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Rapidly Implementing a Chinese Data Security Regime

By Elizabeth Chen

Introduction

The Cyberspace Security Review Office (网络安全审查办公室, *wangluo anquan shencha bangongshi*) of the Cyberspace Administration of China (CAC, 国家互联网信息办公室, *guojia hulianwang xinxi bangongshi*) launched a cybersecurity review of the Chinese ride-hailing giant Didi Chuxing on July 2, days after it had listed on the New York Stock Exchange. On July 4, the CAC announced that it had found “serious violations of the collection and use of personal information” by Didi and banned the app on online platforms. The next day, the cybersecurity review office reported that it had launched similar investigations on “national security” grounds into the logistics apps Yunmanman (运满满) and Huochebang (货车帮), as well as the

recruiting app BOSS Zhipin (BOSS直聘), which had all recently listed in the U.S. ([South China Morning Post](#), July 5).



Image: A screenshot of the CAC's announcement that it will conduct cybersecurity reviews into three companies that recently listed abroad, based on concerns that the export of Chinese data could impact “national security” and “public interest” (Source: [Sohu](#)).

Media reports earlier this year indicated that Chinese regulators were increasing their focus on data security, targeting the American electric vehicle company Tesla over concerns that the company's user data collection could infringe upon privacy and national security concerns. While Tesla refuted these claims, it also promised to develop a China-based data center and increase transparency to appease the Chinese government ([CNET](#), May 24). It now appears that, in combination with an anti-monopoly campaign that has particularly targeted financial technology (fintech) companies such as Alibaba and Tencent, data security represents the latest field in which the state is seeking to tighten its control over a sector that was once notorious for its loose regulation. Didi, along with nine other industry leaders in on-demand transport services, was also cited by the powerful State Administration for Market Regulation (SAMR) in May ([Caixin](#), July 5).

An Evolving Legal Framework for Data Security

On July 10, the CAC released a draft revision to the Cybersecurity Review Measures ([网络安全审查办法], *Wangluo anquan shencha banfa*, hereafter “Measures”) ([Cac.gov.cn](#), July 10), which laid out a system of security reviews for any products and services used by “critical information infrastructure” (关键信息基础设施, *guanjian xinxi jichu sheshi*) operators in China. Article 1 of the revised Measures noted that they were in accordance with the 2015 National Security Law (NSL, [国家安全法], *Guojia anquan fa*), the 2017 Cybersecurity Law (CSL, [网络安全法], *Wangluo anquan fa*), and also the Data Security Law (数据安全法, *Shuju anquan fa*), newly promulgated in June ([Cac.gov.cn](#), July 10; [Xinhua](#), June 11). In combination with the Personal Information Protection Law (PIPL, [个人信息保护法], *Geran xinxi baohu fa*), which is

expected to be published later this year, the CSL and DSL make up the basic legal framework system for governing the Chinese Internet.

The largest change in the revised Measures came in a newly added Article 6, which clarified that companies handling the data of more than 1 million users listing in foreign markets must undergo a cybersecurity review. Apart from this, the revised Measures also included updated language about the risk that companies listing overseas could expose “core data, important data or large amounts of personal information” to being “stolen, leaked, damaged, or illegally used and exported...or [be] maliciously used by foreign governments” ([DigiChina](#), July 12). The state’s concerns were made even more bluntly by a foreign ministry spokesperson, who recently complained about the U.S. government’s nontransparent data collection practices and concluded, “the U.S. is the biggest threat to global cybersecurity” ([Global Times](#), July 5).

According to Lu Chuanying (鲁传颖), director of the Cyberspace International Governance Research Center at the Shanghai Institute of International Studies, while the PIPL aims to treat data security issues from an individual-centered privacy perspective, the DSL is aimed at ensuring Chinese data sovereignty from the perspective of the state. Lu argued that the implementation of the two laws would need to be closely coordinated to effectively manage China’s complex data security issues while simultaneously leaving room for the continuing development of data as an economic resource ([Global Times](#), May 27, 2020). A State Council opinion from 2020 similarly noted that data should be considered a “fifth productive factor” necessary to stimulate market vitality and economic development, alongside land, labor, capital, and science and technology ([Xinhua](#), April 9, 2020).

In an effort to balance the competing interests of security and development, the final draft of the DSL called for the establishment of a data classification system that protects “core” and “important” data while also allowing less sensitive data to circulate and boost the digital economy. Still, because the legal definitions of what constitutes “core” data remain vague, ambiguity remains high. The recent crackdown against Didi and other companies engaged in cross-border data transfers appears to signal that when it comes to data that is circulated outside of China, regulators have chosen to prioritize security ([SCMP](#), July 11).[1]

Development vs. Controllability

New guidance jointly published by the General Offices of the Chinese Communist Party (CCP) Central Committee and the State Council on July 6, titled “Opinion on Strictly Cracking Down on Illegal Securities Activities in Accordance With the Law” ([关于依法从严打击证券违法活动的意见], *Guanyu yifa congyan daji zhengquan weifa huodong de yijian*) ([Xinhua](#), July 6), sought to strengthen interagency oversight and elevate the role of the CAC in overseeing Chinese technology firms with large data businesses.

A commentary published by the powerful Central Commission for Discipline Inspection (CCDI) made the document’s intentions clear: in the government’s eyes, data is closely related to national security and must be

controlled. Although the huge amount of user data generated by internet companies has the potential to add economic value, issues such as cross-border data flows and data leakage also pose a major security risk to the state (NPC.gov.cn, July 7). According to Xu Ke, a law professor at the University of International Business and Economics, the free flow of data enshrined in the 2021 DSL is circumscribed by an equally important concept: the secure flow of data ([Quartz](http://Quartz.com), July 7). While these two concepts should ideally be balanced against one another, the early implementation of China's data security regulations shows that they remain in conflict, causing confusion among data producers (i.e., technology companies) and consumers alike.

At the 2021 China Internet Conference, participants called data the “core production factor of the digital economy,” and a keynote speaker called on Chinese companies to also participate in data governance, noting that the coordination for data management within the existing state bureaucracy remains opaque and that the technical systems for data collection and application remain immature. As a result, one researcher noted, evaluation, including self-inspection on the part of data companies, will be a key aspect to improving the data security governance regime (People's Daily Online, July 16).

Conclusion

In many ways, the complex debates over data security that are taking place in China right now mirror discussions that are being held around the world. The venture capitalist Lillian Li has noted that although there is a global conversation happening about the “need to rebalance power between state, tech[nology] players and consumers [that] calls for more regulatory intervention,” China's legal and economic frameworks are also relatively underdeveloped. As a result, Li notes, “A key theme that runs through Chinese tech is that as a developing country with under-developed institutions, technology isn't augmenting existing institutions, but creating them” (Lillian Li via Substack, July 15). Now Chinese regulators are still working to catch up to established Western practices even as they deal with some of the world's most expansive data collection networks.

On some issues, such as consumer privacy, Chinese laws are at the cutting edge of global data regulatory frameworks (DigiChina, January 4), and the state's antitrust and data security crackdowns against domestic technology companies appear to be responsive to citizens' concerns about market competition and privacy. But China's support for data localization and cyber sovereignty also risk splintering international free data flows, which would hurt development both inside and outside of China. In addition, although Chinese regulators are in the process of establishing a robust framework to hold companies' data collection accountable, the extent to which its laws will apply to state organs' data collection remains very much in question (Brookings, January 29).

China's 14th Five Year Plan for development highlighted the importance of accelerating “informatization” and the construction of China as a “digital superpower,” which theoretically includes the sharing and public disclosure of government-held data (Cac.gov, March 15; Gov.cn, July 27, 2016). But the recent revelation

that an official online database of Chinese court data inexplicably shrunk by close to 10 percent has raised concerns for activists about the transparency of China's informatization initiatives ([China Digital Times](#), June 29). Under CCP General Secretary Xi Jinping, the increasingly authoritarian Chinese state has worked to undermine freedom of expression, rule of law, universal human rights and civil society's ability to hold the government accountable, often with the aid of intrusive surveillance technologies. Given this reality, it is unlikely that the state's rapidly developing data security regime will be able to meaningfully protect citizens against government overreach and abuse.

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Notes

[1] Other governments are also wrestling with the question of determining what types of data constitute a national security concern. In the U.S., despite the government signaling last summer that it would ban the popular video-sharing app TikTok over national security concerns, a recent technical analysis by the Canadian research group CitizenLab found that TikTok did not appear to demonstrate overtly malicious behavior, and that its user data practices appeared to be in line with Western industry norms ([CitizenLab](#), March 22).

Expanding and Escalating the China-Bhutan Territorial Dispute

By Sudha Ramachandran

Introduction

At the 10th Expert Group Meeting on the Bhutan-China Boundary Issue, held from April 6 to 9 in Kunming, Yunnan Province, the People's Republic of China (PRC) and the Kingdom of Bhutan agreed to hold the 25th round of boundary talks at a “mutually convenient time as soon as possible” ([PRC Ministry of Foreign Affairs](#) (MFA), April 9). The last round of talks was held in April 2016, and the next round was apparently put off first due to the Doklam crisis in 2017 and then delayed because of Bhutan's general elections and a change in government the following year ([The Bhutanese](#), October 26, 2019).

Meanwhile, the Sino-Bhutanese border dispute has become more complicated, with China escalating its claims and taking robust steps to change the status quo on the ground. According to Smruti S. Pattanaik, an Indian analyst on South Asian security issues, “it is very likely that China will raise its new territorial claims [at the upcoming border talks] as a pressure tactic.”^[1] The talks will be closely monitored not just in Beijing and Thimphu but also in New Delhi. Under the 2007 India-Bhutan Treaty of Friendship, India is virtually responsible for Bhutan's security ([India Ministry of External Affairs](#), March 5, 2007). Additionally, China's claims to territories in Bhutan have major implications for India's national security and territorial integrity.



Image: Members of the Gyalaphug Joint Defense Team (杰罗布村联防队, Jieluobu lian fang dui) take part in a border patrol in 2020. While Chinese sources have claimed that Gyalaphug lies on the border, foreign analysts have argued that it sits several miles inside Bhutanese territory (Source: [Tibet Daily](#)).

The Border Dispute

Apart from India, Bhutan is the only country with which China has an unsettled land border. Thimphu is also the only neighboring country with which Beijing does not have official diplomatic and economic relations, although the two countries have been engaged in border talks since 1984. Two agreements—one on the guiding principles on the settlement of the boundary issues reached in 1988, and the other on maintaining peace and stability in the China-Bhutan border area reached in 1998, provide the basis of the ongoing negotiations ([Bhutan Ministry of Foreign Affairs](#) (MFA), June 29, 2017, [Global Times](#), April 9). According to Pattanaik, China and Bhutan “have successfully completed the joint survey of the disputed areas but are yet to reach a comprehensive agreement on [the] demarcation of the boundary.”[2]

The Sino-Bhutanese border dispute has traditionally involved 295 square miles (sq mi) of territory, including 191 sq mi in the Jakurlung and Pasamlung valleys in northern Bhutan and another 104 sq mi in western Bhutan that comprise the areas of Doklam, Sinchulung, Dramana and Shakhatoe. These territories were discussed during the past 24 rounds of border talks and included in a “package deal” dispute resolution proposal that China put to Bhutan in 1996. Under this deal, the PRC offered to renounce its claims to the Pasamlung and Jakurlung valleys in northern Bhutan in return for Thimphu ceding territory in Doklam to Beijing ([The Bhutanese](#), July 1, 2017).

Escalating Claims

China has recently expanded its territorial claims beyond the disputed regions in northern and western Bhutan. In June 2020, at a virtual meeting of the U.S.-based environmental finance group Global Environment Facility (GEF), a Chinese delegate opposed Bhutan’s application to fund a project in the Sakteng Wildlife Sanctuary, located in Bhutan’s eastern district of Trashigang. The Chinese delegate claimed that the sanctuary lay in “the China-Bhutan disputed areas” that were on “the agenda of [the] China-Bhutan boundary talk[s]” ([The GEF](#), July 16, 2020). Following this, the Chinese foreign ministry issued a statement to the Indian newspaper *Hindustan Times*, saying that “disputes over the eastern, central and western sectors” of the China-Bhutan border had existed “for a long time” ([Hindustan Times](#), July 5, 2020). In response, Bhutan stated at the GEF that Sakteng “is an integral and sovereign territory of Bhutan,” and its foreign ministry later issued a formal complaint to the Chinese embassy in New Delhi. Signed minutes of prior border talks had made no mention of Sakteng, according to Bhutanese sources ([Hindustan Times](#), July 5, 2020), and there is little cartographic evidence supporting China’s claim to Sakteng in Chinese sources as well.[3]

Altering the Status Quo on the Ground

In addition to expanding its territorial claims, the PRC has also worked to unilaterally change the status quo on the ground through an array of measures, ranging from sending Tibetan grazers and military patrolling teams into disputed areas to building roads and even military structures in contested territory ([Takshashila](#)

[Institution](#), July 2020). Reports of Chinese incursions into disputed Bhutanese territory are not new; incursions into Doklam were reported as far back as 1966 ([Global Times](#), August 12, 2017). In 1979, “intrusions were found to be on a larger scale than in former years,” prompting the start of the ongoing border talks. [4] Incursions into Bhutanese territory were particularly serious during the years 2008-2009: 21 incursions by the People’s Liberation Army (PLA) were reported to have happened in 2008 and 17 in 2009 ([Observer Research Foundation](#) (ORF), August 9, 2017).

Previously, Chinese infrastructure building in Doklam consisted of rather rudimentary dirt track roads, but since 2017 it has begun building permanent structures in the region. This paralleled a 2017 campaign to develop more than 600 “well-off border villages” (边境小康村, *bianjing xiaokang cun*) in China’s Tibetan Autonomous Region (TAR); the Tibetan infrastructure campaign has been closely linked with domestic policy priorities such as poverty alleviation and rural revitalization.[5] On June 16, 2017, the PLA began constructing a motorable road from Dokala in the Doklam area toward the Bhutan Army camp at Zompelri.[6] This triggered a 73-day standoff between the Chinese and Indian militaries at the China-India-Bhutan trijunction area. Even after both sides agreed to pull back, China continued to construct permanent installations in the disputed territory. Satellite images taken half a year later revealed concrete structures; bunkers and trenches; and even a military complex with helipads ([NDTV](#), January 17, 2018). Geospatial data from last year showed that China had built a village called Pangda (庞大村), a little over one mile inside Bhutanese territory, just 5.6 miles from the 2017 Doklam standoff site ([NDTV](#), November 20, 2020). Indian military experts argued that the new village is not purely civilian, as is claimed by Chinese media ([Global Times](#), November 23, 2020), but instead one “meant for military purposes” ([Takshashila Institution](#), January 4, 2021). Most recently, satellite imagery analysis has indicated at least three more Chinese-built villages, Gyalaphug (杰罗布, *Jieluobu*), Dermalung (德玛隆, *Demalong*), and Menchuma (民久玛/马, *Minjiuma*), as well as multiple additional military outposts that have been constructed in disputed areas in northern Bhutan ([Foreign Policy](#), May 7).

Importance of Territory Claimed by China

The historically disputed territory in northern and western Bhutan is relatively small. However, the new Chinese claim in eastern Bhutan is said to be around 2,051 miles, or 11 percent of Bhutan’s total area ([ORF](#), July 9). The disputed territory in western Bhutan consists of rich pasture land that has been the site of historic conflicts between Tibetan and Bhutanese herders ([IDSA Comment](#), January 19, 2010) and could have potential for economic development. Nevertheless, it is primarily the immense strategic significance of the Doklam Plateau that is driving China’s territorial claims and aggressive infrastructure building in western Bhutan. The plateau is located on the southeast side of the trijunction area. Indian military experts say that under Bhutan’s control, Doklam gives India a “major terrain advantage” over China vis-à-vis the Chumbi Valley, allowing India the advantage of carrying out a strategic offensive or counteroffensive against China from Sikkim ([News Laundry](#), July 8, 2017). Should Doklam be controlled by China, India would lose that advantage. Importantly, control over Doklam would also give China a foothold from where it could strike the Siliguri Corridor, a tenuous sliver of territory that connects India’s conflict-ridden northeastern states to the

rest of the country. Therefore, Chinese control over Doklam has grave implications for India's national security and territorial integrity.

China's most recent territorial claims in Sakteng are of immense strategic value. The area adjoins the Indian state of Arunachal Pradesh, which contains disputed territory between China and India. Tawang, a key bone of contention between India and China in the eastern sector of the Line of Actual Control (LAC), lies to Sakteng's northeast and is vital to Indian border defense. Control over Doklam and Sakteng together will give China significant military advantages in dealing with India in the eastern sector of the LAC. India plans to build a road from Guwahati to Tawang via the Sakteng Wildlife Sanctuary, which will reduce travel distance and strengthen its ability to speed up the overland mobilization of troops to the disputed Sino-Indian border. China may have added Sakteng to its claimed territories in an effort to pre-empt India's plans for the Guwahati-Sakteng-Tawang road ([Asian Affairs](#), August 1, 2020).



Image: A map of territory that is under dispute between China and Bhutan, including potential new Chinese claims to Sakteng, in eastern Bhutan. Sakteng and Doklam are of strategic significance to India, which also has a disputed border with China along the Line of Actual Control (LAC) (not shown) that extends around Bhutan. (Source: [Stratnews Global](#)).

Mirroring the South China Sea Strategy

Parallels are being drawn between China's expansionism in Bhutan and in the South China Sea ([Japan Times](#), March 21). In the South China Sea, China has built and fortified islands to strengthen its claims over disputed waters. In Bhutan, the construction of roads and other permanent structures, including villages and military installations, is aimed at unilaterally altering the status quo in China's favor. According to some observers, this strategy seems aimed at presenting "Bhutan with a fait accompli" ([Takshashila Institution](#),

January 2021). Indeed, Indian analysts “see a pattern in China’s behavior.” It is not just in the South China Sea and Bhutan but also in Ladakh in the western sector of the LAC that the PRC is “is slowly changing the status quo” on the ground “in its favor.”[7]

Conclusion

China’s territorial claims in Bhutan are expanding, and the strategy that it has adopted to press its claims is increasingly aggressive. Of the three areas in Bhutan that China claims, areas in western and eastern Bhutan have immense strategic value to India and China. As part of its efforts to develop and stabilize the TAR, China has dramatically increased its investment in border infrastructure ([China Brief](#), December 6, 2020; [Xinhua](#), June 25). A recent white paper on Tibet that, “In the new era...the borders are secure. Everywhere in Tibet is thriving and prospering” ([Gov.cn](#), May 21). It also appears that Beijing’s aggressive building of entire villages in northern Bhutan is aimed at imposing heavy pressure on Thimphu to cede to Chinese demands, especially in the western sector. China’s territorial demands in Bhutan are driven not by strategic or economic threats emanating from Bhutan, but instead by Beijing’s ambitions in its territorial dispute with India. The recently expanded territorial claims in Sakteng are likely to be raised by China in the proposed 25th round of boundary talks between China and Bhutan. Whether or not Bhutan will contest China’s construction of entire villages for civilian and military use within its historic territory remains to be seen.

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Notes

[1] Author’s interview with Smruti S. Pattanaik, Research Fellow at the Manohar Parrikar Institute for Defense Studies & Analyses in New Delhi, India, on July 1, 2021.

[2] Ibid.

[3] “Chinese maps do not show Sakteng or nearby areas in Bhutan as Chinese territory,” according to the China security expert M. Taylor Fravel, <https://twitter.com/fravel/status/1279962377413419013>.

[4] Thierry Mathou, “Bhutan-China Relations: Toward a New Step in Himalayan Politics,” in Ura, Karma and Sonam Kinga (eds.), *The Spider and the Piglet* (Proceedings of the First International Seminar on Bhutan Studies) (Thimphu: The Centre for Bhutan Studies, 2004), p. 399. <http://www.bhutanstudies.org.bt/publicationFiles/ConferenceProceedings/SpiderAndPiglet/19-Spdr&Pglt.pdf>

[5] A recent white paper on Tibet explicitly linked the project of improving border prosperity (兴边富民, *xingbian fumin*) to larger development goals for the region, noting that since 2017 China has worked to improve “housing, water, electricity, roads, communication and Internet [access]” in border areas ([Gov.cn](#), My 21).

[6] While the Bhutanese government maintained that the road [lay] inside Bhutanese territory and “is a direct violation of the [1988 and 1998] agreements and affects the process of demarcating the boundary” between the two countries ([Bhutan MFA](#), August 6, 2017), the PRC insisted that “Doklam has been a part of China since ancient times” and “is an indisputable fact supported by historical and jurisprudential evidence, and the ground situation.” China's construction of [a] road in Doklam is an act of sovereignty on its own territory, it said ([PRC MFA](#), June 28, 2016).

[7] Interview with Pattanaik, July 1, 2021.

The PLA's Critical Assessment of the Agile Combat Employment Concept

By Derek Solen

Introduction

From April to May 2021, the U.S. Air Force (USAF) conducted a second exercise to test the Agile Combat Employment (ACE) concept and also committed to training units to implement ACE ([U.S. Air Force](#), May 15; [Air Combat Command](#), May 12). ACE is the method by which the USAF intends to counteract the capabilities of adversaries such as Russia and the People's Republic of China (PRC) to strike its airbases and, ultimately, deny the USAF access to theaters of operations along their peripheries. These are generally referred to as “anti-access and area denial” capabilities. ACE, in combination with similar efforts by other U.S. military services, aims to improve America's military advantage and its deterrence capability against Moscow's and Beijing's increasing aggression in Europe and East Asia.

It is important to understand how America's adversaries are perceiving and planning to counteract ACE. This article analyzes the People's Liberation Army's (PLA) publicly available assessment of ACE. Although there is a dearth of sources, the available information shows that the PLA perceives exploitable weaknesses in ACE.



Image: Chinese media reporting noted a recent “large-scale exercise” held in Guam intended to test the “Agile Combat Employment” concept and maintain military superiority in all parts of the world. (Source: [163.com](#)).

The Imperative of ACE

Because air power is dependent on airfields, the USAF's small network of airbases is its greatest weakness in the Asia-Pacific. The USAF has six bases in the region from which to project airpower: Osan and Kunsan

Air Bases in the Republic of Korea (ROK); Misawa, Yokota, and Kadena Air Bases in Japan; and Anderson Air Base on Guam. These bases will also function as primary logistical hubs for operations in the early phases of a war. In the event of a Sino-American war over Taiwan, for example, it is unlikely that Seoul would allow U.S. forces to engage in hostilities with the PRC from bases in the ROK, and Anderson Air Base is approximately 1,700 miles from Taiwan, more than four times the average fighter aircraft's combat radius. Therefore, the PLA would only have to concentrate strikes on the three airbases in Japan to incapacitate the USAF. Each of those bases—and even Anderson Air Base—is within range of the PLA's conventional cruise and ballistic missiles.

ACE is an attempt to resolve this predicament principally through dispersed deployment. It involves a network of airfields arranged in “clusters” in which major bases, such as the six bases above, will function as hubs, and a combination of smaller military airfields, civilian airports, and even temporary airstrips will function as spokes. Materiel pre-positioned at these spokes in what are called Regional Base Cluster Pre-positioning (RBCP) kits will ensure that they can independently sustain operations for a period of time. The USAF only intends to disperse units in the early phases of a war—long enough to eliminate the threats to its major bases or at least to absorb the hail of missiles. By presenting many more targets, the USAF should prevent the PLA from achieving significant effects by concentrating strikes on a small number of airbases.

Finding PLA Assessments of ACE

The search for PLA sources concerning ACE was limited to official media that is publicly available on the Internet. It is worth noting that the PLA media's publication or broadcasting of an idea does not necessarily make it orthodoxy: the nature of the topic, the column or segment, and the status of the author or speaker must all be considered when assessing authoritativeness. At the same time, PLA media are not open forums, and commentary never expresses heterodox or “incorrect” views. Only views that are judged to be worthy of consideration are published.

PLA Assessment of ACE

Only one source assessing (not mentioning or explaining) ACE was found. This was a July 2020 article published in the regular Global Military Affairs section of *Liberation Army News* (解放军报, *jiefang jun bao*), the mouthpiece of the Central Military Commission (CMC) that exercises administrative and operational control over the PLA and is roughly equivalent to the U.S. Department of Defense. The article's three coauthors, Yuan Yi (袁艺), Xu Wenhua (徐文华), and Xu Jinhua (徐金华), are identified as belonging to the War Research Institute of the Academy of Military Science (军事科学院战争研究院, *junshi kexue yuan zhanzheng yanjiuyuan*), which is the PLA's specialized institution for “researching war and designing war,” i.e., researching warfare, developing operational concepts and doctrine, and designing operations ([Liberation Army News](#), May 14, 2019; [Liberation Army News](#), June 21, 2018).[1] PLA media infrequently indicate author affiliation, so the fact that the authors were identified as belonging to the War Research

Institute could indicate that the article reflects institutional opinion. Regardless, because the War Research Institute is likely responsible for devising the strategy and designing the operations that would counteract ACE, the views of its members—particularly as published in the PLA's mouthpiece—are likely to influence that strategy and those operations.

Yuan, Xu, and Xu correctly characterize the purpose of ACE to be reducing the risk to the USAF's operations from adversaries' "medium- and long-range" strikes through temporary and dispersed deployment, effectively making it more difficult for an adversary to "control the air by land" ([Liberation Army News](#), July 2, 2020). It is noteworthy that the authors did not criticize the distributed employment idea underlying ACE, which likely indicates that they regard it as sound.[2]

The authors raise three weaknesses of ACE. First, they remark that regional countries might not permit the USAF to use their airfields for military operations due to the risk of consequent counterstrikes, writing, "It is uncertain whether even so-called 'reliable' allies [almost certainly a reference to Japan] will consent or not to American military aircraft's taking off from within their borders to go attack a third country with which they themselves are not in direct conflict," ([Liberation Army News](#), July 2, 2020). Second, they argue that ACE will not reduce the USAF's reliance on permanent bases. Because both the number of fighters and sorties that a RBCP kit can sustain and the length of time that it can do so is "limited," units at small, temporary bases will ultimately rely on support from large, permanent bases that will retain a "nodal function," and that "once an adversary paralyzes those large bases, then the effect of small, temporary bases will be greatly reduced" ([Liberation Army News](#), July 2, 2020). Third, they suggest that an adversary could counteract ACE by shortening the time necessary to complete its kill chain: "If an adversary forward-deploys its maritime and aerial reconnaissance and strike platforms, [...] then it is completely possible for the adversary to grasp the brief window [of opportunity] during which American aircraft have landed at small, frontline airfields to conduct precision strikes" ([Liberation Army News](#), July 2, 2020). The authors reason that because the small, temporary airfields will "basically" have "zero" defenses, once an adversary locates American aircraft, "all that will remain for them is to suffer a beating" ([Liberation Army News](#), July 2, 2020).

Analysis of the PLA Assessment of ACE

These three weaknesses can be analyzed in the order of their validity and their importance. First, like ACE itself, shortening one's kill chain is easier said than done. Maritime and aerial reconnaissance and strike platforms lack the persistence to detect all the movements of the USAF's units, and it is overly optimistic to think that they can be forward-deployed without being exposed to attack. While it is true that the point defense of many more airfields would be a challenge—and often probably impossible—dispersed and *dynamic* deployment is itself a defensive measure that will confound an adversary's intelligence, surveillance, and reconnaissance, which should make point defense less necessary. It is worth mentioning that the PLA may not have to rely on its own surveillance and reconnaissance systems. Aviation enthusiasts and anti-base activists, such as Rimpeace in Japan, may reveal enough information before or while units are dispersed,

enabling the PLA to formulate a smaller set of targets on which to concentrate strikes and thereby achieve greater effects. To compensate, the USAF intends to shift units among the spokes faster than an adversary can complete its kill chain.

The authors' remarks concerning logistics are basically correct. Logistics networks cannot avoid having critical nodes, i.e., ports and depots. It is theoretically possible to disperse the USAF's logistics network across the Pacific Ocean, thereby placing most critical nodes outside the range of the PLA's conventional ballistic missiles. However, men and materiel can only be transported across the ocean by air or by sea, and the ocean presents few options for storage and transshipment. Moreover, transporting supplies directly to each spoke would severely strain the USAF's airlift units. Of course, the USAF does not intend to disperse its units indefinitely; the plan is for the RBCP kits and some other in-theater assets to enable units to operate until they can be safely resupplied through the more efficient, established logistics network.

The challenge for the USAF is to survive the PLA's attacks and to eliminate the threats to its major bases before its supplies run out; the challenge for the PLA is to preserve its missile launch units and conserve its missiles for as long as it takes for the USAF's dispersed units to exhaust their supplies. All of the PLA's conventional ballistic missile systems are road-mobile, so the PLA's launch units will be employed as agilely as the USAF's units in order to increase their survivability. It would be prudent for the USAF to build redundant, concealed depots in the theater of operations from which materiel can be transported to each spoke over shorter distances by land. The USAF would thereby extend the time that its units can operate while dispersed across the theater. However, building additional military facilities in an allied country would require the assent of that country's government, which leads to the topic of allied cooperation.

The authors implicitly, and correctly, identify regional allies—particularly Japan—as the U.S. armed forces' center of gravity in any war in East Asia, raising the very real possibility that ACE can be defeated principally through political or diplomatic, rather than military, means. For that very reason, it is crucial for the USAF to be able to disperse its units across multiple locations in multiple countries. Doing so would frustrate any effort by Beijing to diplomatically thwart U.S. intervention in the region and it would complicate PLA plans to invade Taiwan. The more countries that host the USAF's dispersed units, the greater the dilemma that Beijing will face: On the one hand, should Beijing attack the USAF's units that are stationed in third countries, it risks the possibility that these countries would consequently be drawn into a conflict over Taiwan on America's side. On the other hand, if Beijing disregards those units to decrease the likelihood that those countries would participate directly in the defense of Taiwan, does it effectively give the USAF a free hand to operate from those countries? Because the U.S. already has military alliances with Japan, the ROK, and the Philippines, which are all close to Taiwan, it would be ideal if the USAF could disperse its units among airfields in these three countries. But Washington, not the USAF, will have to convince Tokyo, Seoul, and Manila that their interests are better served in the current regional order, not in the one that will result from America's failure to defend Taiwan from annexation.

Conclusion

All in all, the PLA's first public assessment of ACE is valid. Its authors overstated the ease of detecting and striking dispersed, constantly moving units. They are correct, however, that supplying those units beyond a relatively brief period of time will be extremely difficult, and that critical nodes will inevitably continue to exist in the USAF's logistics network. It will not be impossible for the PLA to counteract ACE by preserving its missile launch units and concentrating strikes against the USAF's logistics network instead of combat units.

It is advisable for the USAF to increase the redundancy of depots in the theater of operations so that the spokes of each regional cluster can be resupplied over shorter lines of communication, extending the time that the USAF's combat units can operate while dispersed across the theater. The authors are also correct that ACE depends entirely on the cooperation of American allies, so the most effective strategy for counteracting ACE will be diplomatic, not military. Just as ACE will be key to maintaining our military advantage over the PLA and deterring the PRC from invading Taiwan, diplomacy and resolute foreign policy will be key to ensuring ACE's success. There is strength in numbers. A multilateral coalition whose purpose is to defend Taiwan will do as much to deter Beijing as it would to ensure the effective implementation of ACE.

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Notes

[1] It is tempting to interpret “war design” as “operational design,” but the PLA's war design seems to be more extensive, even encompassing national military strategy. In the particular case of the PLA, the War Research Institute's role is likely limited to operational design because planning joint operations is the responsibility of the Central Military Commission's Joint Staff Department ([Liberation Army News](#), June 21, 2018).

[2] *Liberation Army News* recently published an article that argued, based on the same premise underlying ACE, that distributed employment is a “basic requirement” for ensuring survivability in future wars ([Liberation Army News](#), May 18, 2021).

**Implications of 2020 and 2021 Chinese Domestic Legislative Moves
in the South China Sea**

By Lan Anh Nguyen Dang

Introduction

A new People's Republic of China (PRC) Coast Guard Law (中华人民共和国海警法, *Zhonghua renmin gongheguo haijing fa*) caught regional and international attention at the beginning of the year ([Vnexpress](#), January 30; [Kyodo News](#), February 9; [Inquirer](#), February 12; [South China Morning Post](#), February 25). It is one of many notable legislative projects in the maritime and security domain that the Standing Committee of China's 13th National People's Congress (全国人大常委会, *quanguo renda changwei hui*) has deliberated and passed during the last year and a half.

Other projects include the revised People's Armed Police (PAP) Law (人民武装警察法 (修改), *renmin wuzhuang jingcha fa (xiugai)*), the revised National Defense Law (国防法 (修改), *guofang fa (xiugai)*), the revised Maritime Traffic Safety Law (海上交通安全法(修改), *haishang jiaotong anquan fa (xiugai)*), and the Hainan Free Trade Port (FTP) Law (海南自由贸易港法, *Hainan ziyou maoyi gang fa*). Taking into account the timing of these various legislative moves, this article sheds light on Chinese leaders' current approaches to maritime issues from a legal perspective and highlights implications for future territorial disputes between China and other stakeholder nations in the South China Sea.

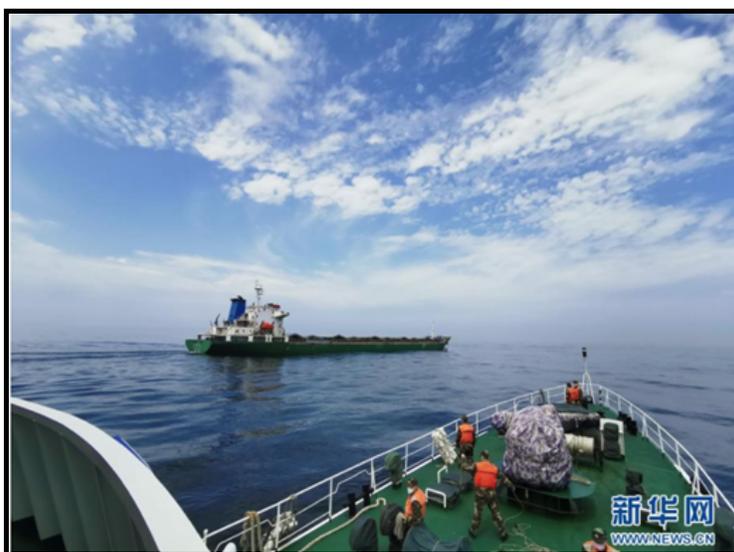


Image: A Chinese Coast Guard vessel approaches a ship suspected to be conducting illegal activity on March 26, 2020. Following years of reforms, Chinese maritime security organizations have been working to strengthen the system of maritime law enforcement. (Source: [Xinhua](#)).

Speeding Up the Building of a Maritime Superpower

In September 2018, the 13th National People's Congress Standing Committee (NPCSC) released its five-year legislative plan (13th NPCSC FYP) that sets the legislative agenda through 2023 (Gov.cn, September 7, 2018). Legislative projects included in this agenda are sorted into three categories of importance, with Category I projects given the most priority (see Table below). The 13th NPCSC also released its annual legislative plan for 2020 and 2021 on June 20, 2020, and April 21, respectively (Npc.gov.cn, June 20, 2020; Npc.gov.cn, April 21). The Coast Guard (CCG) Law, the revised National Defense Law and the Hainan FTP Law were not listed in the 13th NPCSC FYP, and neither the CCG Law nor the National Defense Law was included in the 2020 agenda. All were deliberated and adopted within the past year and a half.[1]

Table: Legislative Schedule

Law	Legislative Plans		Date	
	13th NPCSC FYP	Annual Plan	Adopted	Implemented
Revised Maritime Traffic Safety Law	Category I	2020, 2021	April 29	September 1
Coast Guard Law	N/A	N/A, 2021	January 22	February 1
Revised PAP Law	Category I	2020	June 20, 2020	June 21, 2020
Hainan FTP Law	N/A	2020, 2021	June 10	June 10
Revised National Defense Law	N/A	N/A	December 26, 2020	January 1

Sources: Gov.cn, Npc.gov.cn, Npcobserver.com

China has accelerated updates to key legislation in the security domain to "perfect" (完善, *wanshan*) its maritime legal system.[2] This could be the result of perceptions of rapid changes in the global and regional strategic environment, as evidenced by an "explanation" (说明, *shuoming*) provided by the Central Military Commission (CMC), the body that drafted and submitted the CCG Law, wherein it emphasized that China's "struggle to protect maritime rights is facing a severe and complex situation" (Npc.gov.cn, October 13, 2020). An explanation for the revision to the National Defense Law highlighted that "the world's strategic structure has profoundly evolved, international strategic competition is on the rise, and global and regional security issues continue to increase" (Npc.gov.cn, October 13, 2020).

Furthermore, the 14th Five-Year Plan (14th FYP) released in March includes a call for "situation study, risk prevention, and legal struggles" ([Xinhua](#), March 13), which the international relations expert Zhu Feng (朱锋) has suggested shows China's rising sense of crisis over the South China Sea ([South China Morning Post](#), March 11). At the same time, as is also clearly stated in the explanations and the 14th FYP, the revision and adoption of these laws are necessary legislative moves to maintain "the internal coordination and unity of the legal system," by enabling different agencies to work together, speeding up maritime development, and accelerating the building of a maritime power (海洋强国, *haiyang qiangguo*) ([Npc.gov.cn](#), October 13, 2020; [People's Daily](#), March 5; [Xinhua](#), March 13).

Maintaining and Increasing Legal Ambiguity

The CCG Law and the revised Maritime Traffic Safety Law reflect that the Chinese leadership is maintaining a policy of ambiguity with respect to maritime claims. The CCG Law applies to "the Chinese Coast Guard Organization conducting the activities of maritime rights protection and law enforcement in and above the PRC's *jurisdictional waters*" (italics added) (管辖海域, *guanxia haiyu*) under Article 3. It is worth noting that in Article 74, item 2 of the initial draft released in November 2020, "jurisdictional waters" refers to China's "internal seas, territorial sea, contiguous zone, exclusive economic zone, continental shelf, and *other sea areas under the PRC's jurisdiction*" (italics added) (中华人民共和国管辖的其他海域, *Zhonghua renmin gongheguo guanxia de qita haiyu*). This clarification was removed from the final version of the CCG Law, leaving the term "jurisdictional waters" undefined.

Following the same pattern, Article 2 of the first draft revision to the Maritime Traffic Safety Law stipulated that "navigation, berthing, operations and other activities related to maritime traffic safety in the coastal waters (沿海水域, *yanhai shuiyu*) of the PRC shall abide by this law." The term "coastal waters" was defined, as "internal seas, territorial sea and other sea areas under the jurisdiction of the PRC" under Article 115. The final version replaced the term "coastal waters" with "the PRC's jurisdictional waters," but the law provides no definition of this term.

Some Chinese writers have suggested that "jurisdictional waters" could indicate waters China claims that are controlled by other countries,[3] whereas the "other sea areas" could refer to all of the sea areas inside the "nine-dash line" ([China U.S. Focus](#), May 15, 2012). Others argue that marine areas within China's jurisdiction include not only the waters over which China is entitled to exercise jurisdiction under the United Nations Convention on the Law of the Sea (UNCLOS)—namely, internal waters, territorial sea, contiguous zone, exclusive economic zone and the waters of the continental shelf—but also those over which China enjoys historic rights.[4]

A 2016 Permanent Court of Arbitration concluded that China's claim to historic rights is incompatible with UNCLOS to the extent that it exceeds the limits of China's maritime zones ([Permanent Court of Arbitration](#), July 12, 2016). Throughout 2020 and early 2021, 10 claimant and non-claimant countries submitted

diplomatic notes to the UN Commission on the Limits of the Continental Shelf (UNCLCS) to reaffirm their legal position that China's claims of "historic rights" over the South China Sea lack international legal basis and do not comply with UNCLOS provisions (UN.org, January 29).

China's use of the terms "jurisdictional waters" and "other sea areas" is not new. However, the fact that China continues to use such ambiguous terms suggests that this vague language provides China with the flexibility to modify the legal basis of its maritime claims in the South China Sea and justify its maritime claims beyond UNCLOS rules.[5] These terms have been made even vaguer in China's new maritime domestic laws, reflecting the state's "growing concerns over the South China Sea" (South China Morning Post, March 11), and suggesting China's intention to perhaps exploit such ambiguity in future so-called "legal struggles" (Xinhua, March 13).

Strengthening Coordination Among Organizations

The new CCG Law and the revised PAP Law have created a legal basis to unify supervision in the maritime domain and strengthen internal coordination and cooperation following reforms to both organizations in 2018. According to Article 2 of the revised PAP Law, the PAP now sits under "the centralized and unified leadership of the Party Central Committee and the Central Military Commission." The mission of "maritime rights protection and law enforcement" (海上维权执法, *haishang weiquan zhifa*) has been added to the PAP's mandate under Article 4 and 41.

Notably, the PAP Law enables further integration of the PAP with the military (Nikkei, June 21, 2020). Article 10 stipulates that the PAP, including the CCG, can "participate jointly in non-combat military operations such as emergency rescue, maintaining stability and handling emergencies," and even "conduct joint training exercises" with the People's Liberation Army (PLA). Article 8 of the CCG Law similarly lays out the establishment of a "cooperation and coordination mechanism" (协作配合机制, *xiezuo peihe jizhi*) between the CCG and relevant organizations, which was absent from the initial draft. Article 53 and 58 further provide that relevant organizations are required to facilitate the CCG's law enforcement activities through logistics support and information sharing.

PLA military officers have long called for authoritative domestic laws to enable the PLA Navy, the CCG and the maritime militia to work together to defend the country's national interests.[6] They have argued that China's sea services should "have the ability to leverage joint management and joint defense activities [...] in order to jointly attack various types of illegal activity [...]".[7] The new CCG Law and the PAP Law revision may go some way towards legalizing this.

Speeding up Maritime Development

The new Hainan FTP Law and the revised National Defense Law suggest Chinese leaders' emphasis on speeding up maritime development (including maritime economic development) and protecting what China calls its "development interests" (发展利益, *fazhan liyi*).

The local government of Hainan Province is an active participant in defining and asserting China's sovereignty and maritime rights in the South China Sea.[8] Sansha City, which was established as a prefecture-level city in Hainan Province in July 2012, has jurisdiction over several disputed "islands and reefs" and "sea areas" in the South China Sea.

Hainan's local marine economic plans were accepted as part of the national maritime development strategy and included in the 13th FYP (2016–2020) for marine economic development (Sina.com.cn, May 5, 2015; Ndr.gov.cn, March 16, 2016). Articles 38 and 39 of the Hainan FTP Law echoed earlier drives to emphasize tourism's developmental potential,[9] as well as the aim to consolidate China's position in the South China Sea through maritime economic development.

The term "development interests" was included in the revised National Defense Law for the first time and appears in four important provisions. First, Article 2 states that development interests are to be protected by military activities. Second, the building of strong national defense capabilities is required to meet the demands of China's development interests according to Article 4. Similarly, the size of China's armed forces must be "compatible with the need to safeguard China's sovereignty, security, and development interests" under Article 25. Finally, Article 47 adds "development interests" as a legitimate reason for the mobilization of China's armed forces.

Despite the inclusion of "development interests" to the law's key contents, the term is undefined. The term "development interests" remains legally undefined, but could feasibly include territorial disputes in the South China Sea and China's so-called "maritime rights and interests" within its scope. Understood this way, any perceived threat to China's maritime development interests could be used to justify military action.

Conclusion

The implementation of the abovementioned maritime and security laws in the South China Sea, as well as the extent to which they might challenge regional and global legal norms, remains to be seen. Some preliminary conclusions can be drawn based on the above analysis. First, the new CCG Law, the revised Maritime Traffic Safety Law and the anticipated Ocean Basic Law will continue to adopt the strategic use of ambiguous terms as an instrument of legal warfare to bolster the legitimacy of Chinese maritime claims in the South China Sea.[10] Second, the domestic legislative project of perfecting the maritime legal system promotes coordination and cooperation among law enforcement agencies and the PLA. Such actions serve

to legalize unilateral maritime law enforcement activities at least under China's own legal system, as well as providing the means to conduct such activities more effectively. Third, the Chinese leadership has taken steps to speed up maritime development and safeguard so-called "development interests" since the passing of the 2018-2023 NPCSC legislative agenda. These moves also indicate the development of a more comprehensive legal, economic and military framework to accelerate the building of China as a maritime power. In the context of rising tensions in the South China Sea and strategic competition between China and the U.S., the building and implementation of maritime power are seen as both ends and means in the process of expanding China's normative and physical control in the South China Sea.

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Notes

[1] Full-texts (of the initial drafts and final versions) as well as explanations are posted on the website NPC Observer. For the revised People's Armed Police Law, see at <https://npcobserver.com/legislation/peoples-armed-police-law/>; the revised National Defense Law, see at <https://npcobserver.com/legislation/national-defense-law/>; the CCG Law, see at <https://npcobserver.com/legislation/coast-guard-law/>; the revised Maritime Traffic Safety Law, see at <https://npcobserver.com/legislation/maritime-traffic-safety-law/>; the Hainan FTP Law, see at <https://npcobserver.com/legislation/hainan-free-trade-port-law/>.

[2] See: Isaac Kardon, "China's maritime interests and the law of the sea: Domesticating public international law", in John Garrick and Yan Bennett (eds.), *China's socialist rule of law reforms under Xi Jinping*, London: Routledge (2016), pp.179-180.

[3] See: Academy of Military Science [军事科学院], *The Science of Military Strategy* [战略学2013], Beijing: Military Science Press, (2013), p.210.

[4] See: Ma Xinmin, "China and the UNCLOS: Practices and policies", *The Chinese Journal of Global Governance*, vol. 5, no. 1 (2019), pp.12-13.

[5] See: Sarah Lohschelder, "Chinese domestic law in the South China Sea", *New Perspectives in Foreign Policy*, Issue 13 (Summer 2017), p.34; Gregory Poling, *The South China Sea in focus: Clarifying the limits of maritime dispute*, Lanham, MD: Rowman & Littlefield, (2013), p.2.

[6] See: Wu Jianhong (吴建红), Huang Chunyu (黄春宇), and Liu Changlong (刘昌龙), "Thoughts on advancing ocean defense construction work in the new situation [新形势下推进海防建设工作的思考]," *National Defense* [国防], no. 12 (2015), p. 71.

[7] *Ibid.*, p.72.

[8] See: Li Mingjiang, "Hainan Province in China's South China Sea policy: What role does the local government play?", *Asian Politics & Policy*, vol. 11, no. 4 (2019), pp. 623-642.

[9] See: China National Democratic Construction Association, Hainan Provincial Committee, The United Front Work Department of CPC Central Committee, "Recommendations to guarantee the safety of Sansha Tourism [关于加强三沙旅游安全保障的建议]", quoted and translated by Rowen I. (2018) "Tourism as a territorial strategy in the South China Sea", in Spangler J., Karalekas D., Lopes de Souza M. (eds) *Enterprises, localities, people, and policy in the South China Sea*, Cham, Switzerland: Palgrave Macmillan, (2018), p.65.

[10] See: Douglas Guilfoyle, "The rule of law and maritime security: Understanding lawfare in the South China Sea", *International Affairs*, vol. 95, no. 5 (2019), p.1015.

Ramping the Strait: Quick and Dirty Solutions to Boost Amphibious Lift

By Conor Kennedy

Introduction

The threat of the People's Liberation Army (PLA) using military force to coerce or perhaps launch an amphibious invasion of Taiwan has received significant attention in the past year. Meanwhile, the recent commissioning of the PLA Navy's first Type-075 amphibious assault ship has further highlighted China's developing amphibious capabilities ([South China Morning Post](#), May 9). At the same time, the apparent shortage of amphibious lift required to execute large-scale landing operations leaves many wondering whether China is serious about its threats against Taiwan. The U.S. Department of Defense's 2020 China Military Power Report notes the PLA's focus on ocean-going amphibious platforms rather than a large fleet of traditional landing ships and craft suggests that a direct beach-assault operation is less likely at the moment ([Office of the Secretary of Defense](#), September 1, 2020).

But the PLA may have other plans for transporting troops and equipment across the Strait: the growing capabilities of its merchant roll on-roll off (RO-RO) ships ([CMSI](#), December 6, 2019). These are vessels equipped with built-in ramps that enable wheeled and tracked cargo to load and offload under their own power. Such ships have the potential to deliver a significant volume of force, providing access to port terminals or other lighterage is available. They do not, however, provide solutions for launching waves of amphibious assault forces, for which dedicated landing ships are still lacking. Among the numerous critical components necessary for a successful cross-Strait landing, a failure to secure landing areas for follow-on forces in the initial assault would bring the entire endeavor to a screeching halt, likely inflicting severe costs on the part of the aggressor and resulting in a withdrawal.

For China's RO-RO ships to support an amphibious assault scenario, their ramps would need to be capable of in-water operations to launch amphibious combat vehicles. This capability appears to have been publicly demonstrated in the summer of 2020 by the PRC-flagged vessel *Bang Chui Dao* (棒捶岛), a 15,560-ton RO-RO owned and operated by COSCO Shipping Ferry Company ([COSCO Shipping Ferry](#), accessed June 24). This article describes a new ramp system observed on this ship during a recent exercise and discusses its implications for PLA amphibious capabilities in a cross-Strait landing.



Image: RO-RO ferry Bang Chui Dao (Source: [COSCO Shipping Ferry](#)).

New Ramp System Demonstrated in Amphibious Landing Exercises

During the peak of summer training in 2020, the 1st Marine Brigade of the PLA Navy Marine Corps (PLANMC) mustered all personnel and equipment (全员, 全装, *quan yuan, quan zhuang*) for day and night landing exercises in amphibious training areas off the coast of Guangdong Province. These exercises featured night-time mobilization and assembly, embarkation, obstacle clearance, amphibious assault landings, and artillery and air defense training ([js7tv.cn](#), August 2, 2020). They also included the use of a new ship to carry these forces to their training area.

On July 10, the *Bang Chui Dao*, which usually runs ferry routes across the Yellow Sea and Bohai Gulf, arrived in Zhanjiang (湛江) to join the PLANMC exercise. It took on 1st Brigade troops, trucks, and Type-05 amphibious armored vehicles at the Southern Theater Navy's 6th Landing Ship Flotilla loading dock ([CCTV](#), August 3, 2020). According to automatic identification system (AIS) transmission data of the vessel's movements, the ship departed Zhanjiang just before 10:00 AM local time and arrived off Tangxia (塘霞), an amphibious training area in Dianbai County (电白区), at almost 4:00 PM. AIS data indicates that it likely began launching vehicles 4 to 5 kilometers (2.5 to 3.1 miles) offshore without dropping anchor. Video of a vehicle launching shows the ship was likely running slow into the wind to maintain a lee astern; it appears to have maintained bare steerage while drifting to the southeast at half a knot until offloading was completed and then departed for nearby Shuidong Harbor at around 4:48 PM.[1] After being moored dockside overnight and well into the next day, the ship then left for the Shuidong anchorage on the evening of July 11. It returned to Zhanjiang in the afternoon of July 12, presumably to offload PLANMC forces. Although it is unclear how many PLAN landing ships took part, at least one Type-073A landing ship likely participated ([CCTV](#), August 3, 2020).

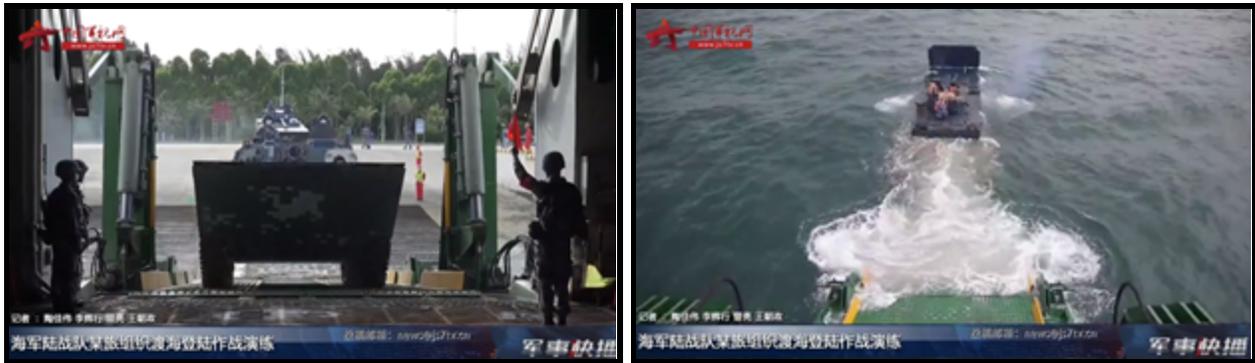


Image: Footage of 1st Brigade Type-05 vehicles using the new ramp system in 2020 (Source: js7tv.cn).

The ship's participation is not abnormal. It has supported PLA transportation exercises for years, for example in 2014 (shown below). According to its AIS transmissions, the *Bang Chui Dao* was very busy in the summer of 2020. It made multiple trips beyond the Bohai/Yellow Sea to areas with PLA landing ships and craft, including a visit to a PLA Ground Forces (PLAGF) watercraft site in Xiamen, Fujian Province which is close to a PLAGF amphibious brigade in Zhangzhou (漳州), and possibly conducted activities in waters near Kinmen (金门, *Jinmen*) Island.^[2] Little information is available on what it did there. *Bang Chui Dao* also played a significant role in “Eastern Transportation-Projection 2020A” (东部运投-2020A), an exercise held by the PLA Joint Logistics Support Force in the Eastern Theater Command between June and August 2020.



Image: *Bang Chui Dao* loading PLA forces at a conventional terminal in 2014, prior to its ramp conversion (Source: China Military Online).

The key technical development demonstrated in its July 2020 exercise with the PLANMC is the converted stern ramp installed on the *Bang Chui Dao*. The ship's previous straight stern ramp (shown above) was a hydraulic-powered ramp type often seen on RO-ROs. At some point in the past few years, this vessel's stern ramp was converted to enable amphibious launch. Video of this capability appeared during a 2019 state

media profile of an officer at the former Nanjing Military Region Military Representative Office for Navigational Matters, showing the vessel's ability to recover a ZTD-05 amphibious assault vehicle, likely from a PLAGF amphibious unit ([CCTV-Military Report](#), May 14, 2019).



Image: May 5, 2019 CCTV coverage showing amphibious recovery (Source: [CCTV-Military Report](#)).

The 2020 exercise provides a closer look at the new ramp system. The ramp is driven directly by two large hydraulic cylinders and two support arms. When conducting launch and recovery, these are connected between the top of the hydraulic mounting assemblies on the inner ramp and the top of the freight deck threshold to provide the strength and leverage required to deploy the ramp into the water and withstand sea action. The support arms also act as preventers at maximum extension, while the ramp is kept rigid by the hydraulic cylinders. A longer outer ramp flap has also been added, controlled by another set of hydraulic cylinders mounted on the underside or backside of the ramp. These help to provide strength at the end of the outer ramp and may also allow for further articulation to help vehicles get on the inner ramp. Based on 2020 video footage, the ramp system appears able to launch and recover at a minimum the lightweight ZTD-05 vehicle (26 tons).[3]



Image: A PLANMC ZBD-05 loading onto the Bang Chui Dao, featuring its new stern ramp during the July 2020 exercise. The new hydraulic cylinders used to depress the ramp are shown in the stowed position for regular dock loading (Source: [CCTV](#)).

Implications

The use of ramps at sea is fraught with challenges. Unsecured ramps run the risk of being snapped off by dynamic stress caused by ocean swells. The introduction of this system suggests confidence by Chinese engineers and the vessel's operators that their system can work. The combined use of hydraulic systems and support arms means that this new ramp is better situated to handle light sea states, perhaps up to sea state three (based on a scale from one to ten). With converted stern ramps, ships could simply anchor during discharge using the vessel's own lee. If currents complicate matters, ships might also run at bare steerage speed to ensure smooth vehicle launching. The two training examples that involved the new ramp's use appear to have taken place in calm conditions. They would likely encounter harsh marine conditions in the Taiwan Strait, which experiences annual average wave heights from 3.6 to 8.5 feet (i.e., light to moderate sea states).[4]

Built in the Netherlands in 1995, the *Bang Chui Dao* is smaller than some of the RO-RO ships recently built in the Bohai Gulf area. It did not implement national defense requirements during construction but has clearly undergone some amount of modification to better support the PLA. According to the COSCO Shipping Ferry website, the *Bang Chui Dao* can carry 1,200 passengers and has 835 meters (2,740 feet) of vehicle lane capacity in its main and lower vehicle decks ([COSCO Shipping Ferry](#), accessed June 24). It is difficult to determine the total number of Type-05 vehicles and equipment that could be transported without the dimensions and number of vehicle lanes available. But accounting for a Type-05 chassis length of 9.5 meters (31.2 feet) and fore and aft spacing of 1.5 meters (4.9 feet) between vehicles, as reported by PLA sources, the *Bang Chui Dao* may theoretically be able to transport up to an amphibious mechanized infantry

battalion.[5] This rough calculation does not factor in numerous other considerations that go into load planning.

Thus far, the new ramp system has only been seen on the *Bang Chui Dao*, but it could be installed across China's fleet of RO-RO ships. In 2019, authors from the PLA Military Transportation University stated that there were 63 RO-RO ships suitable for use in transporting military units, totaling 140,000 deadweight tons.[6] While larger, more advanced RO-RO ships have been delivered, numerous existing ships still use straight stern ramps like the *Bang Chui Dao*. [7] Many of these might be good candidates for ramp conversion.

A surge in PLA landing ship construction would be expected before serious preparations for a cross-Strait invasion. This would be exposed to ship spotters and overhead imagery over the course of many months and has not yet been observed. Nevertheless, the testing of new ramp systems as seen on the *Bang Chui Dao* could offer the PLA a potentially fast and cheap method of surging amphibious lift capabilities without raising concerns. This middle ground scenario raises questions about how quickly such conversions could be detected. Converted RO-RO ships could also be loaded with amphibious combat units well ahead of a planned invasion, supporting personnel with shipboard amenities normally used for civilian purposes. This could help ease pressure on mobilization, embarkation, and movement timelines and could be done at optimal periods, such as nights with low visibility or days with ample cloud cover.

Conclusion

The July 2020 exercise could simply be early testing of the new ramp. There is not enough evidence on its performance beyond short clips showing a few vehicles in operation, leaving one to wonder about its breakdown rate. Nonetheless, the fact that PLA units have used this system during amphibious training, coupled with the necessary costs borne in conversion and training, lends some credibility toward its future use in a military scenario. Due to the associated costs, it is unlikely that commercial ferry operators would want this complicated system installed for regular use. If it is adopted on a larger scale, the PLA would only need as many converted RO-ROs as necessary to fill in the gaps in amphibious lift for surface amphibious assault units. Other larger RO-RO ships could focus on the transport and debarkation of follow-on forces, another uniquely difficult challenge in amphibious assault scenarios that is not addressed here.

Although ramps are nowhere nearly as flashy as footage of the PLAN's brand-new amphibious assault ships, military observers would do well to watch how many of China's older and smaller RO-RO ships receive this new ramp system in the coming years.

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Notes

[1] While no wheel wash is shown in the brief clip, Marine Traffic AIS data suggests the vessel may have run slow into a 23-knot wind out of the north-northeast on a 16-degree heading to maintain position and a lee for ramp operations. *Marine Traffic*, Date: July 10, 2020 – Past Track of *Bang Chui Dao*.

[2] AIS data for this analysis was pulled from *Marine Traffic*, July – September, 2020 – Past Track of *Bang Chui Dao*.

[3] This is compared to the US Marine Corps new amphibious combat vehicle that weighs approximately 35-tons.

[4] For source on average wave heights in the Taiwan Strait, see: 张桂湘, 张健, 张敏健 [Zhang Guixiang, Zhang Jian, Zhang Minjian], 两岸通航适用客滚船主尺度及适航性分析 [“Cross-Strait Ro/Pax Principal Dimensions and Navigability Analysis”], 船舶与海洋工程 [Naval Architecture and Ocean Engineering], No. 6, 2015, p. 2.

[5] For source on vehicle spacing, see: 陈益平 [Chen Yiping], 军用车辆船舶滚装运输有关问题研究 [“Research into the Ro-Ro Transportation of Military Vehicles”], 国防交通工程与技术 [Traffic Engineering and Technology for National Defense], No. 5, 2018, p. 5.

[6] 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), p. 3.

[7] 赵俊国, 刘宝新 [Zhao Junguo, Liu Baoxin], 艏直式跳板滚装船丁靠直立式码头装卸载保障 [“Loading and Unloading Support of RO-RO Ship with Straight Stern Type Springboard T-Type Berthing at Vertical Wharf”], 水运工程 [Port & Waterway Engineering], No. 6, 2017, p. 77.
