport Aircraft May Enter Service in 2016," *IHS Jane's*, March 1, 2016; and Yuan Can, "China's Y-20 to Be Put into Military Use in 2016, Experts Say," *People's Daily (China)*, February 29, 2016.

162. U.S. Air Force, *C-17 Globemaster III*, October 1, 2015.

163. *People's Daily (China)*, "China's Y-20 Aircraft to Finish Test Flights in 2016," March 21, 2016.

164. Minnie Chan, "Lift-off for Military Tech: Chinese Rocket Launch 'Puts Space Weaponry to the Test,'" *South China Morning Post (Hong Kong)*, June 29, 2016; Wang Cong and Fu Shuanqi, "Rocket Launch Gets China One Step Closer to Own Space Station," *Space Daily*, June 28, 2016.

165. Jeffrey Lin and P.W. Singer, "Next Generation of Chinese Space Vehicles Begins its Long March (by Standing Up)," *Popular Science*, January 29, 2016; Kevin Pollpeter, "China Dream, Space Dream: China's Progress in Space Technologies and Implications for the United States," *University of California Institute on Global Conflict and Cooperation* (prepared for the U.S.-China Economic and Security Review Commission) March 2, 2015, 80–82.

166. Kevin Pollpeter, "China Dream, Space Dream: China's Progress in Space Technologies and Implications for the United States," *University of California Institute on Global Conflict and Cooperation* (prepared for the U.S.-China Economic and Security Review Commission) March 2, 2015, 80, 82.

167. Xinhua, "China Focus: Long March-7 Rocket Launches China's Five-Year Space Plan," June 26, 2016; Xinhua, "Backgrounder: A Quick Guide to China's Long March Rocket Series," June 25, 2016.

168. CNN, "China: The Next Space Superpower?" 2016; Kevin Pollpeter, "China Dream, Space Dream: China's Progress in Space Technologies and Implications for the United States," *University of California Institute on Global Conflict and Cooperation* (prepared for the U.S.-China Economic and Security Review Commission) March 2, 2015, 48.

169. *People's Daily* (China), "Maiden Flight of China's Heavy-Lift Launch Expected to Occur Within 15 Years," June 29, 2016; Minnie Chan, "Lift-off for Military Tech: Chinese Rocket Launch 'Puts Space Weaponry to the Test,'" *South China Morning Post*, June 29, 2016; and Kevin Pollpeter, "China Dream, Space Dream: China's Progress in Space Technologies and Implications for the United States," *University of California Institute on Global Conflict and Cooperation* (prepared for the U.S.-China Economic and Security Review Commission) March 2, 2015, 81.

170. Chinese Academy of Sciences, *China Eyes Breakthroughs on Heavy-lift Launch Vehicle Technologies*, June 29, 2016.

171. Associated Press, "China Launches Second Space Station, Tiangong 2," September 15, 2016.

172. Peter B. de Selding, "China Prepares Assembly of its Space Station, Invites Collaboration through U.N.," *Space News*, June 20, 2016; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 308–309.

173. Space Daily, "China's First High Orbit Remote Sensing Satellite Put into Use," June 13, 2016.

174. Tomasz Nowakowski, "China Conducts Surprise Launch of Second Shijian-16 Satellite," *Spaceflight Insider*, June 30, 2016; Xinhua, "China Launches Yaogan-30 Remote Sensing Satellite," May 15, 2016.

175. Xinhua, "China Launches 23rd Beidou Navigation Satellite," June 13, 2016.

176. Xinhua, "China to Launch 30 Beidou Navigation Satellites in Next 5 Years," May 19, 2016.

177. State Council Information Office of the People's Republic of China, *China's BeiDou Navigation Satellite System*, June 2016; U.S. Federal Aviation Administration, *GPS Presidential Policy*, October 21, 2015.

178. Stephen Chen, "Is China Militarising Space? Experts Say New Junk Collector Could Be Used as Anti-Satellite Weapon," *South China Morning Post* (Hong Kong), June 28, 2016.

179. BBC, "China Launches Quantum-Enabled Satellite Micius," August 16, 2016; Yu Dawei, "In China, Quantum Communications Comes of Age," *Caixin*, February 6, 2015; and Stephen Chen, "China to Launch Hack-Proof Quantum Communication Network in 2016," *South China Morning Post* (Hong Kong), November 4, 2014.

180. Peter B. de Selding, "Laos, with China's Aid, Enters Crowded Satellite Telecom Field," *Space News*, November 30, 2015.

181. U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 286–287.

182. Peter B. de Selding, "Laos, with China's Aid, Enters Crowded Satellite Telecom Field," *Space News*, November 30, 2015.

183. U.S. Department of Defense, *Annual Report to Congress: Military and Security Development's Involving the People's Republic of China 2016*, April 26, 2016, 26, 38.

184. U.S. Department of Defense, *Annual Report to Congress: Military and Security Development's Involving the People's Republic of China 2016*, April 26, 2016, 58; David S McDonough, "Unveiled: China's New Naval Base in the South China Sea," *National Interest*, March 20, 2015.

185. U.S. Department of Defense, *Annual Report to Congress: Military and Security Development's Involving the People's Republic of China 2016*, May 2016, 58; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Con-*

gress, November 2015, 347; and U.S. Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, April 2015, 19–20.

186. U.S. Senate Armed Services Committee, *Hearing on Worldwide Threats*, testimony of Vincent R. Stewart, February 9, 2016.

187. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 26; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2015*, April 7, 2015, 9; and U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, April 24, 2014, 8.

188. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 26; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 347; U.S. Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, April 2015, 20; and U.S. Senate Armed Services Committee, *Hearing on U.S. Pacific Command and U.S. Forces Korea*, written testimony of Samuel J. Locklear III, April 16, 2015.

189. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 59.

190. Jeffrey Lewis, "China's Nuclear Idiosyncrasies and Their Challenges," *IFRI Security Studies Center*, November–December 2013, 10; Mark A. Stokes, "China's Nuclear Warhead Storage and Handling System," *Project 2049 Institute*, March 12, 2010, 2.

191. U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 20; U.S.-China Economic and Security Review Commission, *Hearing on China's Offensive Missile Forces*, written testimony of James Acton, April 1, 2015.

192. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 58; Michael S. Chase and Arthur Chan, "China's Evolving Strategic Deterrence Concepts and Capabilities," *Washington Quarterly*, 39: 1 (2016): 118.

193. Kevin McCauley, "Incomplete Transformation: PLA Joint Training and Warfighting Capabilities," *Jamestown Foundation*, March 6, 2015; Ji Yuan and Guo Chongde, "47th Group Army Brigade Focuses on Shortcomings in Combat Power Development: Focus on Problem Solving Hones Unit's True Fighting Ability," *PLA Daily*, October 23, 2014.

194. U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 246; Kevin McCauley, "Incomplete Transformation: PLA Joint Training and Warfighting Capabilities," *Jamestown Foundation*, March 6, 2015; and Ji Yuan and Guo Chongde, "47th Group Army Brigade Focuses on Shortcomings in Combat Power Development: Focus on Problem Solving Hones Unit's True Fighting Ability," *PLA Daily*, October 23, 2014.

195. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; Wanda Ayuso and Lonnie Henley, "Aspiring to Jointness: PLA Training, Exercises, and Doctrine, 2008–2012," in Roy Kamphausen, David Lai, and Travis Tanner, *Assessing the People's Liberation Army in the Hu Jintao Era*, Army War College Strategic Studies Institute, April 2014, 174.

196. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

197. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

198. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

199. Wanda Ayuso and Lonnie Henley, "Aspiring to Jointness: PLA Training, Exercises, and Doctrine, 2008–2012," in Roy Kamphausen, David Lai, and Travis Tanner, *Assessing the People's Liberation Army in the Hu Jintao Era*, Army War College Strategic Studies Institute, April 2014, 174.

200. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2010*, August 2010, 4.

201. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

202. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; U.S. Department of Defense, *Annual Report to Congress: Military and Security Development's Involving the People's Republic of China 2009*, October 2009, 15.

203. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

204. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 4.

205. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 4; U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

206. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; Dennis J. Blasko, "PLA Exercises March toward Trans-Regional Joint Training," *Jamestown Foundation*, November 5, 2010.

207. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; Marcelyn L. Thompson, "PLA Observations of U.S. Contingency Planning: What Has It Learned?" in Andrew Scobell et al., *The People's Liberation Army and Contingency Planning in China*, National Defense University Press, 2015, 43; Kevin N. McCauley (PLA Military Researcher), interview with Commission staff, November 30, 2015; and U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 246.

208. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; Zhu Da and Hu Chunlei, "The PLA Army Trans-Regional Base Training Moves Toward Normalization—the 'Stride-2014 Sanjie' Confrontation Exercise Begins," *PLA Daily*, September 9, 2014; and Ji Yuan and Guo Chongde, "47th Group Army Brigade Focuses on Shortcomings in Combat Power Development: Focus on Problem Solving Hones Unit's True Fighting Ability," *PLA Daily*, October 23, 2014.

209. Li Qinghua and Wang Ting, "Stride-2016 Zhurihe' Exercise Series Begins," *Xinhua*, July 15, 2016; Zhang Jie and Shao Min, "The Curtain Goes Up on the 'Stride-2016 Zhurihe' Real-Troop Confrontation Exercise Series; Five Elite Brigades Under the Army Commands of the Five Major Theater Commands Will Take Turns Marching to the Northern Desert To Fight Against the Professional 'Blue Force,'" *PLA Daily*, July 16, 2016; and Wang Jiayin, "Stride 2016-Zhurihe A' Exercise Enters Position Attack Phase," *China Military Online*, July 20, 2016.

210. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

211. *Jiefangjun Bao Online*, "PLA Air Force Sets up First Professional Blue Army to Boost Combat Power," July 6, 2015; Xu Yeqing and Wang Qinghou, "Navy Conducts Live Opposing-Forces Exercise in Yellow Sea and its Airspace," *PLA Daily*, July 3, 2015.

212. Gao Wu and Wang Hu, "During the 'Firepower-2016' Exercise, Critical Scenarios Occur Continually in Air Defense Brigades' Confrontation Drills; With Scenarios Being Improvised, Training Is Drawn Closer to Actual Operations," *PLA Daily*, July 18, 2016; Wu Kaibo and Qian Xiaohu, "Curtain Opens on Exercise 'Firepower-2016 Qingtongxia,'" *PLA Daily*, July 12, 2016.

213. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; Dennis J. Blasko, "PLA Exercises March toward Trans-Regional Joint Training," *Jamestown Foundation*, November 5, 2010; and Dennis J. Blasko, "Clarity of Intentions People's Liberation Army Trans-regional Exercises to Defend China's Borders," in Roy Kamphausen, David Lai, and Travis Tanner, *Learning by Doing: The PLA Trains at Home and Abroad*, National Defense University Press, 2012, 189.

214. Ouyang Hao, Li Yun, and Wang Yugen, "Military Forces Involved in the 'Mission Action-2013A' Exercise Maneuvered Over Thousands of Kilometers to Stage Attacks; the Campaign Cluster Effected a New Leap in Carrying Out Long-range Three-dimensional Power Projection," *PLA Daily*, September 16, 2013; Wang

Yushen, "PLA Will Carry Out 'Mission Action-2013' Exercise," Xinhua, September 9, 2013.

215. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

216. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 246.

217. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Mark R. Cozad, January 21, 2016.

218. Kevin McCauley, "Incomplete Transformation: PLA Joint Training and Warfighting Capabilities," *Jamestown Foundation*, March 6, 2015.

219. Kevin McCauley, "Incomplete Transformation: PLA Joint Training and Warfighting Capabilities," *Jamestown Foundation*, March 6, 2015.

220. U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 247.

221. State Council Information Office of the People's Republic of China, *China's Military Strategy*, May 2015.

222. Reuters, "China Says Starts Construction of Djibouti Military Base," February 25, 2016; Xinhua, "China Building Military Logistical Facilities in Djibouti," February 25, 2016.

223. China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Hong Lei's Regular Press Conference on November 26, 2015*, November 26, 2015.

224. Zhang Penghui et al., "Djibouti Welcomes China's Military Presence," China Military Online, August 8, 2016; Zhang Junshe, "Voice: China's Logistics Facilities in Djibouti Not a Military Base," China Military Online, March 9, 2016; Mandip Singh, "Port de Djibouti: China's First Permanent Naval Base in the Indian Ocean," *Institute for Defence Studies and Analyses* (India), February 22, 2016; Reuters, "China Military in Talks for Logistics 'Facilities' in Djibouti," November 26, 2015; and U.S.-China Economic and Security Review Commission, *Hearing on China and the Middle East*, written testimony of Andrew Erickson, June 6, 2013.

225. Katrina Manson, "China Military to Set up First Overseas Base in Horn of Africa," *Financial Times*, March 31, 2016.

226. Jane Perlez and Chris Buckley, "China Retools Its Military with a First Overseas Outpost in Djibouti," *New York Times*, November 26, 2015; Gabe Collins and Andrew Erickson, "Djibouti Likely to Become China's First Indian Ocean Outpost," *China Signpost*, July 11, 2015.

227. Jane Perlez and Chris Buckley, "China Retools Its Military with a First Overseas Outpost in Djibouti," *New York Times*, November 26, 2015; European Commission, "European Union, Trade in Goods with China"; and Minghao Zhao, "China's Arab March," *Project Syndicate*, June 18, 2014.

228. U.S. Energy Information Administration, *China*, May 14, 2015.

229. Katrina Manson, "China Military to Set up First Overseas Base in Horn of Africa," *Financial Times*, March 31, 2016; Andrea Ghiselli, "China's First Overseas Base in Djibouti, an Enabler of Its Middle East Policy," *Jamestown Foundation*, January 25, 2016; and Con Coughlin, "China Deal Threatens Only American Military Base in Africa," *Telegraph*, July 21, 2015.

230. Con Coughlin, "China Deal Threatens Only American Military Base in Africa," *Telegraph*, July 21, 2015; Gabe Collins and Andrew Erickson, "Djibouti Likely to Become China's First Indian Ocean Outpost," *China Signpost*, July 11, 2015; and Craig Whitlock, "Remote U.S. Base at Core of Secret Operations," *Washington Post*, October 25, 2012.

231. China Military Online, "24th Chinese Naval Escort Taskforce Leaves for Mission," August 11, 2016.

232. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 66.

233. Xinhua, "Chinese Naval Vessels Evacuate Hundreds from War-Torn Yemen," April 8, 2015.

234. Khushbu Shah and Jason Hanna, "Chinese Ship Arrives to Help in Removal of Syrian Chemical Weapons Materials," CNN, January 8, 2014.

235. U.S.-China Economic and Security Review Commission, *Hearing on China-South Asia Relations*, written testimony of David Brewster, March 10, 2016.

236. Reuters, "China Takes First Step in \$1 Billion Pledge to U.N. to Fund Peace, Development," May 6, 2016; Michael Martina and David Brunnstrom, "China's Xi Says to Commit 8,000 Troops for UN Peacekeeping Force," Reuters, September 28, 2015; and Xi Jinping, *Working Together to Forge a New Partnership of Win-Win Co-*

*operation and Create a Community of Shared Future for Mankind* (General Debate of the 70th Session of the UN General Assembly, New York, NY, September 28, 2015).

237. UN Peacekeeping, *Troop and Police Contributors*. <http://www.un.org/en/peacekeeping/resources/statistics/contributors.shtml>.

238. Gary Li, "Xi's Blue Helmets: Chinese Peacekeeping in Context," *Jamestown Foundation*, November 2, 2015; Jane Perlez, "China Surprises U.N. With \$100 Million and Thousands of Troops for Peacekeeping," *New York Times*, September 28, 2015; Jeremy Page, "China to Create \$1 Billion Fund to Support U.N.," *Wall Street Journal*, September 28, 2015; and Emma Campbell-Mohn, "China: The World's New Peacekeeper?" *Diplomat* (Japan), April 8, 2015.

239. Gary Li, "Xi's Blue Helmets: Chinese Peacekeeping in Context," *Jamestown Foundation*, November 2, 2015.

240. Michael Martina and David Brunnstrom, "China's Xi Says to Commit 8,000 Troops for UN Peacekeeping Force," Reuters, September 28, 2015.

241. Karen Allen, "What China Hopes to Achieve with First Peacekeeping Mission," BBC, December 2, 2015.

242. Karen Allen, "What China Hopes to Achieve with First Peacekeeping Mission," BBC, December 2, 2015; Yuwen Wu, "China's Oil Fears over South Sudan Fighting," BBC, January 8, 2014.

243. Somini Sengupta, "For the U.S. and China, a Test of Diplomacy on South Sudan," *New York Times*, March 2, 2015; Colum Lynch, "U.N. Peacekeepers to Protect China's Oil Interests in South Sudan," *Foreign Policy*, June 16, 2014.

244. Josh Chin, "Violence in South Sudan Kills Two Chinese U.N. Peacekeepers," *Wall Street Journal*, July 11, 2016.

245. UN Peacekeeping, *UN Mission's Summary Detailed by Country*, August 31, 2016.

246. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 57, 68.

247. U.S.-China Economic and Security Review Commission, *Hearing on Developments in China's Military Force Projection and Expeditionary Capabilities*, written testimony of Oriana Skylar Mastro, January 21, 2016.

248. Xinhua, "Maritime Search, Rescue Drill Held in South China Sea," May 19, 2015; Xu Jingxi, "Largest Ever Search and Rescue Drill to Take Place on Pearl River," *China Daily*, May 18, 2016.

249. Li Xiaokun and Liu Xiaoli, "Rescue Vessel Eyed for the Nansha Islands," *China Daily*, May 23, 2016.

250. Marnie O'Neill, "Mysterious Australian Team to Work with China in New Search for MH370," *News.au.com*, May 24, 2016; Li Xiaokun and Liu Xiaoli, "Rescue Vessel Eyed for the Nansha Islands," *China Daily*, May 23, 2016; Darren Chester, "Chinese Vessel Dong Hai Jiu 101 Prepares to Resume Search," *Australian Ministry for Infrastructure and Transport*, April 8, 2016; and Warren Truss, "Chinese Vessel Joining Search for MH 370," *Australian Ministry for Infrastructure and Transport*, January 29, 2016.

251. BBC, "Missing Malaysia Plane: The Passengers on Board MH370," March 25, 2014.

252. Kevin Knodell, "U.S. and Chinese Troops Join Forces in Humanitarian Training Exercises on U.S. Mainland," *Humanosphere*, December 3, 2015.

253. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 70.

254. Maxim Shrestha, "Nepal Earthquake One Year On: Building a More Effective Relief Effort—Analysis," *Eurasia Review*, April 26, 2016; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 70.

255. Victor Robert Lee, "China Builds Space-Monitoring Base in the Americas," *Diplomat* (Japan), May 24, 2016; Richard D. Fisher Jr., "Analysis: China Looks to Break into Latin American Market via Argentina," *IHS Jane's*, February 11, 2015.

256. Uki Goñi, "Argentinian Congress Approves Deal with China on Satellite Space Station," *Guardian*, February 26, 2015; Nuclear Threat Initiative, "China Satellite Launch and Tracking Control General (CLTC)," January 31, 2013.

257. Kevin Pollpeter (Deputy Director, Study of Innovation and Technology in China Project, University of California Institute on Global Conflict and Cooperation), interview with Commission staff, March 9, 2014.

258. Victor Robert Lee, "China Builds Space-Monitoring Base in the Americas," *Diplomat* (Japan), May 24, 2016; Jordan Wilson, "China's Military Agreements with Argentina: A Potential New Phase in China-Latin America Defense Relations," *U.S.-China Economic and Security Review Commission*, November 5, 2015; and Uki Goñi,

“Argentinian Congress Approves Deal with China on Satellite Space Station,” *Guardian*, February 26, 2015.

259. Associated Press, “China Gets Approval to Build Argentina Satellite Tracking Station for Moon Missions,” February 26, 2015; Uki Goñi, “Argentinian Congress Approves Deal with China on Satellite Space Station,” *Guardian*, February 26, 2015.

260. U.S. Department of Defense *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 105–106.

261. U.S. Department of Defense *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 11–12.

262. Kristien Bergerson, “China’s Efforts to Counter U.S. Forward Presence in the Asia Pacific,” *U.S.-China Economic and Security Review Commission*, March 15, 2016, 6.

263. TASS (Russia), “Russia, China Launch First Computer-Enabled Anti-Missile Exercises,” May 26, 2016; Ankit Panda, “A First: China and Pakistan Conclude Naval Exercise in East China Sea,” *Diplomat* (Japan), January 4, 2016.

264. Yuan Can, “J-11A Fighters from China Attend Joint Drill in Thailand,” *People’s Daily* (China), November 20, 2015.

265. Minnie Chan, “PLA Air Force Joins Thai Military for Joint Drills,” *South China Morning Post* (Hong Kong), November 12, 2015; Huang Zijuan, “First Ever Joint Fighter Training, Expert: China’s Air Force has an Increasingly International Style,” *People’s Daily* (China), November 17, 2015. Staff translation.

266. Ankit Panda, “A First: China and Pakistan Conclude Naval Exercise in East China Sea,” *Diplomat* (Japan), January 4, 2016.

267. *Eastday*, “Indian and Chinese Border Guards Hold First Joint Exercise, 30 People Participated on Each Side,” February 8, 2016. Staff translation; *Hindu* (India), “India, China Hold First Joint Tactical Drill on Border,” February 8, 2016.

268. Zhao Lei, “Drill Simulates Joint Evacuation,” *China Daily*, March 25, 2016; China Military Online, “‘Joint Evacuation-2016’ China-U.K. Joint NEO Tabletop Exercise Held in China,” March 24, 2016.

269. Phoenix (Hong Kong), “Shaheed 5 Military Exercise Begins in Pakistan, PLA’s J-11 will Face Off Against Pakistan’s Xiaolong,” April 11, 2016. Staff translation.

270. United States Navy, *Multilateral Naval Exercise Komodo Kicks Off in Indonesia*, April 12, 2016; China Military Online, “Chinese Naval Ships Arrive in Indonesia for Komodo 2016 Joint Exercise,” April 12, 2016.

271. China Military Online, “ADMM-Plus Counter Terrorism Joint Exercise Kicks off in Brunei,” May 4, 2016; United States Navy, *ADMM-Plus Maritime Security, Counter Terrorism FTX 2016 Underway in Brunei*, May 3, 2016; and ASEAN Defense Ministers’ Meeting, *Current Calendar Year*, May 1, 2016.

272. Patcharapol Panrak, “Thai, Chinese Navies Join for ‘Blue Strike,’” *Pattaya Mail* (Thailand), June 3, 2016; China Military Online, “Chinese Marines Arrive in Thailand for Joint Training,” May 20, 2016.

273. Interfax (Russia), “Russian, Chinese Military Hold Drills on Defense from Missile Strikes,” May 28, 2016; TASS (Russia), “Russia, China Launch First Computer-Enabled Anti-Missile Exercises,” May 26, 2016.

274. China Military Online, “China Finishes Sea Phase of RIMPAC 2016,” August 5, 2016; Kirk Spitzer, “U.S. and China Warships to Participate in Massive Pacific War Games,” *USA Today*, June 28, 2016; and Ankit Panda, “With 5 Ships and 1,200 Personnel, China Expands RIMPAC 2016 Naval Delegation,” *Diplomat* (Japan), June 18, 2016.

275. Wang Xuhui and Niu Tie, “China’s Commander of ‘Peace Mission-2016’ Anti-Terrorism Exercise Assesses the Joint Exercise’s New Highlights,” *PLA Daily*, September 20, 2016. Staff translation; China Military Online, “SCO Peace Mission-2016 Kicks Off in Kyrgyzstan,” September 18, 2016.

276. Sam LaGrone, “China, Russia Kick Off Joint South China Sea Naval Exercise; Includes ‘Island Seizing’ Drill,” USNI News, September 12, 2016; Christopher Bodeen, “China, Russia Launch South China Sea Naval War Games,” Associated Press, September 12, 2016.

277. Ankit Panda, “With 5 Ships and 1,200 Personnel, China Expands RIMPAC 2016 Naval Delegation,” *Diplomat* (Japan), June 18, 2016.

278. Sam LaGrone, “Chinese Warships Now Training with Ships from U.S. Carrier Strike Group,” USNI News, June 28, 2016; Commander Naval Surface Force of U.S. Pacific Fleet, *International Ships Sail to Hawaii for Rim of the Pacific 2016*, June 24, 2016.

279. National Defense Authorization Act for Fiscal Year 2000 § 1201, Pub. L. No. 106-65, 113 STAT. 512 (1999), codified at 10 U.S.C. § 1201 (2000).
280. China Military Online, "Chinese Warships Return after RIMPAC 2016 Exercise," August 8, 2016; Kirk Spitzer, "U.S. and China Warships to Participate in Massive Pacific War Games," *USA Today*, June 28, 2016.
281. Abhijit Singh, "Why Russia and China's Combat Drills in the South China Sea Matter," *National Interest*, September 16, 2016; Sam LaGrone, "China, Russia Kick Off Joint South China Sea Naval Exercise; Includes 'Island Seizing' Drill," USNI News, September 12, 2016.
282. Jeffrey Lin and P.W. Singer, "The Chinese-Russian South China Sea Naval Drill: What Happened and Why did it Matter?" *Popular Science*, September 21, 2016.
283. Jeffrey Lin and P.W. Singer, "The Chinese-Russian South China Sea Naval Drill: What Happened and Why did it Matter?" *Popular Science*, September 21, 2016; Jane's Intelligence Review, "Udaloy-class Destroyers," January 6, 1989.
284. Christopher Bodeen, "China, Russia Launch South China Sea Naval War Games," Associated Press, September 12, 2016.
285. Xinhua, "China-Russia Maritime Military Drill Opens a New Important Subject: A New Type of Chinese Submarine Appears on the Stage," September 19, 2016. Staff translation; Sam LaGrone, "China, Russia Kick Off Joint South China Sea Naval Exercise; Includes 'Island Seizing' Drill," USNI News, September 12, 2016.
286. Sam LaGrone, "China, Russia Kick Off Joint South China Sea Naval Exercise; Includes 'Island Seizing' Drill," USNI News, September 12, 2016; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 253.
287. Xinhua, "China Opposes Outside Interference in South China Sea Issue: Vice FM," September 8, 2016; Ankit Panda, "China's 'Red Line' Warning to Japan on South China Sea FONOPs Is Here to Stay," *Diplomat* (Japan), August 29, 2016.
288. Stockholm International Peace Research Institute, *SIPRI Arms Transfers Database*. <https://www.sipri.org/databases/armstransfers>.
289. Aude Fleurant et al., "Trends in International Arms Transfers: 2015," *Stockholm International Peace Research Institute*, February 2016, 1-3.
290. Aude Fleurant et al., "Trends in International Arms Transfers: 2015," *Stockholm International Peace Research Institute*, February 2016, 3.
291. Stockholm International Peace Research Institute, *SIPRI Arms Transfers Database*. <https://www.sipri.org/databases/armstransfers>.
292. Joseph Dempsey, "China's Increasing Inroads into the African Defence Market," *International Institute for Strategic Studies*, February 17, 2016.
293. Stockholm International Peace Research Institute, *SIPRI Arms Transfers Database*; <https://www.sipri.org/databases/armstransfers>; Aude Fleurant et al., "Trends in International Arms Transfers: 2015," *Stockholm International Peace Research Institute*, February 2016, 3.
294. U.S. Department of Defense, *Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2014*, April 24, 2014, 51.
295. Oscar Nkala, "Nigeria to Acquire Super Mushshak Aircraft from Pakistan," *Defense News*, July 1, 2016; Jeremy Binnie, "Nigeria to Become First JF-17 Export Operator," *IHS Jane's Defence Weekly*, January 6, 2016.
296. Ankit Panda, "Revealed: Why Sri Lanka Backed off the Sino-Pakistani JF-17 Thunder," *Diplomat* (Japan), January 11, 2016.
297. Associated Press, "Thai Navy Seeks Approval to Buy First Submarines in 65 Years," July 1, 2016; Michael Green et al., "Asia-Pacific Rebalance 2025: Capabilities, Presence, and Partnerships," *Center for Strategic International Studies*, January 2016, 80-81; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 254-255; and Adam Taylor, "If Thailand Is a Coup, Why Wasn't Egypt?" *Washington Post*, May 22, 2014.
298. Yuan Can, "Weapons Developed by China Appear in Military Parade in Pakistan," *People's Daily* (China), March 24, 2016; Usman Ansari, "Chinese Helicopter Debuts at Pakistani Parade," *Defense News*, March 23, 2016.
299. Franz-Stefan Gady, "China to Supply Pakistan with 8 New Stealth Attack Submarines by 2028," *Diplomat* (Japan), August 30, 2016.
300. Christopher Colley (Instructor, School of International Studies, Renmin University of China), meeting with Commission, June 24, 2016.
301. Eric Heginbotham et al., "The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power 1996-2017," *RAND Corporation*, 2015, 99, 126; Jeffrey Lin and P.W. Singer, "The Dragon Muscles In: Growing Numbers of Victories in Chinese Arms Exports," *Popular Science*, June 9, 2016.

302. Jeffrey Lin and P.W. Singer, "The Dragon Muscles In: Growing Numbers of Victories in Chinese Arms Exports," *Popular Science*, June 9, 2016.
303. Jeffrey Lin and P.W. Singer, "The Dragon Muscles In: Growing Numbers of Victories in Chinese Arms Exports," *Popular Science*, June 9, 2016; State-Owned Assets Supervision and Administration Commission of the State Council (China), *Zhuhai Airshow: Advantages of Prominent Unmanned Aerial Vehicles*, November 19, 2014.
304. Kimberly Hsu, "China's Military Unmanned Aerial Vehicle Industry," *U.S.-China Economic and Security Review Commission*, June 13, 2013, 9–10.
305. Richard A. Bitzinger, "China Is Suddenly a Leading Exporter of Armed Drones," *World Politics Review*, January 18, 2016; U.S. Air Force, *MQ-1B Predator*, September 13, 2015.
306. W.J. Hennigan, "A Fast Growing Club: Countries that Use Drones for Killing by Remote Control," *Los Angeles Times*, February 22, 2016; Clay Dillow, "All of These Countries Now Have Armed Drones," *Fortune*, February 12, 2016; Kelsey D. Atherton, "Watch Nigeria's First Confirmed Drone Strike—Against Boko Haram," *Popular Science*, February 3, 2016; Richard A. Bitzinger, "China Is Suddenly a Leading Exporter of Armed Drones," *World Politics Review*, January 18, 2016; and Adam Rawnsley, "Meet China's Killer Drones," *Foreign Policy*, January 14, 2016.
307. Clay Dillow, "All of These Countries Now Have Armed Drones," *Fortune*, February 12, 2016.
308. Anthony Davis, "Myanmar Deployment of Combat-Capable UAVs in Counter-Insurgency Role Confirmed," *IHS Jane's Defense Weekly*, June 7, 2016; Sarah Kreps, "China Swooping in on Military Drone Market," CNN, April 1, 2016; Richard A. Bitzinger, "China Is Suddenly a Leading Exporter of Armed Drones," *World Politics Review*, January 18, 2016; and Kyle Mizokami, "For the First Time, Chinese UAVs Are Flying and Fighting in the Middle East," *Popular Mechanics*, December 22, 2015.
309. Adam Rawnsley, "Meet China's Killer Drones," *Foreign Policy*, January 14, 2016.
310. Kimberly Hsu, "China's Military Unmanned Aerial Vehicle Industry," *U.S.-China Economic and Security Review Commission*, June 13, 2013, 11.
311. Richard A. Bitzinger, "China Is Suddenly a Leading Exporter of Armed Drones," *World Politics Review*, January 18, 2016; U.S. Air Force, *MQ-9 Reaper*, September 23, 2015.
312. Elsa Kania and Kenneth Allen, "The Human and Organizational Dimensions of the PLA's Unmanned Aerial Vehicle Systems," *Jamestown Foundation*, May 11, 2016; Kyle Mizokami, "For the First Time, Chinese UAVs Are Flying and Fighting in the Middle East," *Popular Mechanics*, December 22, 2015; Franz-Stefan Gady, "Revealed: Chinese Killer Drones in Iraq," *Diplomat* (Japan), October 16, 2015; and Jeremy Binnie, "Iraq Unveils CH-4 UAVs," *IHS Jane's Defence Weekly*, October 15, 2015, 1–2.
313. Jeffrey Lin and P.W. Singer, "Chinese Drones Make Key Breakthrough. Firing on Command by Satellite," *Popular Science*, June 8, 2016; *People's Daily* (China), "Domestic-Made CH-4 UAV Achieves Improved Long-Distance Precision Strike," May 31, 2016. Staff translation.
314. Xinhua, "The CH-4: The AK-47 of Drones," April 9, 2015.
315. Carol Morello and Karen DeYoung, "International Sanctions Against Iran Lifted," *Washington Post*, January 16, 2016.
316. Radio Free Europe/Radio Liberty, "Iran, China Agree to \$600 Billion Trade Deal After Sanctions Lifted," January 23, 2016; Office of the President of Iran, *A New Chapter in Tehran-Beijing Ties Started; 25-Year Comprehensive, Executive Document Composed Soon*, January 23, 2016.
317. Joel Wuthnow, "Posing Problems Without an Alliance: China-Iran Relations after the Nuclear Deal," *National Defense University*, February 2016, 1.
318. Chinese scholars, meeting with Commission, Beijing, China, June 24, 2016; Roncevert Ganan Almond, "China and the Iran Nuclear Deal," *Diplomat* (Japan), March 8, 2016; Harold Pachios, "Let's Look at China's Role in the Iran Nuclear Deal," *Congress Blog (The Hill)*, August 21, 2015; and Michael Singh, "The Sino-Iranian Tango: Why the Nuclear Deal is Good for China," *Foreign Affairs*, July 21, 2015.
319. Harold Pachios, "Let's Look at China's Role in the Iran Nuclear Deal," *Congress Blog (The Hill)*, August 21, 2015; Xinhua, *China to Play a Key Role in Modification of Iran's Arak Heavy Water Reactor: Chinese FM*, July 15, 2015.
320. Thomas J. Christensen, *The China Challenge: Shaping the Choices of a Rising Power*, W.W. Norton and Company, 2015, 132–133.
321. Michael Singh, "The Sino-Iranian Tango: Why the Nuclear Deal is Good for China," *Foreign Affairs*, July 21, 2015.

322. U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, 300–301.
323. Roncevert Ganan Almond, “China and the Iran Nuclear Deal,” *Diplomat* (Japan), March 8, 2016.
324. Roncevert Ganan Almond, “China and the Iran Nuclear Deal,” *Diplomat* (Japan), March 8, 2016; Gary Samore, ed., “The Iran Nuclear Deal: A Definitive Guide,” *Belfer Center for Science and International Affairs*, August 2015, 53–59; Eric B. Lorber and Peter Feaver, “Do the Iran Deal’s ‘Snapback’ Sanctions Have Teeth?” *Foreign Policy*, July 21, 2015; and Michele Keleman, “A Look at How Sanctions Would ‘Snap Back’ if Iran Violates Nuke Deal,” *NPR*, July 20, 2015.
325. Joel Wuthnow, “Posing Problems Without an Alliance: China-Iran Relations after the Nuclear Deal,” *National Defense University*, February 2016, 1.
326. Michael Singh, “The Sino-Iranian Tango: Why the Nuclear Deal is Good for China,” *Foreign Affairs*, July 21, 2015.
327. Joel Wuthnow, “Posing Problems Without an Alliance: China-Iran Relations after the Nuclear Deal,” *National Defense University*, February 2016, 7–8.
328. Roncevert Ganan Almond, “China and the Iran Nuclear Deal,” *Diplomat* (Japan), March 8, 2016.
329. U.S. Department of State, *U.S.-China Strategic & Economic Dialogue Outcomes of the Strategic Track*, June 7, 2016.
330. Lingling Wei and Felicia Schwartz, “U.S., China Find Common Ground Elusive at High-Level Talks,” *Wall Street Journal*, June 6, 2016; Tom Mitchell and Yuan Yang, “Xi Jinping Warns on Limits to Diplomacy as China-US Talks Begin,” *Financial Times*, June 6, 2016; and Chris Buckley and Jane Perlez, “U.S. to Press China to Curb Industrial Output,” *New York Times*, June 5, 2016.
331. Tom Mitchell and Yuan Yang, “Xi Jinping Warns on Limits to Diplomacy as China-US Talks Begin,” *Financial Times*, June 6, 2016.
332. Robert Burns, “Ash Carter Proposes Asia-Pacific ‘Security Network,’” *Associated Press*, June 4, 2016; Jamie Crawford, “Pentagon: ‘Unsafe’ Intercept over South China Sea,” *CNN*, May 19, 2016.
333. White House, *U.S.-China Joint Statement on Nuclear Security Cooperation*, March 31, 2016; Kathleen McLaughlin, “U.S. and China Cooperate to Thwart Nuclear Smuggling,” *Science*, March 17, 2016.
334. White House, *U.S.-China Joint Statement on Nuclear Security Cooperation*, March 31, 2016; Kathleen McLaughlin, “U.S. and China Cooperate to Thwart Nuclear Smuggling,” *Science*, March 17, 2016.
335. White House, *U.S.-China Joint Statement on Nuclear Security Cooperation*, March 31, 2016.
336. Bonnie Glaser, “China’s Strident Words on South China Sea Sovereignty Are Anything but Reassuring to a Wary Region,” *South China Morning Post* (Hong Kong), June 8, 2016; Karen Parrish, “Carter, Admirals Take Questions on China at Shangri-La Dialogue,” *U.S. Department of Defense*, June 4, 2016; and Wendell Minnick, “Carter Warns of Chinese ‘Great Wall of Self-isolation,’” *Defense News*, June 4, 2016.
337. Bonnie Glaser, “China’s Strident Words on South China Sea Sovereignty are Anything but Reassuring to a Wary Region,” *South China Morning Post* (Hong Kong), June 8, 2016; Karen Parrish, “Carter, Admirals Take Questions on China at Shangri-La Dialogue,” *U.S. Department of Defense*, June 4, 2016; and Wendell Minnick, “Carter Warns of Chinese ‘Great Wall of Self-isolation,’” *Defense News*, June 4, 2016.
338. Bonnie Glaser, “China’s Strident Words on South China Sea Sovereignty are Anything but Reassuring to a Wary Region,” *South China Morning Post* (Hong Kong), June 8, 2016.
339. James Crabtree, “China Doesn’t Care About What Some Dutch Court Thinks about the South China Sea,” *Foreign Policy*, June 8, 2016.
340. U.S. Department of Homeland Security, *Second U.S.-China Cybercrime and Related Issues High Level Joint Dialogue*, June 15, 2016; Tal Kopan, Kristen Holmes and Stephen Collinson, “U.S., China Say They Won’t Engage in Cybertheft,” *CNN*, September 25, 2015; and Ellen Nakashima and Steven Mufson, “U.S., China Vow not to Engage in Economic Cyberespionage,” *Washington Post*, September 25, 2015.
341. Department of Homeland Security, *Second U.S.-China Cybercrime and Related Issues High Level Joint Dialogue*, June 15, 2016.
342. Department of Homeland Security, *Second U.S.-China Cybercrime and Related Issues High Level Joint Dialogue*, June 15, 2016.
343. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*, April 26, 2016, 100.

344. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 101.
345. David Larter, "This U.S. Navy Carrier Was Set to Visit Hong Kong. Then Beijing Pulled the Welcome Mat," *Navy Times*, April 29, 2016; David Larter, "Chinese State Media Blast U.S. Navy for 'Menacing' China's Sea Claims," *Navy Times*, May 5, 2016.
346. Sam LaGrone, "First U.S. Destroyer Visits China Since South China Sea Ruling," USNI News, August 8, 2016.
347. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 98.
348. Christopher Bodeen, "Top U.S. Admiral Says China Exchanges Conditional on Safety," *Associated Press*, July 20, 2016; Sam LaGrone, "CNO Richardson Heading to China," USNI News, July 14, 2014.
349. Sam LaGrone, "First U.S. Destroyer Visits China Since South China Sea Ruling," USNI News, August 8, 2016.
350. Sam LaGrone, "Head of Chinese Navy Defends South China Sea Moves in Teleconference with CNO Richardson," *U.S. Naval Institute*, January 20, 2016; Chief of Naval Operations Public Affairs, "U.S. and Chinese Heads of Navy Hold Video Call," January 19, 2016.
351. U.S. Department of Defense, *DPCT Draft Press Release*, January 22, 2016.
352. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, April 26, 2016, 99.
353. Korea Herald, "S. Korea, U.S. to Deploy THAAD System Here by End-2017," July 11, 2016; Bruce W. Bennett, "THAAD's Effect on South Korea's Neighbors," *RAND Corporation*, April 5, 2016; KJ Kwon and Paula Hancocks, "South Korea, U.S. to Discuss THAAD Missile Defense Plan," CNN, February 7, 2016.
354. China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Geng Shuang's Regular Press Conference on September 30, 2016*, September 30, 2016.
355. Li Bao, "Top U.S. Official: Washington Seeking THAAD Dialogue with Beijing," *Voice of America*, May 5, 2016; U.S. Department of State, *Remarks at Royal United Services Institute (RUSI) Missile Defense Conference*, April 12, 2016.
356. China's Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Hong Lei's Regular Press Conference on March 30, 2016*, March 30, 2016; China's Ministry of Foreign Affairs, *Zhang Yesui: China Opposes Deployment of THAAD Missile Defense System in ROK*, February 16, 2016.
357. Bruce W. Bennett, "THAAD's Effect on South Korea's Neighbors," *RAND Corporation*, April 5, 2016.
358. Gordon Lubold, "Top U.S. Army General Seeks to Assure China on Missile Defense System," *Wall Street Journal*, August 16, 2016.
359. Michael Martina, Greg Torode, and Ben Blanchard, "China Scrambles Fighters as U.S. Sails Warship Near Chinese-Claimed Reef," *Reuters*, May 11, 2016; Xinhua, "China Urges U.S. not to Undermine Mutual Trust," January 30, 2016.
360. Government of the People's Republic of China, *Statement of the Government of the People's Republic of China on China's Territorial Sovereignty and Maritime Rights and Interests in the South China Sea*, July 12, 2016; China's Ministry of Foreign Affairs, *Statement of the Ministry of Foreign Affairs of the People's Republic of China on the Award of 12 July 2016 of the Arbitral Tribunal in the South China Sea Arbitration Established at the Request of the Republic of the Philippines*, July 12, 2016.
361. U.S. Department of State, *Decision in the Philippines-China Arbitration*, July 12, 2016.
362. Christopher Bodeen, "Top U.S. Admiral Says China Exchanges Conditional on Safety," *Associated Press*, July 20, 2016.
363. Chun Han Wong, "China to Continue Construction on Disputed Islands," *Wall Street Journal*, July 18, 2016; Xinhua, "PLA Navy Chief Urges China-U.S. Cooperation in Handling South China Sea," July 18, 2016.
364. Michael Forsythe, "China Protests Sale of U.S. Arms to Taiwan," *New York Times*, December 17, 2015.