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China Maritime Report No. 45: The PLA Navy's Hospital Ship Fleet: Concerns, Developments, and Future Prospects

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Main Findings

- The PRC's hospital ship ecosystem comprises at least 17 vessels. The People's Liberation Army Navy (PLAN) operates 13 ships, while the state ship building sector has developed (or is developing) at least four civilian hospital ships for domestic and foreign clients.
- PLAN hospital ships serve two main missions: (1) Provide medical support to PLA personnel, especially those stationed around the mainland or on Chinese-occupied islands in the South China Sea. (2) Support maritime global health engagement, chiefly through missions conducted by the *Peace Ark* hospital ship.
- Almost a third (21) of the *Peace Ark*'s 71 port visits since 2010 have been in Melanesia and East Africa. A further fifth (12) of all visits have been to ports in the northeast Indian Ocean and West Africa. The launch of the *Silk Road Ark* in 2023 may increase the PRC's maritime global health engagement capacity in the coming years.
- In the event of a conflict, some PLAN hospital ships would not be in compliance with international conventions on the proper identification and uses of these vessels. They lack the required markings, potentially possess armaments, or are not exclusively used as hospital ships. This could complicate the decision making of China's opponents, especially during wartime.
- China's private sector construction of hospital ships could potentially provide the PRC with the skills and knowhow to rapidly expand the PLAN's hospital ship fleet during a conflict.
- U.S. Navy planners should consider how the PLAN may use its hospital ships in a conflict and how these vessels may link with other humanitarian activities seen in these settings, such as maritime humanitarian corridors, exchange of prisoners, or civilian humanitarian capabilities.

Introduction

In July 2024, the People's Republic of China (PRC) announced that its new Type 920 hospital ship—the *Silk Road Ark*—was conducting its first named medical mission to People's Liberation Army (PLA) positions in the Paracel (Xisha) and Spratly (Nansha) Islands in South China Sea.¹ This action came 15 years after its sistership, the *Peace Ark*, conducted its first mission to the same islands.² At that time, several researchers examined the development of the PLA Navy's (PLAN) hospital ships, above all Peter W. Mackenzie, who released his seminal report “Red Crosses, Blue Water: Hospital Ships and China's Expanding Naval Presence in 2011.”

But since that time, there has not been another comprehensive look at the PRC's hospital ship ecosystem aside from individual case studies focused on the *Peace Ark*, or larger works that include discussion of how this vessel supports the PRC's maritime global health engagement.³ This report

¹ Zheng Caixiong, “Navy's Hospital Ship Heads Out for Rescue Drills, Medical Aid in South China Sea,” *China Daily*, 11 July 2024, <https://www.chinadaily.com.cn/a/202407/11/WS668fcadaa31095c51c50da3e.html>; and Culi Xiaohou, “Largest Hospital Ship Tests Its Mettle,” *China Daily*, 24 March 2009, http://www.chinadaily.com.cn/china/2009-03/24/content_7608338.htm.

² Peter W. Mackenzie, “Red Crosses, Blue Water: Hospital Ships and China's Expanding Naval Presence,” *Center for Naval Analyses (CNA Corporation)*, September 2011, p. 15, <https://apps.dtic.mil/sti/pdfs/ADA552566.pdf>.

³ For examples of relevant studies, see Loro Horta, “China's Peace Ark: Building Bridges with Pacific Island Nations,” *S. Rajartnam School of International Studies (RSIS) Commentary No. 153*, October 2023, <https://www.rsis.edu.sg/wp-content/uploads/2023/10/CO23153.pdf>; Mike Karlson, “The Global Pandemic and Humanitarian Competition,” *Liaison*,

aims to fill this gap by using open-source data to provide an updated overview of the PRC's hospital ship ecosystem, which has developed to at least 17 vessels over the past 15 years.⁴ It seeks to provide a current baseline of information to allow researchers and planners alike to gain deeper insights into the extent of the PRC's expanding hospital ship ecosystem and what the implications of this may be during this era of strategic competition.

This report is divided into five sections. First, it defines hospital ships, differentiating them from other classes of warships. Section two introduces the 17 PRC vessels identified in this study, while section three examines trends in how the PRC uses these ships as well as the potential wartime concerns with some of the PRC's hospital ships. The report concludes with a summary of the main findings. An appendix outlining details of each vessel discussed in the study, as well as the methods and data used, make up the final section of this report.

What Are Hospital Ships?

Hospital ships occupy a specific legal space compared to other classes of warships. During peacetime, hospital ships can be defined as any entity sees fit. However, during conflict, their parameters must conform to international law, above all articles of the Second Geneva Convention of 1949.

- The ship must be specifically and solely used to assist the wounded, sick, and shipwrecked regardless of nationality.
- The ship may not be used to commit acts harmful to the enemy for the duration of hostilities, even if they cease to be used as hospital ships.
- The ship's religious, medical, and hospital personnel and their crew shall be respected and protected. They may not be attacked or captured, except under very strict conditions.
- All ship exterior surfaces must be painted white, with one or more dark red crosses displayed on the sides and horizontal surfaces, and a white flag with a red cross flown at the mainmast.
- The ship's name and description must be notified to all parties to a conflict at least 10 days before they are deployed.⁵

These parameters were developed at the First Hague Peace Conference of 1899, a year after the U.S. Navy developed its first hospital ship and some 93 years prior to the commissioning of the PLAN's first ever hospital ship (Figure 1).⁶ They were further elaborated at the Hague Convention on Hospital Ships in 1904 and the tenth convention of the Second Hague Peace Conference in 1907.⁷ By

volume 13, no 1 (2021), pp. 48–55,

<https://www.cfedmha.org/LinkClick.aspx?fileticket=ZY0LUUs74Uo%3D&portalid=0>.

⁴ To identify the 17 PRC medical vessels, this study found and investigated 2,577 publicly available articles. The method and data used in this study has been described in the Appendix of this report.

⁵ This description comes from the definition of “hospital ship” on the *How Does Law Protect in War* website, which is a distillation of the relevant articles of the Second Geneva Convention (1949) and other sources of international law. See “Hospital Ship,” *How Does Law Protect in War*, accessed on 30 October 2024, https://casebook.icrc.org/a_to_z/glossary/hospital-ship.

⁶ Naval History and Heritage Command (NHHC), “United States Naval Hospital Ships,” *NHHC*, 23 August 2017, <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/u/united-states-naval-hospital-ships-nhf.html>.

⁷ “The Third Convention on the Adaptation to Maritime Warfare of the Principles of the Geneva Convention of 22 August 1864,” *The Hague*, 29 July 1899, <https://ihl-databases.icrc.org/assets/treaties/155-IHL-11-EN.pdf>; “The Convention for the Exemption of Hospital Ships, in Time of War, from the Payment of All Dues and Taxes Imposed for the Benefit of the

the Second Geneva Convention of 1949, its additional protocols of 1977, and further iterations of these conventions in the San Remo Manual on International Law Applicable to Armed Conflicts at Sea of 1994, the rules defining and governing what hospital ships are and how they should be used in wartime had been fully codified and accepted by almost every nation on earth.⁸

Indeed, the PLA's own definitions of "hospital ship" (医院船) appears to align with international legal parameters:

"An unarmed service ship equipped with medical equipment and staff, specially designed to receive, treat, and transport the sick, wounded, and shipwrecked at sea. According to international law, the hull of the ship is painted white above the waterline, marked with a red cross or red crescent, or a red lion and sun on a white ground symbols on both sides of the hull and the upper deck; the national flag of the country is flown, and a red cross flag on a white background is flown on the high side of the main mast."⁹

However, some of the vessels within the PLAN's hospital ship ecosystem fail to meet the PRC's own definition as well as international legal standards during an armed conflict, something that could have adverse humanitarian consequences if not addressed. This issue is examined in detail in the findings and discussion section below.

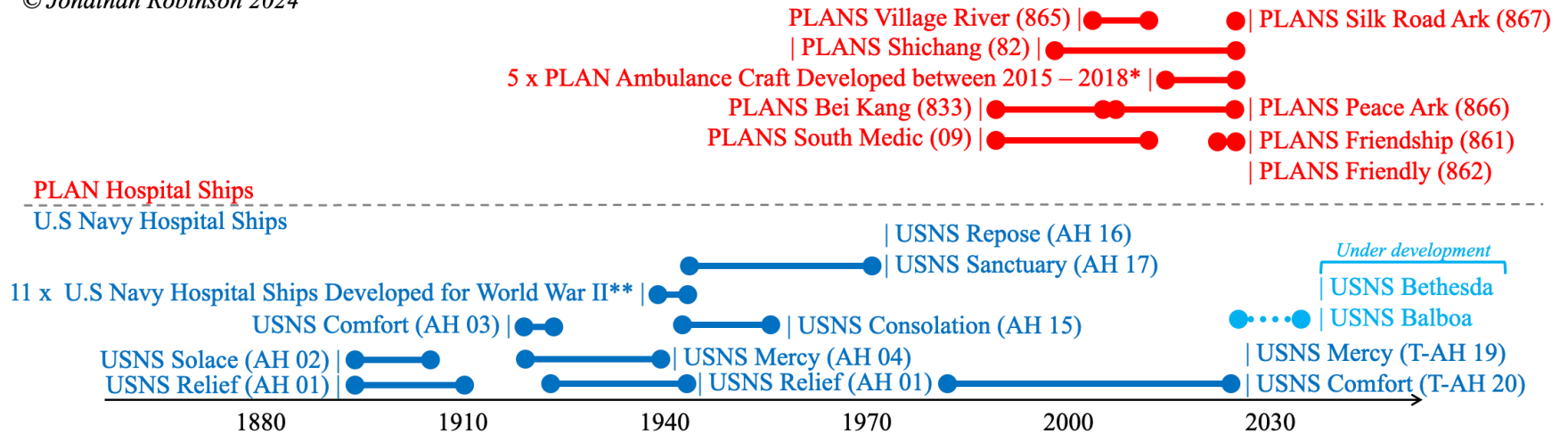
State," *The Hague*, 21 December 1904, <https://ihl-databases.icrc.org/assets/treaties/175-IHL-15-EN.pdf>; "The 10th Convention for the Adaptation to Maritime Warfare of the Principles of the Geneva Convention," *The Hague*, 18 October 1907, <https://ihl-databases.icrc.org/assets/treaties/225-IHL-25-EN.pdf>.

⁸ "The Convention (II) for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea," *Geneva*, 12 August 1949, <https://ihl-databases.icrc.org/en/ihl-treaties/gcii-1949>; "Protocol Additional to the Geneva Conventions of 12 August 1949 and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977," <https://ihl-databases.icrc.org/en/ihl-treaties/api-1977>; "The Protocol Additional to the Geneva Conventions of 12 August 1949 and Relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), 8 June 1977," <https://ihl-databases.icrc.org/en/ihl-treaties/apii-1977>; "San Remo Manual on International Law Applicable to Armed Conflicts at Sea, 12 June 1994," <https://ihl-databases.icrc.org/en/ihl-treaties/san-remo-manual-1994?activeTab=>.

⁹ 中国人民解放军军语 [*Dictionary of Military Terms*] (Beijing: Academy of Military Science Press, September 2011), p. 930.

LENGTH OF SERVICE OF PLAN & U.S. NAVY HOSPITAL SHIPS 1898 - 2024

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* 5 PLAN Ambulance Craft Developed Between 2015 and 2018 Were: PLANS North Medic (01), PLANS East Medic (12), PLANS East Medic (13), PLANS South Medic (10), and PLANS South Medic (11)

** 11 U.S. Navy Hospital Ships Developed for World War II Were: USNS Solace (AH 05), USNS Comfort (AH 06), USNS Hope (AH 07), USNS Mercy (AH 08), USNS Bountiful (AH 09), USNS Samaritan (AH 10), USNS Refuge (AH 11), USNS Haven (AH 12), USNS Benevolence (AH 13), USNS Tranquility (AH 14), and USNS Rescue (AH 18).

Figure 1. Timeline of Development of U.S. Navy and PLAN Hospital Ships.

PRC Hospital Ships

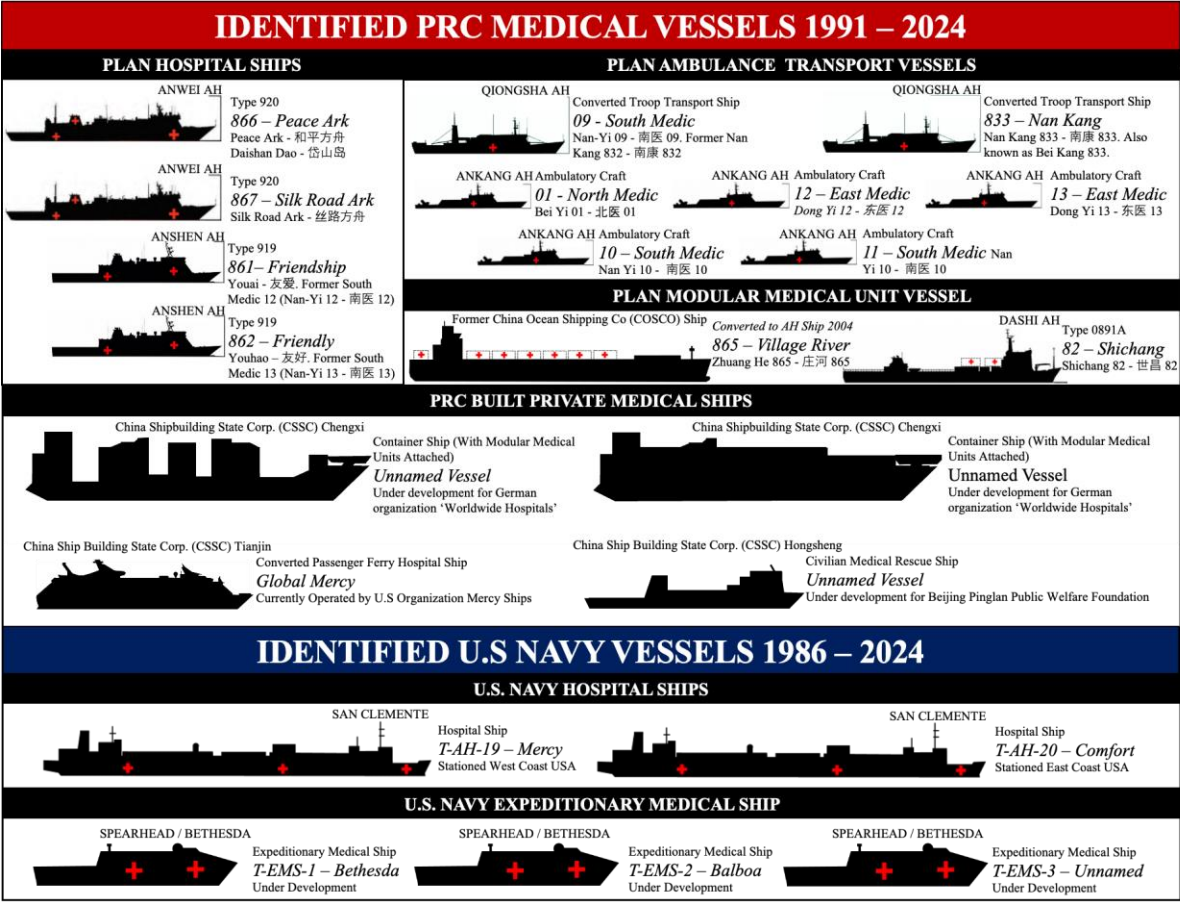
Using open sources and a systematic research method (outlined in the appendix of this report), the study identified 17 vessels that have been part of the PRC's hospital ship ecosystem since 1991.¹⁰ These included four large PLAN hospital ships, seven PLAN ambulance transport vessels, two PLAN modular medical unit medical vessels, and four China Shipbuilding State Corporation (CSSC) developed civilian medical vessels. Notably there has been a significant growth in the number of hospital ships developed by the PRC since 2012, when Xi Jinping became general secretary of the Chinese Communist Party (CCP). At least 12 (71 percent) of the 17 vessels found in this study have been developed since this time.

The vessels found for this study include:

- Two Anwei class hospital ships: the *Peace Ark* (hull number 866) and the *Silk Road Ark* (867).
- Two Anshen class hospital ships: the *Friendship* (861) and the *Friendly* (862).
- Two Qiongha class ambulance transport vessels: *South Medic* (09) and the *Nan Kang* (833).
- Five Ankang class ambulance transport vessels: *North Medic* (01), *East Medic* (12), *East Medic* (13), *South Medic* (10) and *South Medic* (11).
- Two PLAN modular medical unit vessels: the *Shichang* (82), and the *Village River* (865).
- Four CSSC developed civilian medical vessels: the MV *Global Mercy* hospital ship currently in service for a U.S. humanitarian organization, two unnamed modular medical unit ships currently under development for a German humanitarian organization, and an unnamed medical rescue ship currently under development for a PRC humanitarian organization.

For depictions and more information on the above-mentioned vessels, see Figures 2 and 3 below as well as the appendix.

¹⁰ This report uses English names for the vessels described in this report. For Chinese names, see Figure 2 in this report.



Adapted by author from open sources and ONI PLAN Recognition and Identification Guide 2024.

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Figure 2. PLAN and U.S. Navy Hospital Ships 1986–2024 identified for the study.



Figure 3. Pictures of 10 of the 17 PRC hospital ships.¹¹

¹¹ The above pictures were obtained from the following sources: *Peace Ark* (866) from “Chinese hospital ship Daishan Dao,” *Wikipedia*, accessed on 10 November 2024, https://en.wikipedia.org/wiki/Chinese_hospital_ship_Daishan_Dao; *Silk Road Ark* (867) from Alcott Wei, “South China Sea: PLA Deploys New Hospital Ship to Islands and Reefs in Contested Waters,” *South China Morning Post*, 16 July 2024, <https://www.scmp.com/news/china/military/article/3270598/south-china-sea-pla-deploys-new-hospital-ship-islands-and-reefs-contested-waters>; *Friendship* (861) (formerly the *South Medic/Nan Yi* (12)) from 犁波踏浪, 微山湖舰首次为某型医疗船海上补给 [“Plowing the Waves, the *Weishanhu* Ship Provided Sea Supplies for a Certain Type of Medical Ship for the First Time”], 军报记者 [*Military Reporter*], 20 April 2021, <https://mil.news.sina.com.cn/2021-04-20/doc-ikmxzfmk7922436.shtml>; *Friendly* (862) from 湖北科技领域创作者 [Hubei Science and Technology Creators], 花费上百万, 海军出动万吨巨舰, 只为救一人, 这就是大国民贵 [“The Navy Spent Millions Dispatching a 10,000 Ton Ship to Save One Person, Showing How a Great Nation Values People”], *Tencent News*, 14 July 2023, <https://new.qq.com/rain/a/20230714A09COJ00>; *South Medic* (09), *Bei Kang* (833), *North Medic* (01), *East Medic* (13), and the *Village River* (865) from 中国海军医院发展之路 由改装到专业由简陋到豪华 [“The Development Path of China's Naval Hospital, From Modified Ships to Specialized Ships, From Backward to Luxurious”], 新浪军事 [*Sina News Website*], 5 February 2018, <http://mil.news.sina.com.cn/jssd/2018-02-05/doc-ifyreyvz9285918.shtml>; *Shichang* (82) from DS 北风 [D.S Beifang], 从新型医院船看我军海上医疗保障体系 [“A Look at Our military's Maritime Medical Support System from the Perspective of New Hospital Ships”], 新浪网 [*Sina News*], 13 March 2019, https://k.sina.com.cn/article_2149981442_80261d02034015ejt.html.

Findings and Discussion

Based on the foregoing discussion, the PRC's hospital ship ecosystem contains a diverse set of platforms beyond just the *Peace Ark*. These platforms perform two main mission types:

- 1) Provide support to PLA personnel.
- 2) Conduct maritime global health engagement.

There are also several potential wartime concerns with some of the PRC's hospital ships, especially regarding proper identification and uses of hospital ships outlined in the Second Geneva Convention as well as those from the private sector, which potentially provide the PRC with a blueprint for rapidly increasing capabilities during conflict. The following sections will discuss each of these themes in further detail.

Support to PLA Personnel

Of the 17 PRC medical vessels found for this study, 13 were PLAN hospital, ambulance transport, or modular medical unit vessels. This number far surpasses the U.S Navy's two current hospital ships, the USS *Comfort* (T-AH-19) and USS *Mercy* (T-AH 20), and three Bethesda class medical expeditionary vessels currently under development.¹² The majority of the PLAN's 13 hospital ships are focused on supporting PLA personnel with medical needs around the mainland and the South China Sea, rather than conducting outward looking maritime global health engagement as the *Peace Ark* does and the *Silk Road Ark* may do. This includes the two older Qiongsa class ambulance transport vessels (the *South Medic* (09) and *Nan Kang* (833)) that have supported PLA occupied islands in the South China Sea since 1991 and appear to have been largely replaced by the newer Anshen class vessels (*Friendship* (861) and *Friendly* (862)) in the early 2020s.¹³ The five Ankang class ambulatory craft launched between 2015 and 2018—*North Medic* (01), *East Medic* (12), *East Medic* (13), *South Medic* (10), and *South Medic* (11)—also appear to be assigned to support

¹² Justin Katz, "Austal Eying European Markets for US Navy's New Medical Ship Design," *Breaking Defence News*, 4 November 2024, <https://breakingdefense.com/2024/11/austal-eyeing-european-markets-for-us-navys-new-medical-ship-design/>. In addition, if the U.S completes the development of these three ships in the coming years, this may give the U.S an advance in the maritime global health engagement space if indications that these vessels could also be used in this activity come to pass (compared to the one possibly two vessels that PRC uses). See Health Mongilio, "SECNAV Del Toro Names Next-Generation Hospital Ship Bethesda," *U.S. Naval Institute News*, 8 January 2024, <https://news.usni.org/2024/01/08/secnav-del-toro-names-next-generation-hospital-ship-bethesda>.

¹³ The *Nan Kang* (833) appears to have been discontinued as an ambulance ship sometime before 2010 and is described in Mackenzie, "Red Crosses, Blue Water." The *South Medic* (09) was still described in ONI's PLAN ship recognition and identification guide in 2015 but not in 2018, suggesting the vessel was discontinued sometime in this timeframe. See Office of Naval Intelligence (ONI), "China People's Liberation Army Navy (PLAN), Coast Guard, and Government Maritime Forces 2018 Recognition and Identification Guide," *U.S. Navy*, July 2018, <https://www.oni.navy.mil/Portals/12/Intel%20agencies/PLANavy.jpg?ver=2018-07-16-090249-333>; and Office of Naval Intelligence (ONI), "China People's Liberation Army Navy (PLAN) and Maritime Law Enforcement (MLE) 2015 Recognition and Identification Guide," *U.S. Navy*, February 2015, http://www.andrewerickson.com/wp-content/uploads/2015/08/ONI_PLAN_2015_Report_Appendix_PLAN-MLE-Identification-Guide.pdf. For evidence of the *Friendship* (861) and *Friendly* (862) hospital ships being used in the same areas of the *South Medic* (09) and *Bei Kang* (833), see Liu Xuanzun, "PLA Navy Hospital Ship Visits Islands and Reefs in South China Sea", *Global Times News*, 22 May 2024, <https://www.globaltimes.cn/page/202405/1312830.shtml> and Liu Xuanzun, "PLA Navy Hospital Ship Completes 1st Round of Visits to Islands, Reefs of Xisha and Nansha," *Global Times News*, 10 October 2022, <https://www.globaltimes.cn/page/202210/1276829.shtml>.

personnel attached to the PLAN fleets to which they are assigned.¹⁴ The two modular vessels, the *Shichang* (82) and the *Village River* (865), are or have been attached to the PLAN's Dalian Naval Academy, a training command in northeast China where they operate in other roles aside from medical modular unit ships.¹⁵ With the exception of the *Shichang*'s visits to Australia, New Zealand, the Philippines, and Hawaii in the late 1990s, both vessels appear to currently operate within home waters.¹⁶

Maritime Global Health Engagement

Since 2010, the PLAN's *Peace Ark* has been the center of China's maritime global health engagements. To date, the ship has conducted ten "Harmonious Missions" (和平使命) around the world.¹⁷ The *Peace Ark* has visited at least 71 ports on six of the world's seven continents, serving as a highly visible part of the PLAN's global soft power efforts and tool for stoking national pride in the PRC's actions around the world.¹⁸ The commanding officer of the first Harmonious Mission in 2010, Rear Admiral Bao Yuping, noted that such missions were aimed at building relations with the countries visited and to promote a more peaceful international image of the PRC.¹⁹

Today, such messages continue to be echoed, with a China Military Online article about the 2024 Harmonious Mission noting that the mission is committed to upholding "peace, development, and win-win cooperation" to "build a maritime community with a shared future."²⁰ In addition, the Harmonious Mission set has become a key part of the PRC's Global Security Initiative (GCI), which offers a broad outline for how the PRC envisions an alternative post U.S.-led international order and how the PRC aims to address transnational security challenges by building Sinocentric cooperation.²¹ In a press conference in July 2024, PLA Colonel Zhang Xiaogang stated that PLAN's Harmonious Missions are "a vivid demonstration of the earnest efforts made by the PLAN to implement the

¹⁴ The five ambulance vessels were described as being under development in ONI's 2015 PLAN ship recognition and identification guide but were included in the 2018 guide, suggesting these vessels were commissioned sometime between 2015 and 2018. For more see ONI, "China People's Liberation Army Navy (PLAN), Coast Guard, and Government Maritime Forces 2018 Recognition and Identification Guide"; and ONI, "China People's Liberation Army Navy (PLAN) and Maritime Law Enforcement (MLE) 2015 Recognition and Identification Guide."

¹⁵ Both ships are described as being part of Dalian Naval Vessels Academy in Mackenzie, "Red Crosses, Blue Water," p. 8. The *Shichang* (82) is described as a training ship in 2024 ONI PLAN ship recognition and identification guide.

¹⁶ Also described in Mackenzie, "Red Crosses, Blue Water," p. 9.

¹⁷ Harmonious Missions were not conducted in 2012, 2016, 2019, 2020, and 2021 for maintenance periods or COVID-19.

¹⁸ In November 2021, a fictional 32-episode TV series was released titled "和平之舟" (Peace Ark) that was filmed aboard the ship (with apparent PLAN approval) and portrays life aboard the vessel as well as how the ship responds to various crises such as search and rescue, foreign disaster relief, and outbreaks. It can be accessed at the following link: https://www.youtube.com/watch?v=WGdb0-Z2KO4&list=PLDuzvnRlfxZq4VdAe2j_wf3bVjq8013FB

¹⁹ In November 2010, Rear Admiral Bao Yuping commanding officer of Harmonious Mission 2010 stated about the mission, "The visits of *Peace Ark* to the five African and Asian countries, which have yielded rich fruits, are voyage of harmony and voyage of peace. Harmonious Mission 2010 has put into practice the concepts of 'harmonious world' and 'harmonious ocean' advocated by the Chinese government...The visits promoted traditional friendship with the five countries, strengthened the military cooperation, presented to the world Chinese military's image of maintaining peace and caring about life." See "Peace Ark Concludes Visit to Bangladesh," *China.Org*, 15 November 2010, http://www.china.org.cn/world/2010-11/15/content_21346904.htm.

²⁰ Zhang Xuanhao, "Peace Ark Hospital Ship Builds a Bridge of Friendship," *China Military Online*, 10 September 2024, http://eng.chinamil.com.cn/OPINIONS_209196/Opinions_209197/16337484.html.

²¹ For more on the Global Security Initiative see John S. Van Oudenaren, "The Global Security Initiative: China Outlines a New Security Architecture," *China Brief*, volume 23, no. 4 (3 March 2023), <https://jamestown.org/program/the-global-security-initiative-china-outlines-a-new-security-architecture/>.

Global Security Initiative and build a maritime community of shared future. It will also deepen the traditional friendship between China and relevant countries.”²²

Since 2010 there has been a clear growth in capability from these maritime global health engagement missions. Not only has there been a steady increase in the length of cruise of each Harmonious Mission, but also the number of ports visited in each mission—with 2024 on course to break the record for the most ports visited in a single mission (Figure 4).

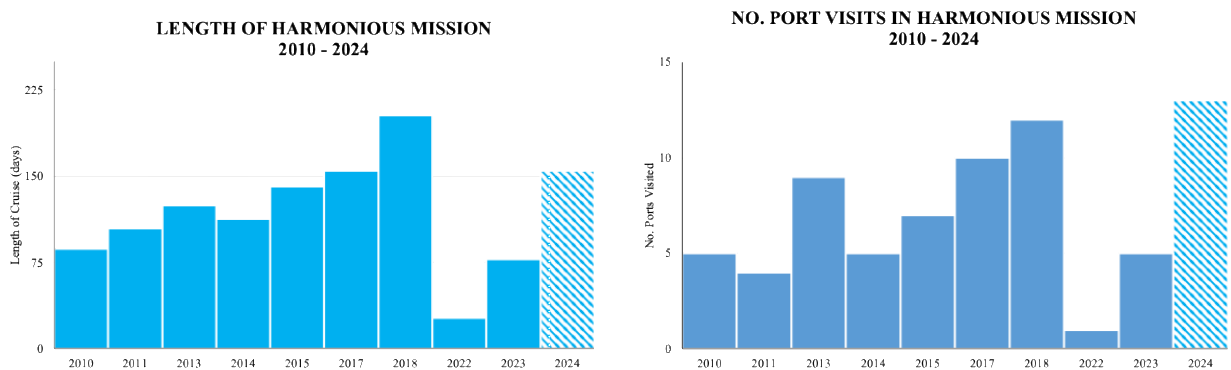


Figure 4. The length of cruise (left) and number of port visits (right) for each Harmonious Mission since 2010. Harmonious Mission 2024 is estimated as it was underway at the time of writing.²³

In addition, when combining the open-source data on the 71 port visits for Harmonious Missions since 2010, it can be shown that the PLAN has largely committed the *Peace Ark* to four regions of the world (Figure 5). Two core regions of focus are Melanesia and East Africa, which together saw almost a third (21) of the total number of port visits by the *Peace Ark* since 2010. Two emerging regions of focus are the Northeast Indian Ocean and West Africa, which combined saw almost a fifth (12) of all port visits by the *Peace Ark* since 2010. It is also notable that while there was a cluster of *Peace Ark* port visits in the Caribbean region (representing 15 percent (11) of total visits), the *Peace Ark* has not visited this region since 2018. This suggests that the *Peace Ark*'s early focus on this region was more about testing long range capabilities of the ship rather than sustained health support as is seen elsewhere in the world.

²² Lin Congyi, “Mission Harmony-2024: Vivid Demonstration of PLAN’s Earnest Efforts in Building a Maritime Community of Shared Future,” *Ministry of National Defence of the People’s Republic of China*, 25 July 2024, http://eng.mod.gov.cn/xb/News_213114/NewsRelease/16326992.html.

²³ Graphics are based on open-source reporting collected by the author.

PEACE ARK HARMONIOUS MISSIONS 2010 - 2024

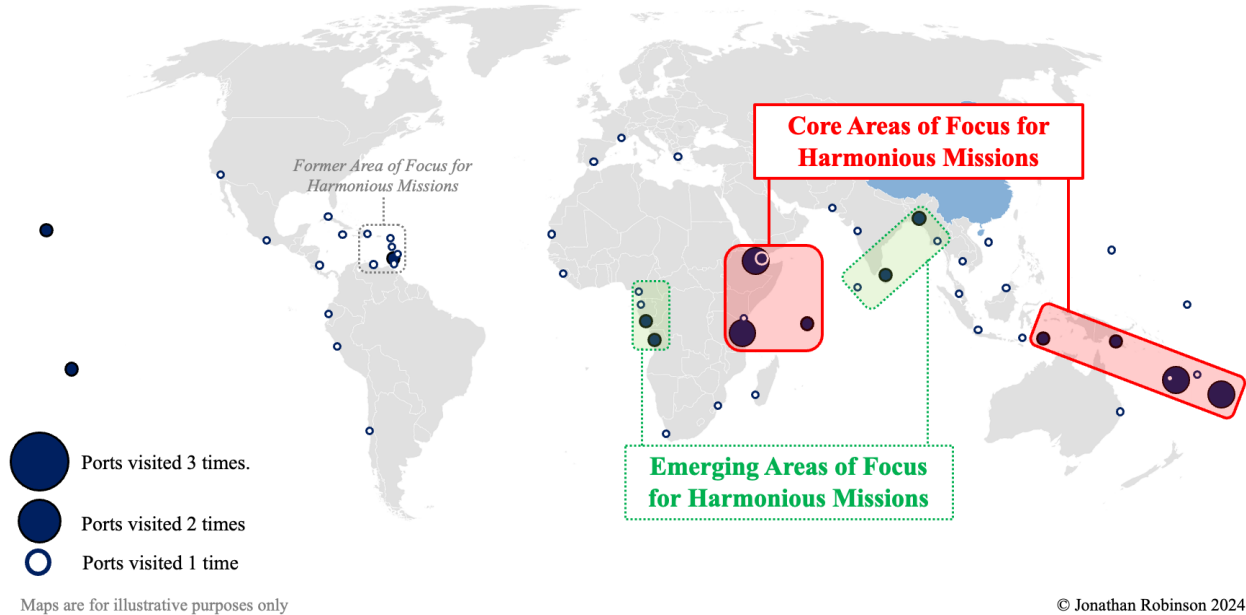


Figure 5. Map of Harmonious Mission port visits 2010–2024. Harmonious Mission 2024 visits are estimated as it was underway at the time of writing.

Looking forward, it is yet to be seen how the PRC will use the *Peace Ark*'s sister ship, the *Silk Road Ark*, to enhance its maritime global health engagement efforts in the future. For its first medical mission, it was deployed to support PLA troops stationed on occupied islands in the South China Sea. Given that the PLAN has only deployed ambulance transport vessels to these islands since 1991, it would be surprising to see the *Silk Road Ark* hospital ship used this way in the future.²⁴ Indeed, PRC media articles about the deployment suggest the *Silk Road Ark* will have a more internationally-focused role in the future, noting that “in addition to medical rescue and evacuation of wounded at sea during wartime, the ocean hospital ship will also offer international humanitarian medical services and carry out emergency medical rescue for major disasters and international military medical exchanges and cooperation.”²⁵

If the new hospital ship follows a similar journey to how its sister ship the *Peace Ark* was used following its first mission to occupied islands in the South China Sea in 2009, the coming years may see the *Silk Road Ark* test its long-range expeditionary capabilities. This could mean a return of the PLAN's maritime global health engagement outside the identified four areas of focus—such as the Caribbean. Alternatively, the *Silk Road Ark* could be used to reinforce the *Peace Ark*'s maritime soft power projection in the four areas of focus identified in this study, between Melanesia and West Africa.

²⁴ Between 1991 and 2018, the PLAN used two Qiongscha class ambulance transport vessels, the *South Medic* (09) and *Bei Kang* (833), after which it used two Anshen class hospital ships, the *Friendship* (861) and the *Friendly* (862).

²⁵ Zheng, “Navy's Hospital Ship Heads Out for Rescue Drills, Medical Aid in South China Sea.”

As a final note, in his 2011 report, Peter Mackenzie predicted that the *Peace Ark* could be used for maritime foreign disaster relief (FDR) and non-combatant evacuation operations (NEO).²⁶ However, this expectation has largely failed to materialize. With the exception of the 2013 Typhoon Haiyan response to the Philippines, where the *Peace Ark* arrived two weeks after the disaster struck and only provided support to a couple of hundred of the 16 million people affected by the disaster, the vessel has not been used for maritime FDR or NEOs. Instead, it has been PLAN gray hull warships that have been typically involved in maritime FDR and NEOs in the past 15 years.²⁷ This suggests that the PLAN has made a deliberate choice not to employ the *Peace Ark* hospital ship for these two types of activities, something that could extend to the *Silk Road Ark* too.²⁸

Potential Wartime Concerns

As described in section one of this report, the parameters and identification measures for hospital ships during conflict are clearly outlined in the Second Geneva Convention (1949), Additional Protocols of 1977, and San Remo Manual (1994). However, the Second Geneva Convention is not applied until the time of conflict, and presently there are no universal provisions for hospital ships operating in peacetime.

Currently, most of the PLAN's hospital vessels appear to meet the parameters for hospital ships, should a conflict emerge. However, several PLAN vessels and PRC commercially developed hospital ships could pose a concern during a transition to conflict. Some do not appear to conform to proper identification and use of hospital ships, while others potentially provide the PRC with a blueprint for increasing capabilities during conflict.

The *Village River* (865) and *Shichang* (82) do not meet the proper identification markings for hospital ships under international law. Converted medical space containers on their decks are painted

²⁶ For more discussion on the predicted use of the *Peace Ark* FHA/FDR and NEOs see pages 19 and 20 of Mackenzie, "Red Crosses, Blue Water," pp. 19-20.

²⁷ For example, instead of the *Peace Ark* the *Linyi* (547) frigate, the *Weifang* (55) frigate and the *Weishanhu* (887) replenishment ship responded to the 2015 Yemen non-combatant evacuation; the *Changchun* (150) destroyer, the *Jing Zhou* (532) frigate, and the *Chaohu* (890) replenishment ship responded to the 2017 Sri Lanka flooding; the *Wuzi Shan* (987) amphibious transport dock and the *Chaganhu* (967) fast combat support ship responded to the 2022 Tonga volcanic eruption; and the *Nanning* (162) destroyer and the *Weishanhu* (887) replenishment ship performed the 2023 Sudan non-combatant evacuation.

²⁸ The PRC's FDR response to the Philippines in 2013, that included the *Peace Ark*, was widely criticized internationally for being delayed, minimal, and unimpactful. This embarrassment is likely one reason why the *Peace Ark* has remained focused on maritime global health engagement rather than FDR, in addition to geopolitics related to the *Peace Ark*'s deployment—such as not visiting countries that maintain official relations with Taiwan, or countries with which it has maritime boundary or territorial disputes. For more information see Atmakuri Lakshmi Archana and Li Mingjiang, "Geopolitical Objectives Fuel China's Peace Ark," *East Asia Forum News*, 13 October 2018, <https://eastasiaforum.org/2018/10/13/geopolitical-objectives-fuel-chinas-peace-ark/>; Jane Perlez, "China Offers Hospital Ship to Philippines," *New York Times*, 19 November 2013, https://archive.nytimes.com/sinosphere.blogs.nytimes.com/2013/11/19/china-offers-hospital-ship-to-the-philippines/?_r=0; and Matthew Southerland, "The Chinese Military's Role in Overseas Humanitarian Assistance and Disaster Relief: Contributions and Concerns," *U.S. China Economic and Security Review Commission Staff Research Report*, 11 July 2019, https://www.uscc.gov/sites/default/files/Research/USCC%20Staff%20Report_The%20Chinese%20Military%E2%80%99s%20Role%20in%20Overseas%20Humanitarian%20Assistance%20and%20Disaster%20Relief_7.11.19.pdf. For more on the PRC's perspective on the *Peace Ark*'s deployment to the Philippines in 2013, see Peng Yining, "Peace Ark Leaves Leyte After Disaster Relief," *China Daily*, 10 December 2013, https://www.chinadaily.com.cn/china/2013-12/10/content_17164325.htm.

white with large red crosses, but such required markings should be on the hull of the vessel to make it a hospital ship. Moreover, the vessels are also predominantly used for military purposes rather than exclusively medical purposes, something that also is a requirement of hospital ships in conflict settings.²⁹ Reports from 2011 suggest that this Qiongsa class hospital ship *South Medic* (09) retained its 14.5 millimeter guns, armaments that well exceed personal weapons for self-defense, thereby jeopardizing its hospital ship status if it remains in service. A fourth vessel found in the course of this study, the *Yanyu* (681) fishing boat that is likely operated by the PLAN in some form, also does not meet the proper identification markings of a hospital ship under international law as it only has a large white medical tent with a large red cross on top on the back of the deck and no markings on the vessel itself (Figure 6).³⁰ The PRC's blurring of distinction between hospital ships and military vessels adds to the complexity of any future maritime conflict environment, one where sailors may need more time and effort to evaluate the true nature of these vessels in a setting where time is of the essence and there is no room for hesitancy.



Figure 6. Yanyu 681 converted medical fishing boat.³¹

In recent years, the CSSC has also commercially developed four hospital ships based on modified passenger ferry and container ship designs that could provide the PLAN with the blueprint for surging maritime medical capabilities in the event of a conflict. The vessels, which are built or in development for use by U.S., German, and PRC humanitarian organizations (Figure 7), not only help add to the PRC's soft power efforts by being seen to contribute to humanitarian capabilities around the world but could also provide the PRC with the skills and knowledge to more rapidly produce additional hospital ships if a future conflict breaks out.³² Indeed, officials in the PRC have noted the

²⁹ The *Shichang* (82) is described as a training ship in 2024 ONI PLAN ship recognition and identification guide. In addition, the *Shichang* (82) is a grey hull vessel and does not meet the identification parameters under international law. Added to this, although the *Village River* (865) is likely operating as a civilian cargo vessel at present, it could return to being operated by the PLAN in wartime, making this a civilian vessel operated by a military actor, adding complications for identification.

³⁰ The vessel is likely operated by the PLAN in some fashion given that it was included on a PRC webpage detailing PLAN's hospital ships. However, the information found from this website could not be fully corroborated with other open sources for this study and has therefore not been included in overall depictions of PRC's hospital ship ecosystem. For more information on this, and the systematic method of the study, see the appendix of this report. For the webpage showing the *Yanyu* (861), see "The Development Path of China's Naval Hospital, From Modified Ships to Specialized Ships, From Backward to Luxurious."

³¹ Ibid.

³² One of the four PRC-built civilian vessels is the MV *Global Mercy* that was launched in 2023 from the China State Shipbuilding Corporation (CSSC) Tianjin shipyard after being ordered in 2013 by a U.S. humanitarian organization called Mercy Ships. For more information see Mercy Ships website, <https://www.mercyships.org/our-mission/ships/#global-mercy>, accessed 2 November 2024. Two unnamed PRC built civilian vessels included two modular medical unit ships

desire to build more private hospital ships for use in crises in the future, suggesting the growth in CSSC-developed civilian hospital ships is unlikely to dissipate and in line with this additional desired capability.³³ However, it remains to be seen how these vessels would be incorporated into the PLAN hospital ship ecosystem if a conflict arose.



- MV Global Mercy (*Built in 2023 at Tianjin Shipyard*)



- Unnamed Medical Rescue Ship (*Under Development at Hongsheng Shipyard*)



- Unnamed Modular Medical Unit Ship (*Under Development at Chengxi Shipyard*)



- Unnamed Modular Medical Unit Ship (*Under Development at Chengxi Shipyard*)

Figure 7. Pictures of various commercially developed civilian hospital ships that PRC firms have built or intend to build.³⁴

Conclusion

This report has attempted to provide a more holistic view of the PRC's diverse ecosystem of hospital ships that now includes at least 17 vessels. Based on open-source data, it appears the PRC uses most of its vessels for support to PLA personnel around the mainland and South China Sea as well as for maritime global health engagement through the *Peace Ark* and potentially *the Silk Road Ark*. Despite

currently in development by CSSC Chengxi shipyard for use by a German humanitarian organization called Worldwide Hospitals. For more information see Worldwide Hospitals (WWH) website, <https://wwh.com/>, accessed 2 November 2024. The final medical vessel, a so-called civilian medical rescue ship, is also under development for the Beijing Pinglan Public Welfare Foundation at CSSC Hongsheng shipyard and is described in 全国首艘 中国民间远洋医疗救援船在宏盛造船开工建造 [“The Construction of the First Chinese Civilian Ocean-Going Medical Rescue Ship Started at Hongsheng Shipyard”], 船海装备网 [SHIPOE News Website], 18 October 2023, <https://www.shipoe.com/news/show-67084.html>.

³³ In 2020, Dong Qiang, the former Chairman of CSSC, stated that a special fund should be set up by the PRC to design four types of hospital ships for use “along rivers, near coasts or in open seas far from shore” for civilian and military use in an epidemic or national disaster. For more, see Zhao Lei, “More Hospital Ships Needed for Emergencies Adviser Says,” *China Daily*, 1 June 2020, <https://www.chinadaily.com.cn/a/202006/01/WS5ed439cda310a8b241159b84.html>.

³⁴ Top left picture is sourced from Xinhua, “World’s Largest Unofficial Hospital Ship Undocks from Tianjin,” *China Daily*, 7 July 2019, <https://global.chinadaily.com.cn/a/201907/07/WS5d21e5cfa3105895c2e7c182.html>. Top right picture is sourced from “The Construction of the First Chinese Civilian Ocean-Going Medical Rescue Ship Started at Hongsheng Shipyard.” Bottom two pictures are sourced from Worldwide Hospitals (WWH), “02 Modular Hospital Ships,” *Worldwide Hospitals*, accessed on 12 November 2024, <https://wwh.com/>.

the expectation in 2011 that the PLAN's *Peace Ark* would be used in FDR or NEOs around the world, PLAN hospital ships are rarely used in these cases, unlike the U.S. Navy's hospital ships that continue to operate globally.³⁵ Although this could change in the future, such action would represent a significant departure of this longstanding trend and require further investigation as to the reasons for this variation.

The PRC's maritime global health engagement using the *Peace Ark* has become an enduring feature of China's naval diplomacy since 2010. The commissioning of the *Peace Ark*'s sister ship—the *Silk Road Ark*—in 2023 will likely strengthen the PRC's maritime global health engagement efforts in some form. This could occur in Melanesia and East Africa, two areas that the PRC has prioritized for its global health engagement, but the PRC might also prioritize areas where its maritime global health engagement presence has been absent in recent years, such as the Caribbean.

Some PRC hospital ships raise questions about the level to which the PRC will comply with the proper identifications and protections governing hospital ships in the Second Geneva Convention and other customary international law. Of particular concern are the Qiongsa class ambulance ship *South Medic* (09) (if it remains in service), the *Shichang* (82) modular medical unit ship, the *Village River* (865) modular medical unit ship, and the *Yanyu* (861) converted medical rescue fishing boat. Three of these vessels lack the required hull markings for a hospital ship, giving them an ambiguous status. The fourth, *South Medic* (09) may still retain its 14.5-millimeter guns—which are much too large for a hospital ship, according to international law. These issues could potentially complicate the tactical decision making of China's future adversaries.

The growth in CSSC commercially developed civilian hospital ships in recent years also raises concerns that the PRC is developing the ability to rapidly increase its medical capabilities during a conflict. It is also an area that the PRC is potentially outcompeting the U.S. presently and a boost to its soft power efforts through being seen to contribute to humanitarian capabilities around the world.

Finally, the findings of this report help provide a baseline of knowledge from which to raise questions about the strategic competition environment. For example, how much consideration in planning scenarios has been given to how the PRC's diverse hospital ship ecosystem may operate in a conflict setting? How could the PRC's hospital ships link with other humanitarian activities such as maritime humanitarian corridors, exchange of prisoners, or evacuation of the wounded? Or how well are the legal parameters of what makes a hospital ship a protected vessel under the Second Geneva Convention known by key tactical-level decision makers who may face these vessels at sea? Using hospital ships as a lens to explore wider questions such as these can contribute to creating adaptive and holistic solutions when a conflict occurs. It also helps root planning for a crisis, since in any future conflict—regardless of intensity—humanitarians and civilians will always be present on land and at sea.

³⁵ For more on U.S Navy hospital ships long history see Andre B Sobocinski, "Navy Hospital Ships Have History of Answering Nation's Call," *U.S. Department of Defense*, 27 March 2020, <https://www.defense.gov/News/Feature-Stories/story/Article/2128626/navy-hospital-ships-have-history-of-answering-nations-call/>.

Appendix

Table 1. PLAN Hospital Ships (1991-2008)³⁶

| NAME OF VESSEL | <i>South Medic (09)</i> | <i>Nan Kang (833)</i> | <i>Shichang (82)</i> | <i>Village River (865)</i> | <i>Peace Ark (866)</i> |
|--------------------------------|--------------------------|--------------------------|---------------------------|----------------------------|------------------------|
| CLASS OF VESSEL | Nan Kang | Nan Kang | Dashi | Converted Container Ship | Anwei |
| TYPE OF VESSEL | Ambulance Transport Ship | Ambulance Transport Ship | Modular Medical Unit Ship | Modular Medical Unit Ship | Hospital Ship |
| COMISSIONED | 1991 | 1991 | 1997 | 2004 | 2008 |
| LAST REPORT OF SERVICE | 2015 | < 2010 | 2024 | 2011 | 2024 |
| LENGTH (FEET) | 282 | 282 | 393.7 | 200.48 | 590.5 |
| DISPLACEMENT (TONS, FULL LOAD) | 2,409 | 2,409 | 11,200 | 30,000 | 25,760 |
| SPEED (KNOTS) | 16 | 16 | 17.5 | 16.7 | 19 |
| RANGE (NAUTICAL MILES) | 3,000 | 3,000 | 8,000 | 18,000 | 10,000 |
| CREW (FULL CAPACITY) | 59 | 59 | 370 | N/A | 130 |
| PATIENT BEDS | 100 | 100 | N/A | N/A | 300 |
| HELICOPTER LANDING CAPABILITY | No | No | Yes | Yes | Yes |
| FLEET ATTACHED TO | South Sea | South Sea | North Sea | North Sea | East Sea |

³⁶ Sourced from Mackenzie, “Red Crosses, Blue Water”; Leah Averitt, “Chinse Hospital Ships and Soft Power,” *Semaphore Magazine*, issue 3 (April 2011), <https://seapower.navy.gov.au/media-room/publications/semaphore-03-11>; and Leah Averitt, “China’s Growing Maritime HA/DR Capabilities,” *China Brief*, volume 10, no. (11 June 2010), pp. 5–6, https://jamestown.org/wp-content/uploads/2010/06/cb_010_56.pdf.

Table 2. PLAN Hospital Ships (2015–2024)³⁷

| NAME OF VESSEL | <i>North Medic (01)</i> | <i>East Medic (12)</i> | <i>East Medic (13)</i> | <i>South Medic (10)</i> | <i>South Medic (11)</i> |
|---------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| CLASS OF VESSEL | Ankang | Ankang | Ankang | Ankang | Ankang |
| TYPE OF VESSEL | Ambulance Transport Craft | Ambulance Transport Craft | Ambulance Transport Craft | Ambulance Transport Craft | Ambulance Transport Craft |
| COMISSIONED | 2015-2018 | 2015-2018 | 2015-2018 | 2015-2018 | 2015-2018 |
| LAST REPORT OF SERVICE | 2024 | 2024 | 2024 | 2024 | 2024 |
| LENGTH (FEET) | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 |
| DISPLACEMENT (TONS, FULL LOAD) | N/A | N/A | N/A | N/A | N/A |
| SPEED (KNOTS) | N/A | N/A | N/A | N/A | N/A |
| RANGE (NAUTICAL MILES) | N/A | N/A | N/A | N/A | N/A |
| CREW (FULL CAPACITY) | N/A | N/A | N/A | N/A | N/A |
| PATIENT BEDS | N/A | N/A | N/A | N/A | N/A |
| HELICOPTER LANDING CAPABILITY | No | No | No | No | No |
| FLEET ATTACHED TO | North Sea | East Sea | East Sea | South Sea | South Sea |

³⁷ Sourced from ONI, “China People’s Liberation Army Navy (PLAN) and Maritime Law Enforcement (MLE) 2015 Recognition and Identification Guide”; ONI, “China People’s Liberation Army Navy (PLAN), Coast Guard, and Government Maritime Forces 2018 Recognition and Identification Guide”; and Office of Naval Intelligence (ONI), “China People’s Liberation Army Navy (PLAN) 2024 Recognition and Identification Guide,” *U.S. Navy*, April 2024, https://www.oni.navy.mil/Portals/12/Intel%20agencies/China_Media/2024_Recce_Poster_PLAN_Navy_U_new2.jpg?ver=gLEmUaAtttQXpV9cL9g7YA%3d%3d.

Table 3. PLAN Hospital Ships (2020–2024)³⁸

| NAME OF VESSEL | <i>Friendship (861)</i> | <i>Friendly (862)</i> | <i>Silk Road Ark (867)</i> |
|--------------------------------|-------------------------|-----------------------|----------------------------|
| CLASS OF VESSEL | Anshen | Anshen | Anwei |
| TYPE OF VESSEL | Hospital Ship | Hospital Ship | Hospital Ship |
| COMISSIONED | 2020 | 2020 | 2023 |
| LAST REPORT OF SERVICE | 2024 | 2024 | 2024 |
| LENGTH (FEET) | 360.8 | 360.8 | 590.5 |
| DISPLACEMENT (TONS, FULL LOAD) | 4,000+ | 4,000+ | 25,760+ |
| SPEED (KNOTS) | N/A | N/A | N/A but likely around 19 |
| RANGE (NAUTICAL MILES) | 4,000+ | 4,000+ | 10,000+ |
| CREW (FULL CAPACITY) | N/A | N/A | N/A but likely around 130 |
| PATIENT BEDS | 100+ | 100+ | 300+ |
| HELICOPTER LANDING CAPABILITY | Yes | Yes | Yes |
| FLEET ATTACHED TO | South Sea | South Sea | South Sea |

³⁸ Sourced from ONI, “China People’s Liberation Army Navy (PLAN) 2024 Recognition and Identification Guide”; “New Hospital Ship NanYi-13 Commissioned to Chinese Navy,” *Army Recognition Group*, 2 December 2020, <https://www.armyrecognition.com/news/navy-news/2020/new-hospital-ship-nanyi-13-commissioned-to-chinese-navy>; Zhao Lei, “Silk Road Ark Sets Sail on Maiden Medical Voyage,” *China Military Online*, 13 July 2024, http://eng.chinamil.com.cn/CHINA_209163/Features_209191/16324229.html; “Chinese Medical Ship’s First Mission to South China Sea Islands,” *CGTN*, 11 Jul 2024, <https://news.cgtn.com/news/2024-07-11/Chinese-medical-ship-s-first-mission-to-south-china-sea-islands-1v92wMpkEb6/p.html>; Li Jiayao, “PLAN Hospital Ship Completes First Medical Tour on Xisha, Nansha Islands,” *PRC Ministry of Defence*, 10 October 2022, http://eng.mod.gov.cn/xb/News_213114/TopStories/4923004.html.

Table 4. PRC Commercially Developed Hospital Ships (2023-2024)³⁹

| NAME OF VESSEL | <i>MV Global Mercy</i> | <i>Unnamed Vessel</i> | <i>Unnamed Vessel</i> | <i>Unnamed Vessel</i> |
|---------------------------------------|-------------------------------|------------------------------------|------------------------------------|---------------------------------|
| CLASS OF VESSEL | Commercially Developed Vessel | Commercially Developed Vessel | Commercially Developed Vessel | Commercially Developed Vessel |
| TYPE OF VESSEL | Hospital Ship | Modular Medical Unit Ship | Modular Medical Unit Ship | Medical Rescue Ship |
| COMISSIONED | 2023 | Under development | Under development | Under development |
| LAST REPORT OF SERVICE | 2024 | N/A | N/A | N/A |
| LENGTH (FEET) | 570.8 | N/A | N/A | 328.5 |
| DISPLACEMENT (TONS, FULL LOAD) | 37,000 | N/A | N/A | 2,200 tons dead weight |
| SPEED (KNOTS) | 12 | N/A | N/A | 14.5 |
| RANGE (NAUTICAL MILES) | N/A | 60 days without refueling | 60 days without refueling | 8,000 |
| CREW (FULL CAPACITY) | N/A | N/A | N/A | N/A |
| PATIENT BEDS | 199 | 111 | 111 | N/A |
| HELICOPER LANDING CAPABILITY | No | Yes | Yes | Yes |
| FLEET ATTACHED TO | N/A – Operated by U.S. NGO | N/A – To be Operated by German NGO | N/A – To be Operated by German NGO | N/A – To be operated by PRC NGO |

³⁹ Sourced from: Xinhua, “World’s Largest Unofficial Hospital Ship Undocks from Tianjin”; “The Construction of the First Chinese Civilian Ocean-Going Medical Rescue Ship Started at Hongsheng Shipyard”; WWH, “02 Modular Hospital Ships”; Mercy Ships “Our Mission”, *Mercy Ships*, accessed 2 November 2024, <https://www.mercyships.org/our-mission/ships/#global-mercy>.

Project Methods

To assist with gaining an understanding of PRC's current hospital ship ecosystem, three steps were developed to help gather information from publicly available sources in a systematic way. The final data processing step attempted to cross reference and corroborate this information to help determine whether the found information should be included in the study or not.

The first data collection step was to use the authoritative U.S. Navy's Office of Naval Intelligence (ONI) China's People's Liberation Army Navy (PLAN) Ship Recognition and Identification Guides from 2024,⁴⁰ 2022,⁴¹ 2020,⁴² 2018,⁴³ and 2015⁴⁴ to help identify PLAN hospital ships from verified information.

The second data collection step was to use five of the largest PRC English language media sources—*China Daily*, *Global Times*, *People's Daily Online*, *People's Military Online*, and *Xinhua*—to search for references about PRC hospital ships using the key word “Hospital Ship” in English.⁴⁵ This step aimed to further corroborate information previously identified in step one as well as hopefully reveal new information. The search was conducted on 31 October 2024.

The third data collection step was to conduct a broad unstructured search of online secondary sources using the Google search engine from a U.S location to further triangulate information about the PRC's hospital ship ecosystem.⁴⁶ Results were investigated for references about PRC's hospital ships using five keywords: “PLA Navy Hospital Ship,” “PLAN Hospital Ship,” “PRC Hospital Ship,” “China Hospital Ship,” and “Chinese Hospital Ship”. Due to time constraints, only records from the first three pages of each Google search were included in this study. The search was conducted on 31 October 2024.

The fourth step of the method was to corroborate the identified information, make a judgement if the information was credible, and finally determining if the information could be included in the study. If information about a vessel was found in all three steps, it would be included in the study without further investigation as the information was deemed to have been corroborated and utilized credible sources—especially the ONI PLAN ship Recognition and Identification Guides. If information on a vessel was found from step one only, or from step one and another step combined, it was determined that the information could be included in the study without further investigation as the information

⁴⁰ ONI, “China People's Liberation Army Navy (PLAN) 2024 Recognition and Identification Guide.”

⁴¹ Office of Naval Intelligence (ONI), “China People's Liberation Army Navy (PLAN), Coast Guard, and Government Maritime Forces 2022-2023 Recognition and Identification Guide,” *U.S. Navy*, December 2022, https://www.oni.navy.mil/Portals/12/2022_PLAN_Recognition_Poster_UNCLASSIFIED_1.pdf

⁴² Office of Naval Intelligence (ONI), “China People's Liberation Army Navy (PLAN), Coast Guard, and Government Maritime Forces 2019-2020 Recognition and Identification Guide,” *U.S. Navy*, October 2019, https://www.oni.navy.mil/Portals/12/Intel%20agencies/China_Media/2020_China_Recce_Poster_UNCLAS.jpg?ver=2020-02-19-081430-327.

⁴³ ONI, “China People's Liberation Army Navy (PLAN), Coast Guard, and Government Maritime Forces 2018 Recognition and Identification Guide.”

⁴⁴ ONI, “China People's Liberation Army Navy (PLAN) and Maritime Law Enforcement (MLE) 2015 Recognition and Identification Guide.”

⁴⁵ The China Daily Website: <https://www.chinadaily.com.cn/>. The Global Times Website: <https://www.globaltimes.cn/index.html>. The People's Daily Online Website: <https://peoplesdaily.pdnews.cn/>. China Military Online Website: <http://eng.chinamil.com.cn/>. Xinhua Website: <https://english.news.cn/home.htm>.

⁴⁶ Google Website: <https://www.google.com/>.

was from the definitive ONI PLAN Ship Recognition and Identification Guides, a source unlikely to be fabricated. If information about a vessel was only found in step 2 or step 3—PRC media sources and a general open search using Google—further investigation would be conducted to either locate primary sources about the identified information or find additional credible academic articles or official reports referencing the information. If no further sources could be found, the information would not be included in the study.

Study Limitations

It is recognized that the study’s method and findings have limitations. The author acknowledges that significant bias is present when using open sources, especially those from state-controlled PRC media or a Google search. For example, information reported by PRC media could be skewed toward how they want to craft their public image, or may miss unreported actions or types of vessels used by the PRC (as would an initial Google search). The author also recognizes that relying solely on English language searches, reviewing just five PRC media sources, and only using a small number of key words also limits what could be found for this study. However, it is hoped that in the future this study could be improved by utilizing Chinese language sources and additional key words. It is also recognized that no study is locked in time and, to keep up with future developments, this study should be updated periodically.

However, despite these limitations, the data in this study should still be considered useful. Not only did the study use several types of official and unofficial open sources to corroborate information, but the use of five PRC media sources still provides a window into how the PRC wants to project how it uses its medical vessel ecosystem in the world.

Data Description

Using the first three data collection steps of the method outlined above, a total of 24 PRC medical vessels were initially referenced in the information collected covering a 22-year period from 28 December 2002 to 25 October 2024.

Step 1 resulted in 40 references about 11 PLAN medical vessels over a nine-year period from February 2015 to April 2024: The identified vessels were:

- 1) PLAN Ship *Peace Ark* (866) Hospital Ship,
- 2) PLAN Ship *Silk Road Ark* (867) Hospital Ship,
- 3) PLAN Ship *Youai* (861) Hospital Ship,⁴⁷
- 4) PLAN Ship *Youhao* (862) Hospital Ship,⁴⁸
- 5) PLAN Ship *Bei Yi* (01) Ambulance Transport Craft,⁴⁹
- 6) PLAN Ship *Nan Yi* (10) Ambulance Transport Craft,⁵⁰

⁴⁷ Referred to as “*Friendship* (861)” in English for this report.

⁴⁸ Referred to as “*Friendly* (862)” in English for this report.

⁴⁹ Referred to as “*North Medic* (01)” in English for this report.

⁵⁰ Referred to as “*South Medic* (10)” in English for this report.

- 7) PLAN Ship *Nan Yi* (11) Ambulance Transport Craft,⁵¹
- 8) PLAN Ship *Dong Yi* (12) Ambulance Transport Craft,⁵²
- 9) PLAN Ship *Dong Yi* (13) Ambulance Transport Craft,⁵³
- 10) PLAN Ship *Nan Kang* (832) Ambulance Transport Ship,
- 11) PLAN Ship *Nan Yi* (09) Ambulance Transport Ship.⁵⁴

Step two resulted in 675 references about eight PRC hospital ships over a date range from 12 December 2002 to 25 October 2024. The identified vessels were:

- 1) PLAN *Peace Ark* (866) Hospital Ship,
- 2) PLAN *Silk Road Ark* (867) Hospital Ship,
- 3) PLAN *Youai* (861) Hospital Ship,
- 4) PLAN *Youhao* (862) Hospital Ship,
- 5) The MV *Global Mercy* hospital ship built by CSSC in Tianjin for a U.S. humanitarian organization,
- 6) One Unnamed Civilian Modular Hospital Ships being built by CSSC in Chengxi for a German humanitarian organization,
- 7) Another Unnamed Civilian Modular Hospital Ships being built by CSSC in Chengxi for a German humanitarian organization,
- 8) Another unnamed civilian maritime rescue ship being built by CSSC in Hongsheng for a PRC humanitarian organization.

Step 3 resulted in 167 references about 18 PRC medical vessels over a 14-year period from June 2010 to August 2024. The ships were:

- 1) PLAN *Peace Ark* (866) Hospital Ship,
- 2) PLAN *Silk Road Ark* (867) Hospital Ship,
- 3) PLAN *Youai* (861) Hospital Ship,
- 4) PLAN *Youhao* (862) Hospital Ship,
- 5) PLAN *Bei Yi* (01) Ambulance Transport Craft,
- 6) PLAN *Nan Yi* (10) Ambulance Transport Craft,
- 7) PLAN *Nan Yi* (11) Ambulance Transport Craft,
- 8) PLAN *Dong Yi* (12) Ambulance Transport Craft,
- 9) PLAN *Dong Yi* (13) Ambulance Transport Craft,

⁵¹ Referred to as “*South Medic* (11)” in English for this report.

⁵² Referred to as “*East Medic* (12)” in English for this report.

⁵³ Referred to as “*East Medic* (13)” in English for this report.

⁵⁴ Referred to as “*South Medic* (09)” in English for this report.

- 10) PLAN *Nan Kang* (832) Ambulance Transport Ship,
- 11) PLAN *Nan Kang* (833) Ambulance Transport Ship,
- 12) PLAN *Bei Kang* (833) Converted Ambulance Ship,
- 13) PLAN *Dong Kang* (834) Converted Ambulance Ship,
- 14) PLAN *Zhuang He* (865) Modular Medical Unit Ship,⁵⁵
- 15) PLAN *Shichang* (82) Modular Medical Unit Ship,⁵⁶
- 16) PLAN Project 320 Ob Class Hospital Ship,
- 17) PLAN unnamed catamaran,
- 18) Likely PLAN operated *Yanyu* (681) converted fishing boat.

For a detailed breakdown of the information found from each step, see Table 5 below.

Table 5. Details of the numbers of records, references to PRC medical vessels, and the names of vessels found using the four-step method applied to this study.

| SOURCE | DATE RANGE OF RESULTS | NO. INITIAL RESULTS | NO. REFERENCES TO PRC MEDICAL VESSELS | VESSELS NAMED |
|--|-----------------------|---------------------|---------------------------------------|--|
| U.S. Navy ONI PLAN 2024 Recognition & Identification Guide | 2024 | 1 Record | 9 References | - <i>Peace Ark</i> (1 record) - <i>Silk Road Ark</i> (1 record) - <i>Youai</i> (1 record) - <i>Youhao</i> (1 record) - <i>Bei Yi</i> 01 (1 record) - <i>Nan Yi</i> 10 (1 record) - <i>Nan Yi</i> 11 (1 record) - <i>Dong Yi</i> 12 (1 record) - <i>Dong Yi</i> 13 (1 record) |
| U.S. Navy ONI PLAN 2022 Recognition & Identification Guide | 2022 – 2023 | 1 Record | 9 References | - <i>Peace Ark</i> (1 record) - <i>Silk Road Ark</i> (1 record) - <i>Youai</i> (1 record) - <i>Youhao</i> (1 record) - <i>Bei Yi</i> 01 (1 record) - <i>Nan Yi</i> 10 (1 record) - <i>Nan Yi</i> 11 (1 record) - <i>Dong Yi</i> 12 (1 record) - <i>Dong Yi</i> 13 (1 record) |

⁵⁵ Referred to as “*Village River* (865)” in English for this report.

⁵⁶ *Shichang* (82) is named after a PRC historical figure Captain Deng Shichang of the Imperial Chinese Navy, who lived between 1849–1894.

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|--|----------------------------|---------------|----------------|---|
| U.S. Navy ONI PLAN 2020 Recognition & Identification Guide | 2019 – 2020 | 1 Record | 7 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (1 record) - Unspecified no. of Anshen class hospital ships (1 record) - <i>Bei Yi</i> 01 (1 record) - <i>Nan Yi</i> 10 (1 record) - <i>Nan Yi</i> 11 (1 record) - <i>Dong Yi</i> 12 (1 record) - <i>Dong Yi</i> 13 (1 record) |
| U.S. Navy ONI PLAN 2018 Recognition & Identification Guide | 2018 | 1 Record | 7 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (1 record) - Unspecified no. of Anshen class hospital ships (1 record) - <i>Bei Yi</i> 01 (1 record) - <i>Nan Yi</i> 10 (1 record) - <i>Nan Yi</i> 11 (1 record) - <i>Dong Yi</i> 12 (1 record) - <i>Dong Yi</i> 13 (1 record) |
| U.S. Navy ONI PLAN 2015 Recognition & Identification Guide | 2015 | 1 Record | 8 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (1 record) - <i>Bei Yi</i> 01 (1 record) - <i>Nan Yi</i> 10 (1 record) - <i>Nan Yi</i> 11 (1 record) - <i>Dong Yi</i> 12 (1 record) - <i>Dong Yi</i> 13 (1 record) - <i>Nan Kang</i> 832 (1 record) - <i>Nan Yi</i> 09 (1 record) |
| <i>China Daily</i> | 28 Dec 2002 – 13 Sep 2024 | 1,889 Records | 270 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (262 records) - One PRC built hospital ship for a U.S. client (3 records) - Two un-named PRC built converted modular medical unit ships for a German client (2 records). - <i>Silk Road Ark</i> (2 records) One un-named PRC built civilian medical rescue ship for a PRC client (1 record). |
| Global Times | 15 Jan 2010 – 27 Aug 2024 | 222 Records | 163 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (157 records) - <i>Youai</i> (3 records) - <i>Youhao</i> (2 records) - <i>Silk Road Ark</i> (1 Record) |
| People’s Daily | 23 Sep 2018 – 15 July 2024 | 60 Records | 31 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (25 records) - One PRC built hospital ship for a private U.S. client (3 records) - <i>Youhao</i> (2 records) - <i>Silk Road Ark</i> (1 record) |

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|--------------------------|------------------------------|-------------|----------------|---|
| People's Military Online | 29 Jun 2018 – 25 Oct 2024 | 243 Records | 181 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (165 records) - <i>Silk Road Ark</i> (6 record) - <i>Youai</i> (6 records) - <i>Youhao</i> (4 records) |
| Xinhua | 17 Nov 2022 – 25 Aug 2024 | 34 Records | 31 references | <ul style="list-style-type: none"> - <i>Peace Ark</i> (30 records) - <i>Silk Road Ark</i> (1 record) |
| Google Search Results | Jun 2010 – August 2024 | 124 Records | 168 References | <ul style="list-style-type: none"> - <i>Peace Ark</i> (111 records) - <i>Youai</i> (8 records) - <i>Youhao</i> (7 records) - <i>Nan Yun</i> 832 (7 records) - <i>Nan Kang</i> 833 (6 records) - <i>865 Zhuang He</i> (5 records) - <i>82 Shichang</i> (4 records) - <i>Silk Road Ark</i> (2 records) - <i>Bei Kang</i> (2 records) - <i>Dong Kang</i> (2 records) - Project 320 Ob Class (2 records) - <i>Bei Yi</i> 01 (2 records) - <i>Nan Yi</i> 10 (2 records) - <i>Nan Yi</i> 11 (2 records) - <i>Dong Yi</i> 12 (2 records) - <i>Dong Yi</i> 13 (2 records) - Unnamed catamaran (1 record) - <i>Yanyu</i> 681 converted fishing boat (1 record) |

About the Author

Jonathan Robinson is an assistant professor in International Programs at the U.S. Naval War College. A specialist in multinational civilian-military interaction, conflict analysis, and human security for over 15 years, Jonathan spent nearly a decade working in conflict and post conflict environments in the Middle East with numerous civil society, humanitarian, peacebuilding, and private security organizations. Jonathan holds a Masters in Islamic and Middle Eastern studies from the University of Edinburgh and an undergraduate degree in archaeology from Durham University. Since 2018, his research interests have focused on the actions of the People's Republic of China (PRC) and Russia in humanitarian settings.

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