

Strategic Forum

National Defense University

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Key Points

- The Chinese military presence in the "far seas" beyond Asia is growing and will expand further as the PLA moves toward its 2035 goal of fielding a fully modern military.
- Existing overseas activities are mostly conducted by a single service and have not involved combat.
- Future scenarios for overseas joint operations include larger-scale military operations other than war, extended-range counterintervention, and overseas combat.
- Conducting more complex overseas operations would require substantial improvements in PLA capabilities, including a better developed global command structure, increases in sealift and airlift assets, a stronger overseas joint logistics system, and more effective joint commanders.
- Changes in the domestic or regional security environment or intensified U.S.-China competition could accelerate a transition toward greater emphasis on expeditionary operations, including higher-end combat scenarios.

PLA Overseas Operations in 2035: Inching Toward a Global Combat Capability

by Joel Wuthnow, Phillip C. Saunders, and Ian Burns McCaslin

ver the past decade, China's People's Liberation Army (PLA) has followed two general development trajectories. The primary focus has been on deterring adversaries and building the capability to fight high-intensity, short-duration wars around China's periphery—what the PLA often refers to as "informationized local wars." This has included acquisition of advanced combat capabilities, supported by progress in doctrine, training, logistics, and command and control (C2). A central theme has been strengthening the PLA's ability to conduct joint operations, thus correcting problems of ground force dominance and poor interservice cooperation. A secondary focus has been on nontraditional security operations, such as peacekeeping, maritime law enforcement, and humanitarian assistance/disaster relief (HA/DR). Such missions, usually involving only a single service, have been conducted within the region and farther from China's shores, reflecting the expansion of Chinese interests and the growing presence of Chinese citizens outside East Asia.

Looking ahead, these trajectories could begin to merge as the PLA emphasizes joint operations beyond East Asia. There are two reasons. First, the geographic focus of PLA combat missions could broaden as PLA power projection capabilities mature and state-based threats to perceived Chinese interests arise farther afield. The PLA Navy (PLAN) currently has the best ability to project and sustain power far from the Chinese mainland, but many of these overseas missions are inherently "joint." As one example, precision strikes jointly conducted by the navy, air force, and Rocket Force would give Beijing new options to deter and retaliate against foes in other regions. PLA joint operations may also challenge potential U.S. military interventions into East Asia by targeting U.S. forces at greater distances from China.

Second, protecting China's overseas interests may require coordination between multiple services and branches. Despite the PLA "going out" in different ways in recent years, none of its overseas operations and few of its overseas exercises have been "joint." The PLA's evacuation of noncombatants from Libya in 2011 succeeded because of a relatively permissive environment: naval ships and air force transport aircraft could use host country facilities and were not subjected to terrorist or insurgent attacks. More complex and contested operations, such as the U.S. military's rescue of American students during Operation Urgent Fury in Grenada in 1983, may require capabilities from multiple services and extensive joint coordination.¹ In the future, evacuating Chinese citizens during a major civil conflict could benefit from collaboration between PLA special operations forces (SOF), PLA Air Force strategic airlift assets, and

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marines in Djibouti or other overseas bases, as well as cooperation with host country military, law enforcement, and intelligence services.²

The PLA currently has only a limited capability to conduct complex joint operations in the far seas beyond China's periphery. (In this study, we use the term *far seas* to refer to any type of PLA operation beyond the second island chain and not just naval operations.) Unlike the U.S. military, which can mobilize and deploy fairly rapidly to respond to a range of contingencies around the world, the PLA remains largely a regional military power. Some of its key limitations include lack of a global combatant command system, limited strategic airlift and sealift, lack of a dense network of large overseas bases rooted in formal military alliances, and limited experience with foreign languages and cultures. Some of these deficiencies are already being addressed: China is expanding its inventory of long-range assets such as heavy transport aircraft and logistics ships that may support long-range deployments of aircraft carriers and other surface combatants; an initial overseas base has been opened in Djibouti, with more potentially to follow; and more PLA personnel are gaining overseas experience through antipiracy missions and other operations.

What types of joint operations might the PLA need to conduct beyond the first island chain by 2035? How would current PLA capabilities need to evolve to complete those missions? To address these questions, this study first examines current Chinese joint operations capabilities and then lays out three scenarios that could involve PLA forces from different services being employed in distant regions. Those scenarios include military operations other than war (MOOTW), extended-range counterintervention operations, and overseas combat operations. We then consider the types of progress that the PLA would need to make to conduct these operations, including in joint C2 structures; joint doctrine, training, and education; joint logistics; and combat capabilities critical to joint operations. The conclusion considers the variables that could determine whether the PLA is able to make these changes and argues that, while the PLA faces barriers to developing into a U.S.-style global military, it will be increasingly proficient in conducting joint operations far beyond China in less complex mission areas.

PLA Joint Operations in Context

Once preoccupied with land warfare against the superpowers, for the past three decades Chinese military strategy has emphasized joint operations in regional conflicts.³ A milestone came in 1993 with the release of a new military strategy that regarded joint operations as the main form of operations.⁴ A 2004 revision to that strategy introduced the concept of *integrated joint opera-tions*, signifying greater tactical and operational coordination between the services.⁵ To facilitate these operations, the PLA developed joint doctrine, expanded its air and maritime power projection capabilities while reducing the ground forces, provided new joint training and professional military education opportunities for servicemembers, developed new C2 platforms to link different units, and experimented with a joint logistics system.

Despite these changes, the geographic focus of PLA joint operations has remained on China's *near seas* (referring to the areas within the first island chain, including the Yellow, South, and East China seas and the Taiwan Strait; see figure 1). This partly reflected changes in China's security environment. In the late 1980s, a diminished Soviet threat allowed the PLA to concentrate on regional challenges under the rubric of "local wars" (*jubu zhanzheng*, 局部战争). Doctrinal innovations in the 1990s and 2000s retained the focus on local wars but required the PLA to operate under informationized (*xinxi hua*, 信息化) conditions.⁶ The key planning scenarios focused on cross-strait operations, piqued by the rise of the Taiwan independence movement and the 1995–1996 Taiwan Strait Crisis. This scenario required the PLA to be able to conduct joint operations such as conventional missile strikes from multiple platforms, a blockade, or an amphibious landing (or some combination thereof). Other scenarios requiring joint capabilities included conflicts over borders or natural resources with



Figure 1. First and Second Island Chains

Source: Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2012 (Washington, DC: Department of Defense, 2012), 40.

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opponents such as Japan and India, and a possible North Korea crisis.⁷

As part of the local wars construct, PLA joint operations concepts also considered the need to counter U.S. intervention in East Asia. This necessity was underscored by the 1990-1991 Gulf War, which demonstrated U.S. military prowess against second-tier militaries; the 1995-1996 Taiwan Strait Crisis, which involved the deployment of two U.S. aircraft carrier strike groups near Taiwan and highlighted PLA weaknesses in countering U.S. forces; and the 1999 accidental North Atlantic Treaty Organization (NATO) bombing of the Chinese Embassy in Belgrade, which raised questions about U.S. intentions toward China. PLA doctrine was updated with a focus on long-range conventional missile strikes against U.S. centers of gravity, such as airbases along the first island chain.8 For instance, the 2006 Science of Campaigns described a joint anti-air raid campaign in these terms:

Aviation units as the main force will coordinate with the navy, long-range missile forces, and special operations forces to attack enemy air bases from different directions, distances, and altitudes, in batches and multiple waves carrying out a sustained, violent, and sudden all-around joint fire attack against enemy air bases [that will] destroy the enemy air strike system.⁹

Along with this counterintervention focus, some U.S. analysts argued that the PLA was seeking a "sea control" capability within the first island chain (out to 200 nautical miles [nm] from China's coast) along with the ability to "contest" U.S. military operations out to the second island chain (an additional 1,400 nm).¹⁰ The PLAN would be central to this vision, but would require support from the PLA Air Force (PLAAF) and the Second Artillery Force (forerunner to the current PLA Rocket Force—PLARF).¹¹ Evidence of progress toward these objectives included heavy submarine procurement and the development of various long-range conventional missiles and over-the-horizon targeting systems.¹² Structural reforms launched in late 2015 maintained the PLA's focus on joint operations within the near seas. The principal change was the transition from a system of seven military regions to five joint theater commands.¹³ Each of the theaters, which have operational control over ground, naval, air force, and conventional missile forces within their respective areas of responsibility, are aligned against specific regional contingencies.¹⁴ For instance, the Eastern Theater Command is responsible for Taiwan and the East China Sea, while the Southern Theater Command handles the South China Sea. During peacetime, the theaters organize joint training, develop regional contingency plans, monitor the security environment, and coordinate PLA operations in their areas of responsibility.

By contrast, PLA activities beyond China's periphery have focused on individual services. PLA ground forces have contributed to United Nations (UN) peacekeeping operations in Africa and the Middle East since the late 1980s.15 The navy has carried out port calls around the world, noncombatant evacuations (NEOs) in Libya and Yemen, and anti-piracy operations in the Gulf of Aden since 2008 (see figure 2).¹⁶ PLAAF units began performing over-water bomber training flights in 2015, some beyond the first island chain.¹⁷ The PLA's inaugural overseas base in Djibouti, which opened in 2017, is staffed by a PLAN Marine Corps mechanized infantry company. Most exercises with foreign countries have only involved a single service.¹⁸ While the new Joint Staff Department (JSD) nominally took charge of overseas operations as part of the latest reforms, interlocutors suggest that the service headquarters continue to supervise most activities beyond China's periphery, including the anti-piracy task forces.19

There are two reasons why the PLA has not emphasized joint operations in the far seas. First, missions farther afield, such as peacekeeping and anti-piracy patrols, are more limited in nature and usually do not require extensive interservice coordination. Second, because most of the PLA's anticipated contingencies are within China's immediate neighborhood, there has been less need

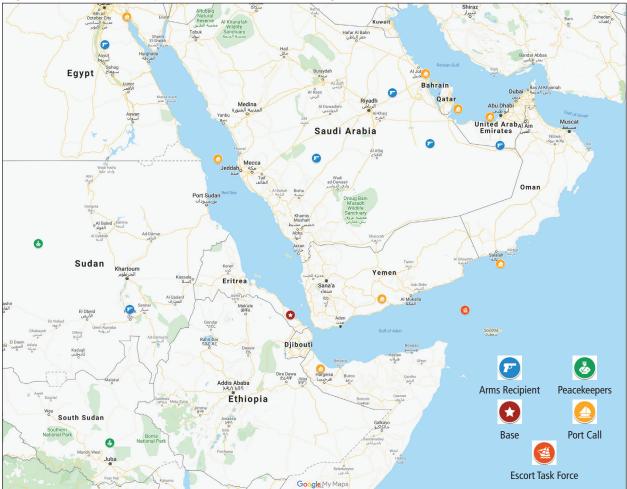


Figure 2. China's Military Presence in the Red Sea Region

Source: Author using Google MyMaps in compliance with Terms, Geobasics-DE/BKG (©2019). Google, Inst. Nacional, Maps GISrael, ORION-ME.

to conduct operations in more distant areas. However, in the coming years, the PLA could place greater emphasis on out-of-area joint operations. Operating jointly would allow the PLA to handle nontraditional security threats more effectively, especially in more complex scenarios such as large-scale NEOs, and provide Chinese leaders with more potent options for deterring or punishing state actors. While the PLA is unlikely to match the U.S. ability to conduct major overseas combat operations soon, a stronger ability to conduct joint operations far beyond China would represent a key step in the PLA's evolution into a "world-class" military, as prescribed by Xi Jinping and other current Chinese Communist Party leaders.²⁰

Before it can attain this ability, however, the PLA must overcome several challenges. For instance, PLA

power projection capabilities such as strategic airlift and sealift have been limited, reducing its ability to execute overseas operations and the potential contributions of other services.²¹ The PLA also lacks a global C2 and logistics infrastructure to support large-scale joint operations.²² Moreover, despite the new division of labor imposed by PLA reforms (which relegate the services to a force-building role), the service headquarters have bureaucratic incentives to assert operational control over some activities rather than ceding them to joint commanders. This is easier in operations that take place beyond the boundaries of the five theater commands. The next sections outline several types of joint operations the PLA may have to conduct in the far seas, and then detail the challenges that will have to be overcome to improve the PLA's joint operations capabilities.

Future Scenarios

By 2035, the date by which Chinese leaders have required the PLA to "basically complete" its modernization, there could be several scenarios where the PLA could be tasked to execute overseas joint operations. As a heuristic, these can be divided into three categories: *military operations other than war* (MOOTW), such as NEOs, stabilization operations in a permissive environment, and joint operations to protect sea lines of communication (SLOCs) against piracy or terrorist threats; *counterintervention operations* targeting U.S. and allied forces beyond the first island chain; and *overseas combat operations* against a state adversary, including higher end missions to protect SLOCs from foreign interdiction.

Military Operations Other Than War. China's expanding overseas interests will put a premium on the PLA's ability to conduct what U.S. joint doctrine terms limited contingency operations, but which are more commonly referred to in PLA circles as MOOTW.23 Chinese interests abroad include the presence of Chinese nationals in foreign countries; commercial businesses, which in 2016 included some 40,000 enterprises operating abroad; energy and transport routes, such as natural gas and oil pipelines and strategic maritime passages;²⁴ and loans and investments in infrastructure projects across Eurasia and beyond, many of which belong to the Belt and Road Initiative (BRI).²⁵ Given the economic stakes and rising public expectations, protecting these interests has been a theme of recent Chinese Communist Party and Chinese government proclamations. As early as 2004, Hu Jintao outlined the "new historic missions" for the PLA, which included protecting overseas interests.²⁶ The 2019 defense white paper similarly states that "one of the missions of China's armed forces is to effectively protect the security and legitimate rights and interests of overseas Chinese people, organizations, and institutions."27

Many of China's overseas interests are in unstable regions. In the context of the BRI, Chinese analysts have identified the need to be able to respond to terrorism, piracy, natural disasters, and civil conflict. While some threats might not require PLA intervention-smaller challenges might be dealt with by host nations, private security companies, Chinese civilian ministries, or diplomacy-China's military may be called upon to rescue citizens, protect assets, or punish groups endangering Chinese interests.²⁸ Individual services will take the lead in some operations, but more complex cases might require a "joint" element. The PLA will likely need to develop the ability to organize, deploy, and support joint task forces (JTFs) to conduct some of these operations. As discussed below, this will pose a challenge given that operational control of overseas operations currently rests mainly with the services. Examples of MOOTW that could require joint operations include:

• Noncombatant evacuations: Civil strife or a natural disaster may require the PLA to evacuate PRC nationals from distant regions. PLAN and PLAAF assets, possibly supported by the PLAA or People's Armed Police (PAP) SOF, could be mobilized to assist and would need to coordinate with host nation and Chinese civilian authorities.²⁹ These operations might require a JTF to coordinate multiple services and branches (just as the U.S. military has established JTFs to carry out NEOs, such as in Operation *Assured Response* in Liberia in 1996).³⁰ Evacuees might be transported to "safe havens," including Chinese overseas military bases, prior to repatriation.

• Humanitarian assistance: HA/DR operations designed to alleviate droughts, famines, earthquakes, hurricanes, or an epidemic could also necessitate joint operations. An early precedent was the dispatch of PAP medical staff and PLA engineers to Indonesia following the 2004 Indian Ocean tsunami (though China lacked the capability to offer more extensive military assistance).³¹ These operations may also involve JTFs, likely composed of logistics, medical, and other combat support personnel, in conjunction with air force or navy transport and host nation support. Such missions would help stabilize partner countries and foster "goodwill" for China in key countries or regions.³²

 Stabilization/peace operations: Peace or stabilization operations might be conducted at the request of a country facing internal turmoil. While China strongly prefers UN authorization for peacekeeping operations, unilateral intervention might be needed if the UN Security Council fails to act or if UN peacekeeping forces are insufficient. In such cases, Beijing might use its 8,000-strong standby peacekeeping force to restore and maintain order.33 Chinese forces would likely be deployed and supported by PLAAF strategic airlift such as the new indigenous Y-20 and the Russian-built IL-76, which has been used to carry Chinese peacekeeping units.³⁴ China would likely coordinate its efforts with relevant regional organizations such as the African Union and the League of Arab States and seek their authorization to legitimize its actions.³⁵

◆ Counterterrorism raids: The PLA might also be tasked with capturing criminals or rescuing PRC citizens. PLA or PAP SOF would need to be able to deploy to remote locations, with or without local assistance, and develop skills such as room clearing, precisionshooting, and breaching. One inspiration was the U.S. raid against Osama bin Laden, which involved SOF, space-based reconnaissance, and other capabilities.³⁶ The PLA has also tested some of these skills in counterterrorism exercises with foreign militaries.³⁷ Chinese SOF might also conduct lethal strikes on high-value targets. In 2013, Beijing reportedly considered (but decided against) sending armed drones into Myanmar to kill a drug trafficker responsible for killing 13 Chinese citizens.³⁸

• Sea lines of communication protection against piracy and terrorism: The PLAN has articulated the need to protect China's extensive overseas maritime supply routes against both state and nonstate threats. The navy has carried out anti-piracy operations in the Gulf of Aden since late 2008 and it is possible that the PLA could conduct single service (navy and marine) or joint operations in response to piracy or terrorist threats against maritime choke points or in key shipping lanes. The need for PLA joint operations in this area would perhaps be the greatest if the United States or other major powers were unable or unwilling to act.

Counterintervention Operations. A second category of far seas joint operations centers on countering intervention by the United States (or hypothetically another major power, such as India). While PLA operations and combat training have focused on the near seas, Chinese writings advocate extending the PLA's "defensive perimeter" to challenge intervening U.S. forces. This is clearest in the context of the individual services, which have promoted more ambitious agendas for bureaucratic reasons. For example, a 2004 volume by a PLAN author argued that the scope of "naval strategic defense should progressively expand" beyond the first island chain.³⁹ A 2009 book enjoined the PLAAF to be able to "carry out lethal damage to core enemy targets" out to the second island chain, which includes Guam.⁴⁰ A 2015 article encouraged the PLAAF to build "knockout warfighting forces" and "accelerate the formation of credible combat power" in the far seas.41 This would require longer ranges for conventional ballistic and cruise missiles and land-based aircraft.

Other Chinese writings propose a joint approach to extending the range of China's counterintervention capabilities. A 2011 book published by the Academy of Military Sciences (AMS), for instance, proposed a joint "open seas operations force" of aircraft carriers and nuclear-powered submarines, supported by bombers and ground-based conventional missiles, which would operate outside the first island chain.⁴² A 2012 AMS teaching volume on joint operations asserted that Chinese joint forces would need to be able to strike enemy targets such as large flotillas and overseas bases.⁴³ The 2013 *Science of Strategy* similarly argued that:

Our precision firepower strike means should be able to break through the enemy's various kinds of defense systems, to implement effective destruction of fixed targets on land and moving targets at sea, to effectively cover the First and Second Island Chains in the near future and gradually expand to cover part of the area of the Indian Ocean and Western Pacific Ocean in the mid to long term.⁴⁴

Joint training farther from China's coasts suggests that these prescriptions are working their way into practice. As early as November 2007, PLAN and PLA Naval Air Force (PLANAF) assets staged live fire drills in waters east of Taiwan that focused on operating within "complex electromagnetic and severe weather conditions."45 Increasing PLAAF training over water has included joint training with naval aircraft on precision strike, surveillance, early warning, and "air-tosurface attack targeting vessels on the sea or in ports."46 The PLARF, responsible for China's antiship ballistic missiles (ASBMs) and long-range, ground-based conventional missiles (such as the DF-26 "Guam killer") has also begun to participate in joint exercises, many of which appear to be based on counterintervention scenarios.47 These types of training exercises, which are likely to continue under an updated military training regimen announced in 2017, will strengthen the PLA's ability to counter U.S. forces deeper into the Pacific and even the Indian oceans.48

To deal with the threat of Chinese counterintervention, U.S. planners have experimented with responses such as distribution of strike platforms (what the U.S. Navy calls "distributed lethality"), operating from austere forward bases and runways (a focus of the Marine Corps), hardening and camouflaging of air bases, and implementing more resilient logistics systems.⁴⁹ Addressing these U.S. improvements will require the PLA to upgrade its targeting, strike, and assessment capabilities, and to foster stronger interoperability between PLA assets operating from different platforms. PLA counterintervention operations will also have to consider how air, naval, and conventional missile forces can coordinate with the PLA's Strategic Support Force (SSF), which would be responsible for providing targeting information, attacking U.S. space systems, and conducting cyber attacks against U.S. forces.

Overseas Combat Operations. While the PLA of 2035 would probably be unable to conduct a major war beyond the first island chain, Beijing would have the capabilities to conduct limited joint combat operations against other countries. This would mark a significant shift from China's current policy of nonintervention, but several circumstances could make overseas combat more likely. First, if significant Chinese interests were at risk and China was unable to leverage its economic or diplomatic power, Beijing might resort to military force to deter adversaries or deliver retaliatory strikes (for example, similar to 1986 U.S. air strikes against Libya in retaliation for Libyan-sponsored terrorist attacks on U.S. Servicemembers in Berlin). Second, if Beijing abandons its traditional prohibition against military alliances, China might need to intervene on behalf of an ally. This possibility appears remote, but some influential Chinese thinkers have supported developing alliances to match a key U.S. strength.⁵⁰ It is also worth noting that China has been willing to abandon other aspects of its nonintervention doctrine, such as its prohibition on foreign military bases. Third would be a shift from China's relatively restrained reform-era leadership to a more belligerent regime.⁵¹

A joint firepower campaign in the far seas would require coordinated strikes from air and naval platforms, supported by SSF ISR.⁵² Those assets could be supported by organic logistics elements assigned to a PLA JTF or from overseas Chinese bases. For instance, the Djibouti base reportedly has underground ammunition storage facilities and stockpiles of other supplies.⁵³ While these operations would likely be small in scale and short in duration, progress in C2, training, and power projection capabilities might eventually allow the PLA to contemplate missions similar to the 1999 NATO air campaign in Kosovo.

Defending SLOCs from state adversaries may also require the deployment of significant combat power in distant regions.⁵⁴ SLOC protection has traditionally been a navy mission: the PLAN has conducted extensive blockade and counterblockade training that could be relevant in a conflict.⁵⁵ The navy also has a vast inventory of mines, including "smart" mines, which can be laid by various surface and subsurface platforms.56 However, sea lane security could involve some "joint" elements. China could seek to emulate U.S. doctrine, in which Air Force bombers play a role in sea mining.⁵⁷ One PLA source envisions a "mine-laying blockade force group" that includes both naval forces and PLAAF bombers.⁵⁸ Moreover, the PLAAF has extensively studied U.S. concepts of air blockades, including mine laying, which could be employed beyond the first island chain.⁵⁹ As with missile strikes, a joint counterblockade operation in far seas regions such as the northern Indian Ocean would also likely be supported by SSF capabilities in the space, cyber, and electromagnetic domains.

How Will PLA Systems Need to Evolve?

Today's PLA is already capable of carrying out some less demanding joint operations in the far seas. This has already been demonstrated in NEOs, such as the 2011 evacuation from Libya that involved naval and air force assets. However, depending on the complexity of the mission, the PLA will require further coordination between different services and other supporting changes. For instance, in a complex MOOTW scenario, PLA ground forces may require C2 and intelligence, surveillance, and reconnaissance (ISR) support from the SSF, air and/or naval strike assets, and logistics support from PLAAF airlift and PLAN sealift assets, while a naval task force conducting overseas counterblockade operations may require SSF support, fire support from the PLAAF or PLARF, and logistics support. To improve coordination, the PLA will require further changes to its C2 arrangements, human capital, logistics support, and strengthened combat capabilities provided to a joint force by the services.

Joint Command and Control. Large-scale or complex joint operations in the far seas would pose new challenges

for PLA C2 arrangements. As noted above, most PLA overseas operations appear to remain under the command of individual services, partly because the services already have the hardware to communicate with their deployed forces.⁶⁰ This system is both ill-suited to joint operations, which should be led and supported by joint commands and staff officers who are familiar with joint operational concepts and the unique capabilities of all the services, and cuts against recent reforms that sought to place all operations under joint command structures.

To be sure, the post-reform PLA theater joint command and control structure—with the theater commands exercising control of ground, naval, and air forces through service component headquarters—did rectify a major problem with pre-reform arrangements, where the military region headquarters did not exercise peacetime command of naval, air, and missile units within their areas of responsibility.⁶¹ In the post-reform system, each

large-scale or complex joint operations in the far seas would pose new challenges for PLA C2 arrangements

theater has responsibility for specific regional contingencies. Nevertheless, unlike the U.S. military, which assigns every part of the world to a geographic combatant command, PLA operations far from China do not fall within the geographic purview of any of the theaters. As a current workaround, the PLA has established an Overseas Operations Office within the Central Military Commission (CMC) Joint Staff Department, but this unit appears responsible only for "coordinating" overseas activities, not directly controlling them.⁶²

If the PLA intends to improve its ability to conduct more complex and larger scale joint combat operations farther from home, there are at least five potential solutions it might consider for improving PLA joint C2 in the far seas. These options are not mutually exclusive; different solutions could apply to each of the scenarios outlined above.⁶³

• Extend theater command responsibilities. The PLA could follow U.S. practice and assign every country and region in the world to one of its theater commands. This would clarify responsibilities and allow the theaters to gradually extend their joint command and control and communications capabilities farther from China's borders.⁶⁴ However, the theater commands are relatively new entities that appear to have their hands full dealing with their existing responsibilities. Moreover, this would require duplicating C2 capabilities across the theater commands and risk creating seams across the expanded theater command areas of responsibility that would complicate global operations.

 Establish a new "global command." An alternative would be a new global command that would handle far seas contingencies and other overseas operations that lie outside theater command areas of responsibility.65 This could build on lessons learned from the theater commands; avoid duplication of costly long-range command, control, communications, computer, and ISR (C4ISR) capabilities; and-if based in Beijing-potentially benefit from synergies and ease coordination challenges with the Foreign Ministry and other government agencies, Chinese intelligence services, and strategic airlift and sealift capabilities controlled by the service headquarters. A global command would require a significant investment in terms of personnel, equipment, and facilities. Unlike the theater commands, a global command might not have service component headquarters or permanent forces assigned, which could be an impediment to effective operations.

• Allow service headquarters to command far seas operations. The path of least resistance would be to allow service headquarters to maintain command responsibilities for far seas operations that lie outside the areas of responsibilities of the theater commands. This appears to be the current PLA practice, with navy headquarters in charge of counterpiracy deployments in the Gulf of Aden and China's logistics base in Djibouti. The advantage is that the navy already has some experience and the communications hardware necessary to command these operations.⁶⁶ However, this solution runs counter to the logic of the reforms and is not well suited for conducting joint operations that involve multiple services or that require significant deployments of ground forces far from China's borders.⁶⁷ Moreover, the other services are likely to resist permanent navy dominance of an overseas mission set likely to expand in the future.

• Strengthen JSD operational capabilities. Another solution would be to strengthen the JSD's ability to command multiple and larger scale far seas operations. This would require significant expansion of the size and staffing of the joint operations command center. The advantage is that this capability could expand incrementally as the pace of PLA overseas operations grow. Disadvantages include potential overload, possible interference with JSD responsibilities to command national level assets in a major war, and questions about whether the joint operations command center is well suited to exercise tactical command and control over operations halfway around the world.

 Develop new JTF mechanisms. The PLA could also follow U.S. practice and develop new ad hoc and standing joint task forces that would likely report to the JSD or another higher joint headquarters.⁶⁸ This would be a flexible solution that allows for assigning ongoing responsibilities to a standing task force (to take the burden off the JSD and the joint operations command center) and for establishing and disestablishing ad hoc joint task forces as necessary. One obvious obstacle is that the PLA officer corps is new to joint operations. It is not clear how many senior PLA officers would be capable of effectively commanding a joint task force or how many mid-level officers could serve as capable staff. This problem may ease over time as the PLA gains more experience planning and conducting joint operations at the theater level.

Joint Doctrine, Training, and Education. Human capital limitations will also influence the PLA's ability to execute joint operations in distant regions.⁶⁹ At present, only a relatively small share of PLA personnel have any experience operating in the far seas. For instance, only roughly 2,000 PLA ground force personnel are assigned to UN peacekeeping missions at any given time, representing less than 1 percent of that service.70 PLAAF bomber, transport, and reconnaissance aircraft crews have begun to gain more exposure to training beyond the first island chain, but air force members have few other opportunities to operate in distant regions aside from NEOs and foreign military exercises.⁷¹ Only a single PLA Navy Marine Corps company has been deployed to the PLA's inaugural base in Djibouti. Naval personnel have perhaps the most far seas experience, with the PLA deploying approximately 9-12 ships (each consisting of perhaps 1,800-2,000 sailors) per year to the Gulf of Aden. However, its operational and training focus remains on the near seas and no PLAN ships are permanently based overseas. Practical joint expeditionary experience among current PLA servicemembers is negligible.

Improving human capital in this area would require new operational concepts and instilling them in rising commanders and staff officers. PLA doctrine has focused on specific campaigns that might be relevant to a regional conflict, such as island landings, joint firepower strikes, and blockades.⁷² Some of these concepts may have relevance to combat operations in the far seas, such as joint firepower strikes against a regional opponent. PLA doctrine has also explored countering U.S. intervention, though updates will have to contend with changes in U.S. operational concepts. New doctrine may also consider how JTFs can support overseas operations and discuss the challenges of transportation and resupply along China's vulnerable exterior lines. Moreover, those responsible for writing doctrine will need to familiarize themselves with overseas operations, likely by studying foreign examples.73

PLA training will also need to focus more on operations in the far seas. This will build on a limited, but improving, foundation of joint training, which in recent years has focused on cross-theater exercises and professional training within the theaters for joint commanders and staff officers.74 While overseas exercises in recent years have honed PLA capabilities in MOOTW, most of them have involved only single services and relatively limited numbers of personnel.75 Only a few overseas exercises, specifically those with Russia and under Shanghai Cooperation Organization auspices, have included significant joint combat elements.76 More demanding operations will require participation of multiple services operating alongside host nations and Chinese civilian agencies. Evidence of efforts to improve counterintervention training would include greater PLARF and SSF participation and will have to explore ways to improve coordination between the CMC and theater commands.77 China's outline of military training and evaluation, updated in 2018, will also need further refinement to focus on out-of-area contingencies.78

Military education reforms will also be needed. Long focused on single service and combined arms operations, PLA education has offered exposure to joint operations only at a senior level. One indicator of steps to prepare PLA personnel for overseas joint operations would be offering greater education in this area to younger officers.⁷⁹ Another sign would be curricula changes that highlight the specific challenges of overseas operations, such as dealing with host nations and operating in a whole-of-government manner.⁸⁰ A third indicator would be increasing availability of courses or hands-on experience in foreign languages and cultures, which has largely been confined to PLA foreign area officers but would be useful for future operations conducted alongside foreign militaries or deeper engagements with foreign populations.⁸¹ This could also include reducing constraints on foreign officers studying alongside PLA students in China's professional military education courses.⁸² Incentivizing officers to gain foreign experience could also require changes to the recruitment, promotion, and assignment systems.83

Joint Logistics Support. The PLA's ability to execute joint operations in the far seas will also require adjustments to its logistics capabilities and infrastructure. Logistics has historically been a main PLA weakness.⁸⁴ Service logistics systems have primarily supported PLA overseas operations but have suffered from limited longrange assets and overseas forward logistics facilities.85 The Djibouti base is the first significant exception to this rule. The creation of the Joint Logistic Support Force (JLSF) and experience gained from PLA activities abroad should increase its capability to sustain overseas joint operations. However, to date, JLSF operations have focused on supporting the new theater commands rather than developing expeditionary capabilities.⁸⁶ It remains unclear how joint forces would be resupplied, and what role, if any, the JLSF would play.87

Broadly speaking, militaries have three ways to satisfy logistics requirements when operating far beyond their home territory. The first is to "bring it with you": to have organic combat and transportation capabilities that can provide critical functions, such as air defense, ISR, and strike, and large quantities of dedicated logistics assets that can support deployed forces from the homeland. This is most practical for naval forces, but such assets can also be assembled into a JTF to support operations across domains. In either case, the logistics demands increase along with the size of the deployed force and the distance from home bases. The second entails "longer legs": aircraft and naval vessels with greater endurance (for example, nuclear-powered aircraft carriers) or refueling capability to extend their operational ranges. Space and cyber assets, which are less constrained by geographic limits, can help provide navigational and logistics support, although these systems may not be optimized for far seas operations.⁸⁸ The third involves securing base access near the area of operations, which makes it possible to use shorter range platforms and shortens supply lines.

The PLA could employ any of these approaches alone or in combination to sustain joint forces in the far seas. Less demanding missions could utilize existing strategic airlift and sealift assets. PLA ground forces could be transported via the air force's 20 Il-76 and 10 Y-20 strategic transport aircraft or the navy's small but growing number of Type-071 landing platform docks, which are deemed to have "considerably greater and more flexible capability for 'far seas' operations than the older landing ships," or the new Type-075.89 The PLAN could also carry a small number of troops aboard other ships, such as marine SOF aboard destroyers. If an operation required transporting large numbers of ground troops and heavy equipment, the PLA could tap civilian vessels.90 However, the PLA has faced reliability issues in the past when employing civilian transport even in exercises in China.⁹¹ Moreover, there would be significant costs to operating and maintaining these capabilities, including expenses associated with purchasing large volumes of oil, that may stress China's defense budget in a period of economic uncertainty.92

MOOTW could also be sustained via the PLA base in Djibouti as well as through dual-use ports owned, built, and operated by Chinese civilian firms such as COSCO and CMPort and constructed with Chinese military specifications in mind.⁹³ Indeed, while the navy initially tried to adopt a "bring it with you" approach, it has gradually reduced its reliance on its own dedicated supply ships in favor of commercial procurement from foreign ports.⁹⁴

Given problems of host nation reliability and China's "principled" opposition to military alliances, the PLA is more likely to rely on organic capabilities and a "longer legs" approach to sustain joint forces in the counterintervention and overseas combat operations scenarios. However, the PLA's limited air and sea refueling capabilities would pose one constraint. While the PLANAF and PLAAF continue to acquire longer range platforms, limited air refueling capabilities restrict the ability of land-based fighters to protect longer range bombers and support aircraft along the edge of the first island chain, let alone in the second island chain.⁹⁵ These air refueling limitations may eventually be alleviated by reported plans to develop a tanker version of the Y-20 strategic transport aircraft. Similarly, fleet replenishment remains a challenge for the navy, which possesses only 10 replenishment ships (though more are under construction).⁹⁶

Strengthened Combat Capabilities. Given the PLA's acquisition of modern weapons and platforms over the past two decades, possession of relevant systems does not appear to be a major constraint for joint operations in the far seas. For instance, joint firepower strikes could be conducted by platforms including PLAN submarines and destroyers launching missiles like the YJ-83 antiship cruise missile (ASCM), PLANAF bombers using the supersonic YJ-12 ASCM, and PLAAF bombers with AS-CMs and land-attack cruise missiles. As the PLAAF and likely the PLAN acquire additional heavy bombers such as the H-20, the PLA's capacity to execute long-range joint strikes will increase. The PLARF can also employ conventional missiles such as the DF-26 and DF-21D ASBM. Given the distances and the complexity of targeting potentially moving targets, the SSF would likely assist with transmitting targeting information to platforms involved in long-range strikes.

While PLA overseas joint operations would likely be focused on the aerospace and maritime domains, Beijing could also dispatch combat ground forces.⁹⁷ These could include SOF drawn from several existing capabilities, including the PLAA and the PAP, the reformed PLAAF airborne corps (which has shifted from a division to a brigade structure), and a PLAN Marine Corps which has grown from two to eight brigades, totaling some 80,000 personnel. As discussed above, the effectiveness of these forces would depend on the PLA's ability to resolve underlying C2 and human capital challenges related to joint operations.

Nevertheless, further acquisitions may be necessary to support combat-focused PLA joint operations. While a detailed analysis of capability gaps is beyond the scope of this paper, one example is in far seas air defense. The PLA's land-based surface-to-air missile (SAM) systems do not extend far beyond China's borders, and, as noted above, the PLAAF has a very limited ability to sustain fighter combat air patrols using aerial refueling. The PLAN would likely need to take the lead with ship-based SAMs, like the SA-20 and HHQ-9.⁹⁸ Nevertheless, the navy would need greater numbers of aircraft carriers to provide sufficient air defense in a counterintervention or overseas combat operation. The indigenous Type 003 aircraft carrier, currently under development with an expected initial operating capability in the late 2020s, would be able to support a greater variety of combat aircraft, thus contributing to higher end PLA joint operations.⁹⁹ The table (next page) summarizes the kinds of systems the PLA could allocate to far seas joint operations as well as current gaps.

Conclusion

The PLA remains a regional military power but has made impressive strides toward a more effective global operational capability. By 2035, the PLA will likely be able to perform a wide range of MOOTW, including nontraditional security missions and limited strikes against nonstate actors. It will also have a stronger ability to conduct joint counterblockade and counterintervention campaigns against the United States and to launch punitive strikes against distant state adversaries. Some operations could be executed with current or incrementally expanded capabilities and supported by current C2, human capital, and joint logistics systems. However, counterintervention operations at extended ranges and more complex joint strikes and raids would require substantial improvements to PLA capabilities and support systems, including a better developed global command structure, increases in sealift and airlift assets, a stronger overseas joint logistics system, and revised doctrine and training programs to produce effective joint commanders.

Whether the PLA will be able to adapt will depend on at least five variables. The first variable is the evolution of the regional security environment. If China remains focused on regional challenges such as Taiwan, North Korea, and the Sino-Indian border dispute, there would be fewer resources available for higher end MOOTW and joint combat operations in the far seas. Resolving one or more of those challenges on China's terms, however, would free up resources for overseas operations.

	Scenario		
Service	ΜΟΟΤΨ	Counterintervention	Overseas Combat Operations
PLAN	Limited sealift, escort of civilian vessels used for sealift, limited medical support, search and rescue, SOF (Marine SOF)	Long-duration presence (for signaling purposes), missiles launched from destroyers, submarines, and bombers, limited air defense of PLAN fleets	Limited sealift, escort of civilian vessels used, Marines, missiles launched from destroyers, submarines, and bombers
PLAA	Limited airlift, medical support, engineers, combat brigades/bulk of designated PKO forces, SOF	Reserves	Bulk of ground forces (combined arms and specialized brigades)
PLAAF	Limited airlift, search and rescue, limited Airborne troops	Short-duration presence with bomber flights (for signaling purposes), limited air defense of PLAN fleets, missiles launched from bombers	Limited airlift, limited air strikes
PLARF	N/A	ASBMs to strike carriers, BMs to strike ports and airfields, nuclear deterrence	Limited conventional missile strikes, including ASBMs
SSF	Space-based C4ISR	Space-based C4ISR, cyber warfare, information warfare	Space-based C4ISR, cyber warfare, information warfare
Current Capability Gaps Across Services	Airlift, sealift, tactical ISR, language capability, local knowledge	Air defense, cruise and ballistic missile defense, ASW, long-range strike, tankers, airborne jammers, cyber-defense, tactical ISR, launch- detection	Airlift, sealift, tactical ISR, language capability, local knowledge, long-range strike, missile defense, persistent airborne early warning and control

Table. Current Capabilities Relevant to a Future PLA Joint Operation in the Far Seas

The second variable concerns the state of Sino-U.S. strategic competition. Intensifying competition within the Indo-Pacific region could keep Beijing focused on preparing for military conflict with the United States. This could constrain forces available for joint operations elsewhere but would also spur efforts to extend the scope of Chinese counterintervention operations beyond the first island chain (including protecting SLOCs in the far seas). It is also possible, though far less likely, that a future U.S. administration would scale back U.S. overseas

military presence and commitments, which would free up PLA resources for overseas operations and reduce the PLA's focus on counterintervention.¹⁰⁰ U.S. retrenchment would also put more onus on the PLA to conduct largescale MOOTW, such as in the anti-piracy arena. Conversely, significant improvements in U.S.-China relations could allow more bilateral security cooperation, which could promote joint operations, especially in nontraditional security areas.

The third variable is the evolution of China's economy. The PLA has already begun procurement of some of the additional capabilities it will need to operate at a larger scale in the far seas, including additional Y-20s and at least three additional aircraft carriers. However, China's ability to produce, field, and maintain large numbers of, in some cases, very expensive weapons and equipment assumes continuing Chinese economic growth. While the Chinese government has sometimes been willing to increase the defense budget at a rate somewhat higher than GDP growth, an economic downturn could delay the production and fielding of those assets.¹⁰¹ This would limit the PLA's ability to conduct larger scale joint operations, such as strikes against a sovereign country. However, it is possible that Xi or another future Chinese leader could devote a higher proportion of Chinese spending to defense, in which case a slowdown would not necessarily result in scaled back military ambitions.

The fourth variable concerns bureaucratic resistance within the PLA. Major additional reforms to the C2 structure, logistics apparatus, and assignment systems that would be required to enhance the PLA's ability to utilize joint force effectively in the far seas could encounter opposition from entrenched bureaucracies, including the services. Adjudicating major acquisition and research and development disagreements between the services could also become a challenge if the CMC does not develop a way to handle those differences. In recent reforms, Xi was able to overcome that resistance through a coherent political strategy as well as his own charismatic influence in the PLA.¹⁰² However, if Xi's influence wanes, or if a successor has much less ability to counter bureaucratic opposition, then the PLA could become stalled in its transition toward a force that is able to operate more effectively on a global scale.

The fifth variable is domestic stability within China. Serious domestic turmoil would, on balance, likely mean that the PLA would focus less on overseas missions. However, the perception that domestic discontent is being fostered by groups located around the world (for instance, foreign sympathizers of ethnic minorities in Xinjiang) could propel Beijing to expand its willingness to conduct limited strikes and raids abroad.

In sum, the PLA of 2035 will most likely continue to focus on combat operations along China's borders and in the near seas along with more limited types of operations farther afield. This would leave the U.S. military as the predominant global military power into the next decade, with China exercising global influence primarily through economic and diplomatic means. Nevertheless, this analysis has identified indicators that would signal a more ambitious global military role, including changes to the C2 structure, significant expansion of expeditionary combat capabilities, and a more expansive joint logistics network. Moreover, changes in the domestic or regional security environment or intensified U.S.-China strategic competition could move the PLA onto a different trajectory, as could changes in Chinese leadership and bureaucratic politics. Thus, the United States and other international observers should not only consider which outcome is most likely, but also which would be most dangerous, and plan accordingly.

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Notes

¹Joint communication and coordination failures in Operation Urgent Fury were an important impetus for the 1986 Goldwater-Nichols Department of Defense Reorganization Act, which mandated a number of changes to increase jointness in the U.S. military. See Ronald H. Cole, Operation Urgent Fury: Grenada (Washington, DC: Joint History Office, 1997), available at <https://www.jcs.mil/ Portals/36/Documents/History/Monographs/Urgent_Fury.pdf>; and Philip Kukielski, The U.S. Invasion of Grenada: Legacy of a Flawed Victory (Jefferson, NC: McFarland & Company, 2019), 213–214.

² Mathieu Duchâtel, Oliver Bräuner, and Zhou Hang, *Protecting China's Overseas Interests: The Slow Shift away from Non-Interference*, SIPRI Policy Paper 41 (Stockholm: Stockholm International Peace Research Institute, June 2014), 52.

³ For an overview, see Joel Wuthnow, "A Brave New World for Chinese Joint Operations," *Journal of Strategic Studies* 40, no. 1–2 (2017), 169–195. For a good Chinese overview, see Dang Chongmin [党崇民] and Zhang Yu [张羽], *Science of Joint Campaigns* [联合作战 学] (Beijing: People's Liberation Army Press, 2009).

⁴M. Taylor Fravel, "Shifts in Warfare and Party Unity: Explaining China's Changes in Military Strategy," *International Security* 42, no. 3 (Winter 2017–2018), 73–74. See also David M. Finkelstein, "China's National Military Strategy: An Overview of the 'Military Strategic Guidelines," in *Right Sizing the People's Liberation Army: Exploring the Contours of China's Military*, eds. Andrew Scobell and Roy Kamphausen (Carlisle, PA: Army War College Strategic Studies Institute, 2007), 69–140.

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⁷ On Korea contingencies, see Oriana Skylar Mastro, "Conflict and Chaos on the Korean Peninsula: Can China's Military Help Secure North Korea's Nuclear Weapons?" *International Security* 43, no. 2 (Fall 2018), 84–116.

⁸ Roger Cliff et al., Entering the Dragon's Lair: Chinese Antiaccess Strategies and Their Implications for the United States (Santa Monica, CA: RAND, 2007), available at <https://www.rand.org/pubs/ monographs/MG524.html>; Toshi Yoshihara, "Chinese Missile Strategy and the U.S. Naval Presence in Japan," Naval War College Review 63, no. 3 (Summer 2010), 1–24.

⁹Zhang Yulian [张玉良], ed., *The Science of Campaigns* [战役学] (Beijing: National Defense University Press, 2006), 347–348.

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¹¹ Ibid., 192.

¹² Cortez A. Cooper, *Joint Anti-Access Operations: China's "System-of-Systems" Approach*, Testimony Before the U.S.-China Economic and Security Review Commission, CT-356 (Santa Monica, CA: RAND, January 27, 2011), 6, available at https://www.rand.org/content/dam/rand/pubs/testimonies/2011/RAND_CT356.pdf>.

¹³ The military regions had operational control over ground forces only; other forces reported through their respective service headquarters in Beijing.

¹⁴ For a discussion, see Edmund J. Burke and Arthur Chan, "Coming to a (New) Theater Near You: Command, Control, and Forces," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, eds. Phillip C. Saunders et al. (Washington, DC: NDU Press, 2019), 227–256, available at <https://ndupress.ndu.edu/Publications/ Books/Chairman-Xi-Remakes-the-PLA/>.

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²⁰ For a discussion on the concept of a "world-class" military, see M. Taylor Fravel, "China's 'World-Class Military' Ambitions: Origins and Implications," *The Washington Quarterly* 43, no.1 (2020), 85–99.

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²² See Chieh and Yang, "Crossing the Strait," in Wuthnow et al., *The PLA Beyond Borders*.

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²⁸ Heath, China's Pursuit of Overseas Security, 21–26.

²⁹ Duchâtel, Bräuner, and Hang, *Protecting China's Overseas* Interests, 52; and Michael S. Chase, "The PLA and Far Seas Contingencies: Chinese Capabilities for Noncombatant Evacuation Operations," in *The People's Liberation Army and Contingency Planning in China*, eds. Andrew Scobell et al. (Washington, DC: NDU Press, 2015), 307–308, available at <https://ndupress.ndu.edu/Portals/68/ Documents/Books/PLA-contingency/PLA-Contingency-Planning-China.pdf>.

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⁴⁵ Sharman, China Moves Out, 13.

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⁶² Yao Jianing, ed., "PLA Sets Up Overseas Operations Office to Strengthen Overseas Rapid Reaction," *China Military Online*, March 25, 2016, available at <http://english.chinamil.com.cn/news-channels/ pla-daily-commentary/2016-03/25/content_6977517.htm>.

⁶³ This discussion draws heavily from Wuthnow et al., *The PLA Beyond Borders*, 7–9.

⁶⁴ For one article by a Southern theater command (TC) officer advocating an expanded TC role in far seas operations, see Li Jianwe [李建文], "Making the Leap: From Near Seas to Far Seas" [跨越:从今海到远海], *Jiefangjun Bao* [解放军报], October 13, 2016, available at <http://www.81.cn/jfjbmap/content/1/2016-10/13/04/2016101304_pdf.pdf>.

⁶⁵ For a PLA analysis of U.S. and Russian command arrangements and the argument that theater commands should be based around China's strategic needs, see Li Meili and Liu Xiaolian [李美丽,刘孝良], "Explaining Joint Command Mechanisms in Foreign Militaries" [解码外军联合指挥机构], Xinhua Online [新华网], October 10, 2018, available at <http://www.xinhuanet. com/mil/2018-10/09/c_129967764.htm>. The article notes that changing strategic needs could require new organizations, citing the establishment of U.S. Africa Command as an example.

⁶⁶ For an argument that the navy is best equipped to develop and operate the advanced C4ISR necessary for far seas operations, see Zhu Dangming and Tai Daguo [朱党明,秦大国], "Building a Sea and Space Versatile Battlefield Situation Picture" [海天一体战场通用态势 图构建],准备学院学报], Journal of Equipment Academy [准备学院 学报] 28 (April 2017), 46–51.

⁶⁷ The discussion of such operations in the 2013 edition of the PLA's *Science of Military Strategy* envisions the other service playing only minor roles in supporting naval operations. See 215–216.

⁶⁸ This higher joint force headquarters might be a theater command or a global command, if one is eventually established.

⁶⁹ On human capital challenges in the PLA, see Michael S. Chase et al., *China's Incomplete Military Transformation: Assessing the Weaknesses of the People's Liberation Army* (Santa Monica, CA: RAND, 2015), 44–59, available at <https://www.rand.org/content/dam/rand/ pubs/research_reports/RR800/RR893/RAND_RR893.pdf>.

⁷⁰ For a discussion, see Wuthnow, "PLA Operational Lessons from UN Peacekeeping."

⁷¹ Mark R. Cozad and Nathan Beauchamp-Mustafaga, *People's Liberation Army Air Force Operations Over Water* (Santa Monica, CA: RAND, 2017).

⁷² Many of these campaigns were developed in the specific context of a Taiwan contingency but are written in general terms and may have broader applicability. For a discussion of changes in PLA strategy, see Fravel, "Shifts in Warfare and Party Unity," 37–83.

 73 For instance, AMS scholars might look closely at U.S. or other foreign JTF models.

⁷⁴ Mark R. Cozad, "Toward a More Joint, Combat-Ready PLA?" in Saunders et al., *Chairman Xi Remakes the PLA*, 211–214, 217–218.

⁷⁵ For instance, PLAN port visits often involve search-and-rescue and humanitarian assistance/disaster relief drills. See Allen et al., *Chinese Military Diplomacy, 2003–2016, 24.*

⁷⁶ Ibid., 27–29.

⁷⁷ Particularly sensitive capabilities such as antiship ballistic missiles and counterspace weapons might be directly controlled by the CMC, raising questions about coordination with the theaters.

⁷⁸ The Outline of Military Training and Evaluation was updated as part of recent reforms. See "PLA Publishes New Military Training Outline, Highlights Combat," Xinhua, January 27, 2018, available at <http://www.xinhuanet.com/english/2018-01/27/c_136929690.htm>.

⁷⁹ One sign that this is being seriously pursued is the establishment of a Joint Operations College within the PLA National Defense University.

⁸⁰ A factor limiting progress in this area is that, unlike the U.S. war colleges, China's professional military education system rarely includes civilian and international students learning alongside PLA officers.

⁸¹ Chase et al., *China's Incomplete Military Transformation*, 52–53.

⁸² One problem for the PLA is that foreign officers do not attend the main PLA NDU campus, and thus have limited interactions with rising PLA leaders.

 83 For instance, out-of-area experience could be a positive factor influencing promotion decisions.

⁸⁴ Chase et al., *China's Incomplete Military Transformation*, 80.

⁸⁵ For example, the PLAN did not add its first logistics vessel similar, albeit "significantly smaller,"—to the U.S. Military Sealift Command Mobile Landing Platform (MLP) until 2015. See Mike Yeo, "China Commissions First MLP-Like Logistics Ship, Headed for South Sea Fleet," USNI News, July 14, 2015, available at <https://news. usni.org/2015/07/14/chinas-commissions-first-mlp-like-logisticsship-headed-for-south-sea-fleet>. As of 2018, it still only has one such vessel. See IISS, *The Military Balance*, 2018, 253.

⁸⁶ Kevin McCauley, *Modernization of PLA Logistics: Joint Logistics Support Force*, Testimony Before the U.S.-China Economic and Security Review Commission, February 15, 2018, 5.

⁸⁷ LeighAnn Luce and Erin Richter, "Handling Logistics in a Reformed PLA," in Saunders et al., *Chairman Xi Remakes the PLA*, 278–279. See also Joel Wuthnow, "A New Era for Chinese Military Logistics," *Asian Security*, 2021.

⁸⁸ For example, China's *Beidou* GPS satellite constellation provides the best coverage and accuracy near China (where multiple satellites are deployed) and less accuracy in other parts of the world.

⁸⁹ For the number of PLAAF II-76 strategic transports, see IISS, *Military Balance*, 2018, 255. For the number of PLAAF Y-20 strategic transports, see Andreas Rupprecht, *Modern Chinese Warplanes: Chinese Air Force—Aircraft and Units* (Houston, TX: Harpia Publishing, 2018), 80. For the quote on the Type-071, see *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2016*, (Washington, DC: Office of the Secretary of Defense, April 26, 2016), 27. ⁹⁰ The civilian vessels that would be used for troop and equipment transport could include modified cargo vessels and cruise ships. For the use of modified cargo vessels, see Jeffrey Lin and P.W. Singer, "Chinese Cargo Ships Get the Military Option," *Popular Science*, June 23, 2015, available at <https://www.popsci.com/chinese-cargo-ships-get-military-option>. For the use of cruise ships, see Robert Beckhusen, "China Now Using a Cruise Ship to Haul Troops and Tanks," *Wired*, August 31, 2012, available at <https://www.wired.com/2012/08/chinacruise/>.

⁹¹Xiaobing Li, "Impact of Social Changes on the PLA: A Chinese Military Perspective," in *Civil-Military Relations in Today's China: Swimming in a New Sea*, eds. David M. Finkelstein and Kristen Gunness (New York: Routledge, 2007), 35–36.

⁹² Gabriel Collins and Andrew S. Erickson, *Hold the Line Through* 2035: A Strategy to Offset China's Revisionist Actions and Sustain a Rule-Based Order in the Asia-Pacific (Houston, TX: Rice University Baker Institute, 2020), 16.

⁹³ Isaac B. Kardon, "China's Overseas Base, Places, and Far Seas Logistics," in Wuthnow et al., *The PLA Beyond Borders*.

⁹⁴ Guo Yuandan, "Chinese Navy Sees Broadened Horizon, Enhanced Ability Through 10-Year Escort Missions," *Global Times*, December 30, 2018, available at <http://www.globaltimes.cn/ content/1134066.shtml>. For the involvement of Chinese and foreign civilians in setting up a commercially based procurement arrangement in Yemen in 2009, see Li Faxin, *The Chinese Navy's Maritime Escort Operations* (Beijing: China Intercontinental Press, January 2013), 87.

⁹⁵ Escort aircraft do not usually accompany PLAAF H-6K bombers making a "patrol" around Taiwan due to their limited range and the PLAAF's limited air refueling capability.

⁹⁶ China Military Power, 71.

⁹⁷ For more on attempts by the PLA army to carve out a maritime role, including its attempt to insert itself into operations involving smaller physical features, see Ian Burns McCaslin and Andrew S. Erickson, "The Impact of Xi-Era Reforms on the Chinese Navy," in Saunders et al., *Chairman Xi Remakes the PLA*, 144.

⁹⁸ For a comparison between the range of the land-based Russian S-400 operated by the PLAAF and the ship-based SA-20 Naval SAM operated by the PLAN, see *PLA Aerospace Power: A Primer on Trends in China's Military Air, Space, and Missile Forces* (Montgomery, AL: China Aerospace Studies Institute, May 2018), 26, available at https://www.airuniversity.af.edu/Portals/10/CASI/documents/Research/PLAAF/CASI_Primer%202017.pdf». For the operation of HHQ-9 SAMs by PLAN destroyers, see IISS, *The Military Balance*, 252.

⁹⁹ So far J-15 fighters are the only aircraft that can operate from a Chinese aircraft carrier. See Rupprecht, *Modern Chinese Warplanes*, 20–21, 29. The PLAN is also reportedly building a fifth (Type-004) aircraft carrier that observers expect will be nuclear powered. Ronald O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, RL33153 (Washington, DC: Congressional Research Service, March 9, 2021), 12–13, available at <https://fas.org/sgp/crs/row/RL33153.pdf>.

¹⁰⁰ See Lonnie D. Henley, "Whither China? Alternative Military Futures, 2020–30," in *The Chinese People's Liberation Army in 2025*, eds. Roy Kamphausen and David Lai (Carlisle, PA: U.S. Army Strategic Studies Institute, 2015), 31–54; and Phillip C. Saunders, "Implications: China in the International System," in Kamphausen and Lai, *The Chinese People's Liberation Army in 2025*, 318–323.

¹⁰¹ For an assessment of economic and defense budget constraints, see Phillip C. Saunders, *A "World-Class" Military: Assessing China's Global Military Ambitions*, Testimony Before the U.S.-China Economic and Security Review Commission Hearing, June 20, 2019, available at <https://www.uscc.gov/sites/default/files/Saunders_ USCC%20Testimony_FINAL.pdf>.

¹⁰² Phillip C. Saunders and Joel Wuthnow, "Large and In Charge: Civil-Military Relations under Xi Jinping," in Saunders et al., *Chairman Xi Remakes the PLA*, 519–555.

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