Testimony before the U.S.-China Economic and Security Review Commission

Hearing on China's Military Power Projection and U.S. National Interests

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Introduction

Co-Chairs Wortzel and Fiedler, and all commissioners, thank you very much for the opportunity to testify today on China's evolving expeditionary capabilities. This is an important topic with deep ramifications for U.S. force posture, procurement and research & development investment decisions, and diplomatic relations both with China and our allies.

It is also an area of rapid change. The People's Liberation Army Navy (PLAN) is introducing new primary surface combatants and amphibious assault ships, the PLAN Marine Corps (PLANMC) has tripled in size, the PLA Air Force (PLAAF) is rapidly producing strategic airlift assets, and China established its first permanent overseas military base in Djibouti. Further, this list of achievements does not include either China's civilian and dual-use assets that may be mobilized for power projection or vast research into emerging technologies, such as artificial intelligence, electromagnetic capabilities, and directed energy weapons.

I have been asked to focus my testimony on the "nuts and bolts" of China's expeditionary capabilities. I will structure my comments to answer the following questions:

- By 2035, what is the PLA's force projection capability likely to encompass?
- How quickly can China deploy forces overseas?
- At what distance from its littoral waters can forces operate?
- What size expeditionary force is the PLA currently capable of supporting?
- How long can China sustain these deployments?
- What role do Chinese civilian organizations play in supporting the development of PLA expeditionary capabilities?

During the course of answering these questions, I will also assess how each of the PLA's services is working to develop expeditionary capabilities, how the PLA uses UN peacekeeping operations/humanitarian assistance/disaster relief (HA/DR), and counterpiracy operations to gain experience operating overseas, what the PLA's greatest shortfalls are in expeditionary capabilities, and how the military might overcomes these limitations in the future.

By 2035, what is the PLA's force projection capability likely to encompass?

The PLAN and PLAAF are undergoing a rapid modernization to address shortfalls in expeditionary capabilities, including both offensive power projection and logistics platforms. I will first discuss the PLA's enabling capabilities – logistics and replenishment assets that are often neglected in discussions of China's growing military capabilities.

The PLAN had limited replenishment and other auxiliary ships in service before 2013, when the first Type 903A replenishment ship was commissioned. Prior to 2013, the PLAN had only five total auxiliary ships in the Type 905, Type 908, and original Type 903 classes. These classes were commissioned in 1979, 1996, and 2004 respectively. During the first four years of the Gulf of Aden counterpiracy missions, the PLAN

rotated through only three ships – an era the PLA Daily referred to as the "supply ship troika." The PLA Daily noted that, "excluding regular maintenance, the three largest supply ships of the Chinese Navy at that time were always conducting escort missions."[1] The PLAN's expeditionary logistics fleet was of insufficient size to sustain overseas operations, the ships were aging, and their capabilities are limited, severely limiting the PLAN's ability to meet potential overseas demands. The two Type 905 ships were first commissioned in 1979, while the lone Type 908 is a repurposed Ukrainian cargo tanker that has reportedly seen much of its large cargo tanks (23,000 tons of total cargo; 9,630 tons of fuel cargo capacity) converted to dry storage and state rooms.[2]

Since then, the PLAN has introduced seven ships in the modified Type 903A class as well as two ships in the new Type 901 class, improving PLAN auxiliary capabilities both qualitatively and quantitatively. The Type 903A features a flight deck and hangar capable of accommodating medium-lift helicopters such as the Z-8 or newer Z-18 and increased cargo capacity over the original Type 903s. The Type 903As have become the backbone of the PLAN's Gulf of Aden task forces, accompanying 12 of 18 deployments since their introduction.

The Type 901s appear to be designed specifically for operation in the PLAN's aircraft carrier groups. According to an anonymous "Beijing-based military expert" who spoke with China's *Global Times*, the Type 901 class will allow the PLAN to deploy "farther from coastal areas into deep blue waters without having to worry about logistics."[3] Type 901 class *Hulunhu's* political commissar Ni Jingdong said on CCTV in December 2019 that the *Hulunhu* was "now fully capable of comprehensively replenishing the carrier battle group."[4] The *Hulunhu* conducted its first replenishment mission in December 2019.

The class is much larger than the Type 903A, with a length of 241 meters to the Type 903A's 178.5 (approximately 35% longer) and displacing an estimated 48,000 tons to the 903A's 23,369. The Type 901 features gas turbine engines that would enable a max speed of the claimed 25 knots, as well as its arrangement of refueling stations, with three to port and two to starboard (see Appendix A for details). This is because China's aircraft carriers have their islands to starboard; China's carriers are not nuclear powered, so require fuel for both the carriers themselves and their aircraft. As Andrew Erickson and Christopher Carlson previously noted in *Jane's Navy International*, the Type 901 class appears to be nearly identical to the USN Supply class.[5] The Type 901s do however appear to be more focused on replenishment of fuel and provisions because it has only one dry cargo delivery station compared to the Supply class's three per side (which assists with UNREP of ordnance).[6] That is an important distinction – that the Type 901s appear to be less focused on and are certainly less capable – of ordnance resupply. Jane's expects at least one Type 901 per aircraft carrier battle group, but a more likely ratio is 1.5:1 to both allow for a more sustainable operational tempo as well as the use of the Type 901s with other surface combatant and amphibious capabilities.

The increased production of Type 901 replenishment ships could be a signal that China expects the need to sustain more than two three-ship expeditionary task forces (as the PLAN currently maintains for the Gulf of Aden missions). Alternatively, because the Type 901 only has a single dry cargo transfer station on its

[1] Bei Guo Fang Wu, "PLA Navy ends era of "supply-ship troika" in its escort mission," China Military Online, August 9, 2018, http://eng.chinamil.com.cn/view/2018-08/09/content_9247256.htm
[2] Andrew Erickson and Christopher Carlson, "Sustained support: the PLAN evolves its expeditionary logistics strategy," Jane's Navy International, March 9, 2016, https://janes.ihs.com/Janes/Display/jni77511-jni-2016
[3] Ibid.
[4] Ibid.
[5] Ibid.
[6] Ibid.

port and starboard sides, the U.S. should monitor whether China introduces any new Type 901 variants that contains additional capabilities for dry cargo transfer, as these could be used for UNREP of ordnance.

In terms of expeditionary combat capabilities, the PLAN of 2035 can be expected to include up to 25 Type 052D and 10-12 Type 055 destroyers, 2-4 additional aircraft carriers, and at least 6-8 Type 075 landing helicopter docks (LHD), in addition to older assets, including 28 Type 054A frigates, 8-10 Type 071 amphibious assault ships, 15 Type 072A amphibious warfare ships, among other classes. A follow-on to the Type 054A frigates may be expected by 2035 as well (named the Type 054B or adopting a new Type moniker), potentially incorporating Chinese advances in integrated electrical propulsion systems. These new ship classes significantly expand the PLAN's surface warfare and expeditionary amphibious capabilities:

- The Type 052D significantly improved over the Type 052C design by replacing the eight six-cell vertical SAM launchers with two grids of universal vertical launch systems (VLS), with 32 cells forward and 32 midships, capable of launching surface-to-air (SAMs), surface-to-surface (SSMs), and anti-submarine missiles. During exercise Sea Guardian 2020, the *Yinchuan* was identified as fitted with an anti-ship missile countermeasure system that appears similar to the USN Mk 59.[7]
- The first Type 055 Renhai-class destroyer was commissioned into the PLAN North Sea Fleet just over a month ago on 12 January 2020. The Type 055 is the largest surface combatant yet commissioned by the PLAN at approximately 25% larger than the Type 052D on which it derives. It is equipped with 112 VLS cells and has significantly upgraded anti-submarine warfare (ASW) capabilities – an area in which the PLAN has been notably deficient – meaning that two ships of the class may operate in each carrier strike group.[8] Both the Type 055 and Type 052D can be expected to form the core of the PLAN's future carrier strike groups.
- The PLAN's Type 001 and Type 002 aircraft carriers are relatively unlikely to be used in an expeditionary role outside China's near seas. Instead, the PLAN will likely wait for an indigenous Type 003 aircraft carrier with catapult-assisted take-off but arrested recovery (CATOBAR) – reportedly a locally developed Electromagnetic Aircraft Launch System (EMALS). This would allow it to launch fighters with heavier payloads and more fuel for longer range strike options.
- The introduction of the Type 075, in combination with 8-10 Type 071s, could allow for an effective equivalent to the U.S. Marine Expeditionary Unit (MEU), as has been previously argued before the committee.[9] The PLAN launched its first Type 075 in September 2019, which is likely to enter service in 2020 or early 2021. Jane's identified a third Type 075 LHD under construction at the Hudong-Zhonghua shipyard in Shanghai in November 2019. A three-ship package as described above could include approximately 36 helicopters, approximately ten LCACs, and likely more than 30 amphibious IFVs for amphibious operations. An MEU-style contingent of a Type 075 LHD, Type 071 LPD, and Type 072A (or similar) could contain approximately 35 helicopters (thanks to the Type 075's 30 helicopters), 50 Type 05 amphibious vehicles, and ten Type 726 landing craft air cushions (LCACs), as well as over 2,000 marines and sailors. This would allow the PLANMC to conduct land operations, including noncombatant evacuation operations (NEO), humanitarian

[7] Andrew Tate, "Chinese Type 052D destroyer fitted with possible anti-ship missile decoy launchers," Jane's Defence Weekly, January 21, 2020, https://janes.ihs.com/Janes/Display/FG_2650465-JDW
[8] Ridzwan Rahmat, "Power projection: China sharpens its carrier strike capabilities," Jane's Navy International, August 15, 2018, https://janes.ihs.com/Janes/Display/FG_1002420-JNI
[9] Christopher Yung, "China's Expeditionary and Power Projection Capabilities Trajectory: Lessons from Recent Expeditionary Operations," U.S.-China Economic and Security Review Commission, January 21, 2016, https://www.uscc.gov/sites/default/files/USCC%20Testimony%202016_Yung.pdf

assistance/disaster relief (HA/DR), and limited counterinsurgency operations without the need for forward, ground-based stationing of weapons and supplies.[10]

- It is also likely that the PLAN will begin to incorporate unmanned assets into its expeditionary force structure. An equivalent of the Leidos/US Marine Corps' Marine Warfighting Laboratory autonomous beach landing capability should be expected, as should additional work on the Wuchang Shipbuilding Industry Group's unmanned amphibious assault vehicle, the Marine Lizard.[11] [12]

In addition to PLAN expeditionary capabilities, the introduction of the PLAAF's Y-20 should significantly improve China's strategic airlift – another notable area of deficiency – to allow for rapid response to limited contingencies overseas. A 2016 PLA Daily article noted that "In the future, long-range combat areas will mostly be located in global 'public domain frontiers' far from the country… In recent local wars, the U.S. military was the first to call an airlift unit to deliver troops, and its forces were about 20 times the speed at sea."[13]

The PLAAF's strategic airlift and tanker capabilities have been limited. The PLAAF acquired ten Il-76MD strategic transport aircraft between 2012 and 2015 as well as three Il-78 tankers from Ukraine between 2011 and 2016, augmenting the limited fleet of H-6U/DU tankers.[14] These capabilities should be considered short-term stop-gaps, however, with the Y-20 and its tanker variant constituting the long-term core of PLAAF expeditionary capabilities. The China National Defense University's Center for Economic Research's 2014 "Chinese Military and Civilian Integration Development Report" recommended the PLAAF acquire up to 400 Y-20s. Jane's estimated in late 2018 that the PLAAF could have up to 70 strategic lift assets by 2025, including 18 Il-76s, with 100+ Y-20s possible by 2030.[15] The PLAAF's 13th Transport Division is likely to receive the next set of Y-20s. In terms of tankers, the PLAAF was previously reliant on 20 H-6U and three Il-78 tankers, while the PLANAF had converted several H-6D aircraft into tankers. H-6Us are capable of offloading 18.5 metric tons of fuel out of a total of 37 metric tons carried, while the Y-20 is estimated to have a maximum payload of 66 metric tons.[16] Jane's identified a Y-20 tanker variant with an underwing inflight refueling pod a the primary XAC factory in 2018.[17] While the use of underwing and rear refueling pods is similar to the Il-78 and A400M, a longer-term solution is likely the integration of the refueling platform inside the fuselage, similar to the USAF KC-767.

Overall, the PLAN and PLAAF will have substantially improved forces by 2035 but are unlikely to have sufficient numbers to sustain a protracted overseas campaign. Instead, the PLAN and PLAAF's projected force structure suggests a focus on the protection of its overseas investments: physical infrastructure (particularly through the Belt and Road Initiative), strategic sea lanes, and overseas nationals. The

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[10] Ibid.

[11] Christopher P Cavas, "No hand at the helm: US Navy pushes ahead with unmanned surface vessel development," Jane's Navy International, December 13, 2019, https://janes.ihs.com/Janes/Display/FG_2593207-JNI

[12] Huang Panyue, "China builds world's first armed amphibious drone boat that can lead land assault," Global Times, April 15, 2019, http://english.chinamil.com.cn/view/2019-04/15/content_9477847.htm

[13] Bin Bin Wang Shengli, 现代战争优势战斗力的来源：强大的空中战略投送能力 ["The Source of the Superior Fighting Power of Modern Warfare: Strong Air Strategic Projection Capability"], PLA Daily, June 12, 2016, http://www.81.cn/kj/2016-06/12/content_7095608.htm.

[14] Craig Caffrey and Sean O'Connor, "China focuses on strategic airlift to support power projection," Jane's, November 6, 2018, https://janes.ihs.com/Janes/Display/FG_1205576-JIR.

[15] Richard D. Fisher Jr. and James Hardy, "China's NDU recommends 400-strong Y-20 fleet," Jane's, July 28, 2014, https://janes.ihs.com/Janes/Display/jdw56045-jdw-2014

[16] Craig Caffrey and Andrew Tate, "Possible Y-20 tanker variant spotted," Jane's Defence Weekly, November 21, 2018, https://janes.ihs.com/Janes/Display/FG_1291534-JDW

[17] Andreas Ruprecht, "Image shows possible PLAAF Y-20 tanker variant in flight," Jane's, October 28, 2019, https://janes.ihs.com/Janes/Display/FG_2423377-JDW.

PLAAF's expeditionary capabilities are nascent with a limited carrier strike capability, few fifth-generation fighters or bombers capable of operating in contested environments. A more robust strategic airlift fleet by 2035 should allow the service to rapidly respond to limited contingencies by 2035, but it is unlikely to be capable of conducting sustained offensive operations.

How quickly can China deploy forces overseas?

The PLAN has important domestic bases for expeditionary operations at Zhanjiang, where the South Sea Fleet, including the 2nd Destroyer Flotilla, the 1st and 2nd Marine Corps Brigades, and the 6th Landing Ship Flotilla are located, as well as at Yulin Naval Base, where the 9th Destroyer Fleet is located. The first Y-20 fleet is located at Chengdu-Qianglai, while one of the three bases from the 13th Transport Division is reportedly set to receive the next set.

The speed of a PLAN overseas deployment would be limited by the slowest ship in its task group, which will often be the Type 903A (at 19 knots). Based on available open source data, an uninterrupted journey to the middle east (approximately 5,400 nautical miles) averages approximately two weeks of transit time.

Chinese analysts note that strategic airlift allows for a rapid response to overseas contingencies. The PLAAF will likely rely on civilian airfields to project its Y-20s, although a future logistics port that is collocated with an airfield capable of supporting strategic lift aircraft would be beneficial.

At what distance from its littoral waters can forces operate?

The Type 903A can support 2-3 ships for approximately two weeks before needing replenishment. This suggests that PLAN ships are currently capable of operating for approximately two weeks of sailing time from the Djibouti Logistics Base (i.e., around the Horn of Africa or in the Mediterranean) before requiring replenishment. Without guaranteed access to a friendly civilian port or establishing a military base in the Pacific, PLAN vessels would be capable of operating a similar distance in the Pacific (approximately half of 5,400 nautical miles to ensure supplies for the return journey home).

The PLAN has previously used five replenishment models to extend its overseas operations. The baseline estimate above (of approximately two weeks of sailing time) is assuming only a single accompanying Type 903A or Type 901 replenishment ship on non-combat operations. After two weeks or with combat operations, the replenishment ship would require external support via underway replenishment (UNREP) or by docking and resupplying in a foreign civilian or military port.

Second, the PLAN has frequently used civilian ports for replenishment during Gulf of Aden task force missions and en route to overseas exercises, including ports in Djibouti, France, Greece, Indonesia, Italy, Oman, Pakistan, Portugal, Saudi Arabia, Singapore, South Africa, Spain, Sri Lanka, and Yemen. The PLAN likely uses these visits to expand its soft power, often choosing countries with which it has important non-military diplomatic and/or economic goals.

Following China's 2013 participation in the international community's destruction of Syrian chemical weapons, Colonel Cao Weidong of the Naval Academy of Military Research noted that, "Moreover, in the Mediterranean region, China Ocean Shipping Group (COSCO) has a lot of supply points, which provide daily services for civilian ships. Chinese naval warships can also enter the port for supply."[18]

Third, in November 2019, China's Ministry of National Defense reported that the PLAN had successfully tested underway replenishment (UNREP) from a civilian container ship, the COSCO *Fuzhou*. The MoD's

[18] 中国参与叙化武销毁行动 海军赴地中海护航, Jiadong News, December 20, 2013, http://www.jiaodong.net/news/system/2013/12/20/012136191.shtml.

report concluded that, "Using civilian ships to carry out UNREP for naval ships is a new attempt in the field of naval logistics support. The civilian vessels cover a wide range of routes, thus have large potential for replenishment at sea, which implies remarkable military economic benefits. The success of the test provides important technical support for the future development of underway replenishment control technology."[19]

The MoD reported on the UNREP test on 21 November 2019. According to open source ship tracking data, the *Fuzhou's* last port call was at Dar es Salaam, Tanzania, between 15 and 18 November. Over the last three months the *Fuzhou* also visited Mombasa Port, Kenya, in addition to locations in Singapore and China.[20] It is likely that the PLAN will continue to employ UNREP from civilian ships – particularly COSCO ships – in the future. While another panelist will concentrate on basing, it is likely that the PLAN could use COSCO terminals worldwide not as future formal military resupply bases, but as dual-use nodes in a largely civilian port (and airport) network that serves the PLA in an expeditionary capacity.

COSCO has the third-largest fleet in the world with over 1,318 vessels and over 53 container terminals, with 197 container berths in 37 ports worldwide, and is actively looking for new terminals for expansion.[21] Its container ships have global routes between, with notable transit routes that link strategically important ports in Port Klang, Malaysia, Djibouti Port, Djibouti, Karachi, Pakistan, Gwadar, Pakistan, Port Qasim, Pakistan, Jakarta Port, Indonesia, and Colombo, Sri Lanka, among many others.[22]

Jane's has previously noted that the reason for the PLAN's requirement for additional "ships taken up from trade" is unclear. It suggests that the PLAN forecasts the need to support multiple task groups on extended or distant operations beyond its existing capacity of replenishment ships. It also suggests that the PLAN does not anticipate expanding its capacity of embarked helicopters, as these may otherwise be capable of conducting vertical replenishment of solid stores.[23] As the PLANMC and PLAN are likely competing with the PLA ground forces for troop transport and assault helicopters, China's amphibious assault capabilities will likely remain substandard for the next 5-10 years despite the introduction of the Type 075 LHD. Chinese media reports highlighted solid store replenishment during civilian UNREP, and photographs of the transfer showed only a small-bore hose, which suggests a slow fuel transfer rate comparable to astern refueling rather than that of a conventional refueling at sea rig.[24] Finally, civilian UNREP is more likely for task forces that do not include the Type 901. The Type 903A has a relatively limited solid cargo capacity; its total cargo capacity is 11,400 tons, but supports 10,500 tons in fuel alone.

Fourth, the PLAN could use already-deployed military assets in a "replenishment relay" model. En route to the "Joint Sea 2017" exercise in St. Petersburg in July 2017, a Type 052D destroyer and Type 054A frigate received fresh drinking water and fuel from a Type 903A replenishment ship in the Indian Ocean. The PLA Daily referred to this as a "replenishment relay" or "mobile supply point". According to a Chinese military expert interviewed by the PLA Daily, "the amount of supplies it carries is limited and not capable of meeting the needs of the other two warships for fuel, fresh water and other supplies during the one-month-long voyage," which is approximately twice the length as the trip from China to the Gulf of Aden.[25] The expert

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[19] Xu Yi, "Civilian ship debuts underway replenishment to PLA naval ships," China Military Online, http://eng.mod.gov.cn/news/2019-11/21/content_4855357.htm

[20] "COSCO Fuzhou," My Shipping Now, https://www.myshiptracking.com/vessels/cosco-fuzhou-mmsi-477690800-imo-9403009

[21] "Group Profile," China COSCO Shipping Corporation Limited, http://en.coscocs.com/col/col6918/index.html; "Interim Report 2019: Gearing Up for Growth," COSCO Shipping Ports Limited, 2019, https://doc.irasia.com/listco/hk/coscoship/interim/2019/intrep.pdf.

[22] "Routes," COSCO Shipping Lines Co, http://lines.coscoshipping.com/home/Services/route/14.

[23] Andrew Tate, "PLAN trials underway replenishment from commercial ships," Jane's Defence Weekly, November 20, 2019, https://janes.ihs.com/Janes/Display/FG_2438028-JDW

[24] Ibid.

[25] Li Jiavao, "Chinese navy establishes "mobile supply point" in Indian Ocean," China Military Online, July 10, 2017,

continued that, "It is a useful exploration for the Chinese navy to take advantage of its escort taskforce in the Gulf of Aden to conduct front-end replenishment for Chinese warships passing by this water, which will be of great help for Chinese navy's similar ocean-going operations in the future."[26]

Finally, the PLA could develop additional overseas military bases similar to the existing logistics base in Djibouti.

What size expeditionary force is the PLA currently capable of supporting?

The PLA is likely currently capable of supporting two MEU-like ship packages at once for roughly six-month deployments, assuming limited-to-no combat operations. Resupply during combat operations would currently be dependent on access to the existing network of civilian ports and airports that the PLAN and PLAAF have used on past operations and exercises. Until 2025, these forces will likely resemble Gulf of Aden task force packages. The Type 903A replenishment ship and Type 054A frigate have been constants (particularly the Type 054A, which has accompanied every deployment since 2013), allowing for experimentation with both various logistics models and with a third rotating surface combatant (see Appendix B). The latter surface combatant has included everything from a Type 052D Luyang III guided missile destroyer, second Type 054A frigate, to a Type 071 amphibious assault ship. For example, the 34th deployment left on 23 December 2019 and included a Type 052D destroyer, Type 054A frigate, and Type 903 replenishment ship, with two embarked helicopters, "dozens of special operations personnel" and more than 690 troops.[27] The Type 052D destroyer and Type 071 amphibious assault ships in particular are more than overkill for the threat that the task forces face in the Gulf of Aden.

The PLAN will gradually introduce its new Type 075 LHDs (and potentially its Type 055 destroyers) into overseas missions to gain operational experience as well. By 2030 we are likely to see the emergence of a force package closer to an MEU, containing at least a Type 075 LHD and Type 071 amphibious assault ship, as well as a replenishment ship or two, depending on the number of amphibious assault ships in the task force. This amphibious force would give China a rapid-reaction capacity to respond to contingencies at its overseas investments, particularly its most important Belt and Road Initiative (BRI) sites.

For example, Mollie Saltskog and Colin P. Clarke have argued in *Foreign Affairs* that "terrorism has come to pose a growing threat to Chinese interests and nationals abroad… In 2019, terrorist organizations such as al Qaeda and ISIS explicitly mentioned China in many of their propaganda materials—citing the CCP's abuse of Muslim minorities as a justification for going after China and Chinese nationals."[28] The threat of terrorism led the PLA Daily in 2017 to mention that PLANMC marines could be deployed to Gwadar port to protect it from terrorist threats. Therefore, China's development of an expeditionary amphibious capability could be directly linked to the protection of BRI sites and concentrations of overseas Chinese nationals from terrorism.

How long can China sustain these deployments?

The PLAN's expeditionary capabilities through 2025 are likely to be capable of relatively similar deployments as have been achieved on Gulf of Aden missions. These missions have consistent in tempo, duration, and composition. The PLAN consistently maintains the concurrent deployment of two Gulf of

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http://eng.chinamil.com.cn/view/2017-07/10/content_7671106.htm

[26] Ibid.

[27] 第34批护航编队起航 ["The 34th escort formation set off"], People.com.cn, December 24, 2019, http://military.people.com.cn/n1/2019/1224/c1011-31520270.html.

[28] Mollie Saltskog and Colin P. Clarke, "China's Rights Abuses in Xinjiang Could Provoke a Global Terrorist Backlash," Foreign Affairs, January 16, 2020, https://www.foreignaffairs.com/articles/china/2020-01-16/chinas-rights-abuses-xinjiang-could-provoke-global-terrorist-backlash

Aden task forces, with new departures leaving approximately every four months and the typical deployment lasting approximately 209 days (nearly seven months).

Using that information, we can estimate that non-combat deployments of approximately 7-8 months are currently feasible in the Middle East, Indian Ocean, and east coast of Africa.

Combat operations would currently be difficult to sustain for more than two weeks because of the lack of prepositioned ordnance at the PLAN's overseas logistics nodes as well as the limited capabilities that PLAN replenishment ships have for dry cargo delivery. For example, the U.S. Navy's Supply class has three dry cargo delivery stations on both port and starboard sides, while the Type 901 has only one, reflecting a likely focus on the delivery of fuel and provisions over ordnance. Further, prepositioning ordnance would be unlikely at foreign civilian facilities, requiring the PLA to stockpile munitions at its lone dedicated military base.

What role do Chinese civilian organizations play in supporting the development of PLA expeditionary capabilities?

In 2015 China released several documents and sets of standards intended to improve the integration of civilian capabilities into military operations if required. These included the "Technical Standards for the Implementation of National Defense Requirements for Newly Built Civil Ships," "Regulations on National Defense Mobilization of Civil Transport Capacity," and the "National Defense Traffic Law." These apply to container, roll-on/roll-off, multipurpose, bulk carrier and break bulk ships.[29] These standards were reportedly based on the experience of the United Kingdom during the Falklands War.[30]

As previously mentioned, China has tested UNREP from civilian ships from COSCO. Of COSCO's more than 360 container ships, 64 can both transport over 10,000 Twenty-Foot Equivalent Units (TEUs) and travel at more than 20 knots (for comparison, PLAN Type 903As and Type 901s are capable of top speeds of 19 and 25 knots, respectively).[31]

Many other companies have also been integrated into the PLA's potential expeditionary capabilities. For example, the the Bohai Ferry Group has 11 roll-on / roll-off (RO-RO) ships that have been integrated into the strategic support ship fleet. Recently built ships, such as the *Bohai Cuizhu* have been explicitly built to military specifications.[32] In February 2018, the Wuxi JLSC practices transporting ammunition on a civilian RO-RO. [33]

Authors Liu New and Su Chunhua have argued that, "In recent years, China has advocated and proposed the 'Belt and Road' strategy, and urgently requires military forces to 'go out' in a peaceful posture to provide a strong guarantee for the expansion of China's overseas interests… Due to the limited number of equipment required for these military operations, it is often difficult to find suitable cargo ships or ro-ro ships

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[29] Xiong Huaming, 如何让民用船舶助力军事运输？["How can civilian ships help military transportation?"], China National Defense Network, May 24, 2019, http://www.81.cn/gfbmap/content/2019-05/24/content_234451.htm.

[30] Zhao Lei, "New rules mean ships can be used by military," ChinaDaily.com.cn, June 18, 2015, http://www.chinadaily.com.cn/china/2015-06/18/content_21036944.htm.

[31] Data compiled from "COSCO Shipping Lines VESSELS," COSCO Shipping Lines, http://lines.coscoshipping.com/home/Services/ship/0.

[32] 李鹏, 孙浩, 赵喜庆 [Li Peng, Sun Hao, Zhao Xiqing], 国家战略投送能力发展对合成部队建设的影响与对策 ["Impact of National Strategic Delivery Capability Development on Construction of Synthetic Forces and Countermeasures"], 军事交通学院学报 [*Journal of Military Transportation University*], no. 8 (2019), quoted in Kennedy, "China Maritime Report No. 4"

[33] Department of Defense, "Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019", Office of the Secretary of Defense, May 2, 2019, https://media.defense.gov/2019/May/02/2002127082/-1/-1/1/2019_CHINA_MILITARY_POWER_REPORT.pdf

for short periods of time, which affects the completion of military operations, while container ships have stable schedules, high speeds, and long sailing times… [I]f military equipment can be transported in containers, container ships will surely become the preferred tool for overseas transportation of military equipment."[34]

Chinese military analysts have studied U.S. container-based multimodal transport, with Yuan Mu and Liu Baoxin noting that, "The supply of U.S. military supplies and equipment abroad mainly relies on container multimodal transport from home to foreign military bases," and estimating that 90% of U.S. military materials are transported in containers. The authors recommend that the PLA develop a "strong military-civilian integrated container transport capacity" and advanced technologies, including self-loading and unloading technologies at the point of delivery in the field.[35] Another Chinese news article argues that China should leverage its civilian container ships because of the wide variety of routes they operate on, which offer a "great potential for building maritime supply forces and has significant military economic benefits."[36]

Similar to the PLAN, the PLAAF has organized "strategic air support fleets", which are particularly important in the short term given the PLAAF's limited strategic lift capabilities. Chinese authors argue that "Air strategic projection capabilities can promote military-civilian integration. Air strategic projection is the largest integration of national air transport capacity. It is manpower-intensive, technology-intensive, and capital-intensive. It is difficult for the military itself to form a 'strategic' level of delivery capability. Therefore, it is necessary to rely on the entire national system to promote the organic use of military and civilian transportation Integration."[37] Chinese experts within the Chinese Army Military Transportation University estimate that China will have approximately 8,000 civilian passenger aircraft and over 2,600 cargo aircraft by 2035, up from 3,160 total passenger aircraft and only 143 medium and large civilian cargo aircraft today.[38]

China Postal Airlines (which has 33 cargo aircraft) has support PLAAF operations through prior humanitarian assistance missions, but also participated in a strategic combat readiness exercise in September 2017.[39] [40]

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[34] Liu New and Su Chunhua, 军事装备的水路集装箱运输研究 ["Research on Waterborne Container Transportation of Military Equipment"], 物流技术与应用, https://www.ixueshu.com/document/55ec50dd5050528abafae32faf5e676f.html.

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[37] 现代战争优势战斗力的来源：强大的空中战略投送能力, ["The Source of the Superior Fighting Power of Modern Warfare: Strong Air Strategic Projection Capability"], PLA Daily, June 12, 2016, http://www.81.cn/kj/2016-06/12/content_7095608.htm

[38] 孙振岚, 海军 [Sun Zhenlan, Hai Jun], 我国民航运输业建设 现状与未来发展 ["On the Present Situation and the Future Development of the Construction of the Civilian Aviation Transportation in China"], 2019, 国防交通工程与技术 [*Traffic Engineering and Technology for National Defence*], no. 1, quoted in Kennedy, "China Maritime Report No. 4".

[39] Kennedy, "China Maritime Report No. 4"

Conclusions

I have three primary conclusions about the current and future state of China's expeditionary capabilities:

1. **The PLA is still in the early stages of its development of expeditionary capabilities and will struggle to sustain kinetic operations overseas until approximately 2030.**
2. **China's primary motivation in developing expeditionary capabilities is likely to protect their overseas economic investments, particularly through the Belt and Road Initiative. Its growing amphibious capabilities and the expansion of the PLANMC are largely related to this concern.**
3. **The rapid expansion of PLAN replenishment ships, an increase in their ability to transport solid cargo, an increase in helicopters available to the PLAN and PLANMC, and/or the pre-positioning of ordnance overseas are liminal moments for Chinese expeditionary ambitions and capabilities.**

First, despite the PLAN and PLAAF's rapid modernization of expeditionary combat capabilities, it is important for the United States not to overinflate its assessment of China's conventional power projection capabilities. The PLA's expeditionary combat capabilities are still nascent in terms of platforms and in both doctrine and experience, to effectively employ these new capabilities. The overall projected size of the PLAN in does not yet suggest the intention to fight and win expeditionary wars against a peer or near-peer. Further, the PLAAF is still only in the early stages of correcting its long-standing deficiencies in strategic airlift and tankers.

Second, at least until approximately 2030, China is prioritizing (1) the ability to impose unacceptable costs on the access or freedom of maneuver within its near-abroad, (2) the ability to contribute to international commons operations (that is, fulfilling the perceived responsibilities of a great power, as Chinese-language reports on China's Gulf of Aden participation frequently mention[41]), and (3) defending its overseas economic interests related to the BRI – in terms of both infrastructure investments and personnel. The potential for an increase in terrorist activity targeting Chinese facilities and personnel is likely to be a major driver of PLA expeditionary combat operations through 2030.

Third, the United States should nevertheless understand that China's expeditionary operations provide it with incredibly valuable experience and opportunities to develop concepts of operation and expeditionary doctrine. The U.S. should monitor for signs that China's goals have shifted. The United States should continue to monitor the composition of China's expeditionary task forces. The deployment of the PLAN's new Type 075 LHD or Type 055 destroyer, or of the Type 901 replenishment ship should be of interest to U.S. observers. The pre-positioning of ordnance at its Djibouti logistics base – or at any other overseas logistics node – should also be interpreted as a liminal point in China's expeditionary ambitions. The U.S. should expect China to pursue access to civilian airfields as the PLAAF's fleet of Y-20s grows and it becomes increasingly involved in overseas operations.

[41] 亚丁湾上的中国担当 ["Chinese role on the Gulf of Aden"]. PLA Daily. December 24, 2019. http://military.people.com.cn/n1/2019/1224/c1011-31520247.html

Recommendations to Congress

Based on those conclusions, a few recommendations follow:

1. **While China's expeditionary capabilities, doctrine, and experience are still limited, the U.S. should recognize the revolutionary potential of China's pursuit of emerging defense technologies and weapons systems. The U.S. should increase its investment in basic science research and applied R&D in these areas of emerging technology to counter any potential Chinese advances.**
2. **The U.S. should closely monitor China's human rights record abroad, particularly in its use of mass surveillance technologies as China attempts to expand its global footprint.**
3. **The U.S. should bolster its non-military tools – principally diplomatic and economic – to engage with countries in which China develops an overseas presence.**

First, given the relative imbalance of expeditionary capabilities between the U.S. and China at least through 2030, the United States should monitor the PLA's continued pursuit of asymmetric and emerging defense technologies such as unmanned and autonomous systems, artificial intelligence more broadly, offensive cyber capabilities, quantum capabilities, and directed energy weapons – among others. These advanced weapons systems allow for the possibility that China could impose significant costs on adversaries disproportionate to the number of physical platforms it possesses. The U.S. must continue to increase its investment in all forms of research and development that will allow it to compete in these areas of emerging technology.

Second, the United States should closely monitor China's human rights record overseas. A 2019 *New York Times* report noted that, "Under President Xi Jinping, the Chinese government has vastly expanded domestic surveillance, fueling a new generation of companies that make sophisticated technology at ever lower prices. A global infrastructure initiative is spreading that technology even further… With China's surveillance know-how and equipment now flowing to the world, critics warn that it could help underpin a future of tech-driven authoritarianism, potentially leading to a loss of privacy on an industrial scale."[42] 18 countries are already using Chinese intelligence monitoring systems. The United States should be aware of the potential for China to export and implement its mass surveillance systems in countries that are a part of the PLA's growing overseas logistics network. The U.S. should set the example worldwide against the use and spread of surveillance systems that further authoritarian tactics and regimes by exploring international agreements to prevent their adoption.

Third, as an analyst argued in the *South China Morning Post*, "bigger supply ships were no substitute for more overseas bases when it came to supporting the expanding mission of China's naval fleets."[43] While China may principally rely on civilian and dual-use facilities as it grows its expeditionary capabilities, China may increasingly pursue overseas military bases after approximately 2030. The U.S. should engage with these countries using its non-military tools.

[42] Paul Mozur, Jonah M. Kessel and Melissa Chan, "Made in China, Exported to the World: The Surveillance State," The New York Times, April 24, 2019, https://www.nytimes.com/2019/04/24/technology/ecuador-surveillance-cameras-police-government.html
[43] Viola Zhou and Sarah Zheng, "China commissions new naval supply ship," August 1, 2017, https://www.scmp.com/news/china/diplomacy-defence/article/2105010/china-commissions-new-naval-supply-ship

Appendix A

Platform	In service (Planned)	Delivery	Max Speed	Tonnage	Fueling Stations	Fuel capacity	Total cargo	Helicopters
Type 901	2 (4-8)	2017	25 kt	48,000	3P/2S	20,000	25,000	2 Z-8 / Z-18
Type 903/903A	9 (9)	2004	19 kt	23,369	1P/1S	10,500	11,400	1 Z-8 / Z-18
Type 908	1 (1)	1996	16 kt	37,594	2P/2S	9,630	23,000	1 Z-8
Type 905	2 (2)	1979	18 kt	22,099	2P/2S	12,000	12,500	1 medium
Type 904A/B	3 (3-7)	2007	~22 kt	15,241		10,550		1 medium

Figure 1: PLAN replenishment ships. Data compiled from Jane's Fighting Ships

Appendix B

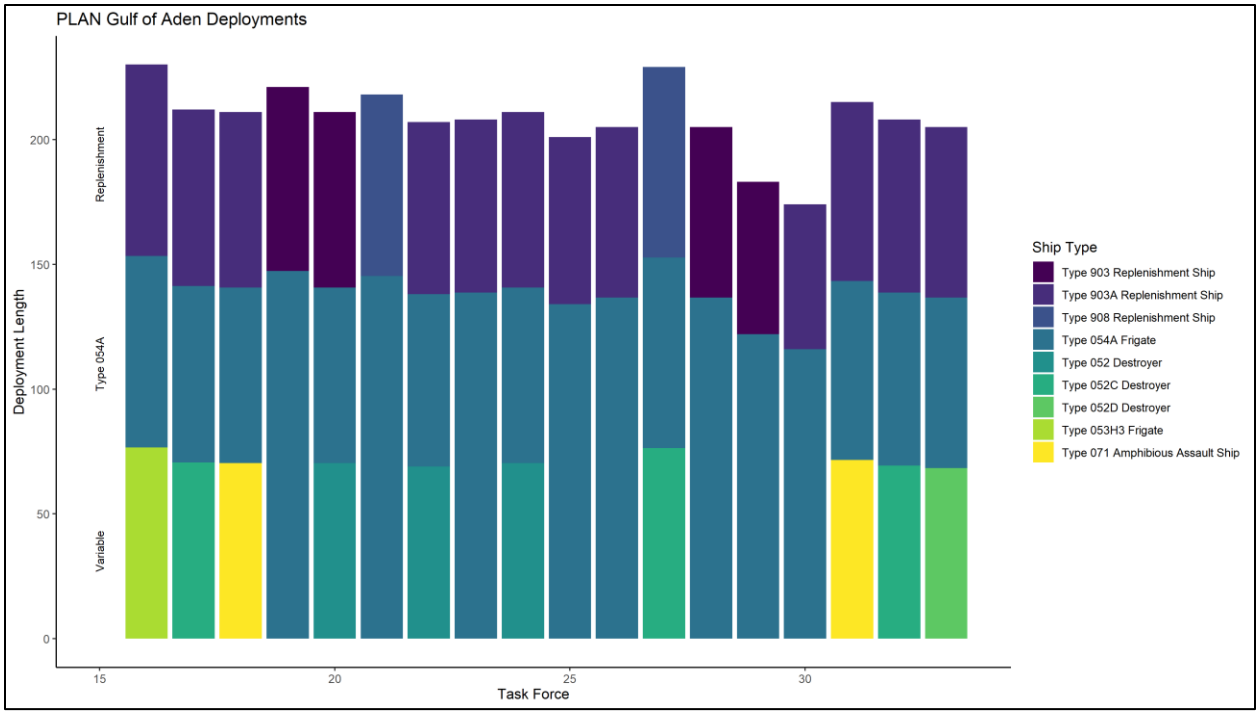

Figure 2: PLAN Gulf of Aden Task Force deployments by deployment length. Bar color refer to the ship composition of each task force. The Type 054A frigates have accompanied each of the last 13 deployments dating back to mid-2015, while Type 903 and Type 903A replenishment ships have joined all but two of the last 13 task forces. Note that exact deployment lengths for the 18th, 20th, 26th, 28th, and 33rd task forces were estimated based on previous missions. Data in chart compiled primarily from chinamil.com.cn.