

Does “Taiwan Can Help” Apply to Taiwan Itself?

Taiwan’s Assessment of the People’s Liberation Army’s Joint Operations against Taiwan and the Development of Taiwan’s National Defense System*

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Abstract

This paper analyzes official reports of Taiwan’s Ministry of National Defense, journals issued by military services, research papers including those published in Japan and the United States, and news reports. The analysis shows that Taiwan is wary of the organizational reforms, equipment, drills, joint operations, cognitive operations, and gray zone attacks conducted by the military services and the People’s Armed Police of the People’s Liberation Army (PLA). Taiwan is preparing against not only China’s capability to seize Taiwan’s offshore islands but also the PLA’s possible invasion of Taiwan’s main island using civilian ships.

However, the Republic of China Armed Forces have inadequate response capacity due to their weak offshore island defense capability, lack of enemy base counterattack capability, and the low reliability of reserve forces. Taiwan, while it cannot match up with China’s defense budget and number of personnel, is working to improve its joint operations capabilities for countering China. These efforts include acquiring long-range weapons underpinned by the strengthening of U.S.-Taiwan relations, building asymmetric warfare capabilities, conducting exercises and drills in response to the PLA’s military reforms, building an all-out defense system, and establishing the Information, Communications and Electronic Force Command.

Introduction

The People’s Republic of China (PRC), which surpassed Japan to become the world’s second largest economy after the United States in 2010, has stepped up pressure against neighboring countries and regions after the Xi Jinping regime took power in 2012.

Since 2014, China has conducted rapid, large-scale reclamation and constructed military facilities on seven Spratly Islands.¹ China has used these military bases to increase its military

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¹ Japan Ministry of Defense, “China’s Activities in the South China Sea (China’s Development Activities on the Features and Trends in Related Countries),” September 2021.

presence in the South China Sea.² Over the East China Sea, the Japan Air Self-Defense Force scrambled against Chinese aircraft 675 times in FY2019, 458 times in FY2020, and 772 times in FY2021.³ Furthermore, China Coast Guard vessels are active in waters surrounding the Senkaku Islands. In 2021, a total of 1,222 vessels entered the contiguous zone and 110 vessels intruded into Japan's territorial waters.⁴ Meanwhile, China has an ongoing border dispute with India.⁵

Under these circumstances, China has ratcheted up pressure on Taiwan. The standoff between Taiwan and China, separated by the over 130-kilometer-wide Taiwan Strait, has already continued for more than 70 years. This period saw changes in the international environment, including normalization of U.S.-China diplomatic relations in 1979. Accordingly, China changed its basic policy on the recovery of Taiwan from "armed liberation" to "peaceful unification" under the one country, two systems principle. In all those years, however, Beijing did not agree to abandon the use of force against Taiwan.⁶

The current Xi regime has declared that it will develop China into "a great modern socialist country" that is prosperous, strong, democratic, culturally advanced, harmonious, and beautiful by the middle of the 21st century, and promote the "great rejuvenation of the Chinese nation" through Chinese-style modernization.⁷ Without recovering Taiwan, Chinese leaders are unlikely to declare realization of the "great rejuvenation of the Chinese nation," albeit its extreme vagueness. Moreover, China has taken a more severe approach to Taiwan since China's Hu Jintao regime changed to the Xi Jinping regime in 2012 and since around the time that Taiwan's Ma Ying-jeou administration of the Kuomintang was replaced with the Tsai Ing-wen administration of the Democratic Progressive Party in 2016.

The People's Liberation Army (PLA) became increasingly active around the main island of Taiwan, especially after the announcement of the largest military reform initiative since the founding of the PRC in the fall of 2015. In view of the liberation of Taiwan (invasion), China aims, firstly, to build a military force that will make the United States hesitant to intervene, and secondly, if a battle with the Republic of China (ROC) Armed Forces is initiated, to win the war as quickly as possible and give the U.S. forces no time to intervene. The first major reforms since the establishment of the PLA are further intended to make the military capable of executing the joint

² Iida Masafumi, "China's Foreign Strategy Causes Friction with the Existing World Order," in *China Security Report 2019: China's Strategy for Reshaping the Asian Order and Its Ramifications* (Tokyo: National Institute for Defense Studies (NIDS), 2019), pp. 16–17.

³ Joint Staff, Japan Ministry of Defense, "2021 nendo 3 shihanki made no kinkyu hasshin jokyo ni tsuite [Statistics on Scrambles through the Third Quarter of FY2021]," January 25, 2022. The Japanese fiscal year runs from April 1 to March 31.

⁴ Calculated by the author based on 2021 figures in Japan Coast Guard, "Chugoku kaikeikyoku ni shozoku suru senpaku to ni yoru Senkaku shoto shuuhun no setsuzoku suiiki nyuiki oyobi ryokai shinnyu sekisuu [Number of China Coast Guard and Other Vessels that Entered the Contiguous Zone and Intruded into Territorial Waters Surrounding the Senkaku Islands]" (daily).

⁵ Office of the Secretary of Defense, *Annual Report to Congress, Military and Security Developments Involving the People's Republic of China 2021*, p. 16, 70.

⁶ Xi Jinping, "Wei shixian minzu weida fuxing tuijin zuguo heping tongyi er gongtong fendou: zai 'gao taiwan tongbao shu' fabiao 40 zhounian jinian hui shang de jianghua [Working Together to Realize Rejuvenation of the Chinese Nation and Advance China's Peaceful Reunification: Speech at the Meeting Marking the 40th Anniversary of the Issuance of the Message to Compatriots in Taiwan]," *Renmin Ribao* [People's Daily], January 3, 2019.

⁷ "Full Text: Resolution of the CPC Central Committee on the Major Achievements and Historical Experience of the Party over the Past Century," Xinhua Net, November 16, 2021.

operations necessary to achieve these objectives.⁸ Ian Easton, in his detailed analysis of the PLA’s invasion of Taiwan, lists the difficulties faced by the PLA and concludes that the ROC Armed Forces can adequately deal with invading PLA forces.⁹ Ogata Makoto explains that the PLA’s capability buildup pursued by the Xi Jinping regime is headed in a highly reasonable direction from the viewpoint of seizing Taiwan’s main island. According to his assessment, the ROC Armed Forces strive to build up their defense posture by strengthening long-range strike capability and conducting exercises in response to the changes in the threats from the PLA, and are steadily advancing responses to gray zone situations.¹⁰ Joel Wuthnow highlights China’s limited ability to handle multiple challenges. He contends that the United States should support China’s neighboring countries, thereby forcing China to shoulder the heavy task of handling issues on multiple fronts, which in turn will alleviate China’s pressure on Taiwan.¹¹ Easton and Ogata argue that Taiwan’s military development policy is appropriate and that an invasion across the Taiwan Strait would be difficult to carry out. They also conclude that, in general, the ROC Armed Forces are capable of defending Taiwan, at least under the current circumstances. Even with the imperfections of the comprehensive military reforms undertaken by the PLA, it cannot be discounted that the PLA’s transition from informatized warfare to intelligentized warfare is making steady progress, and that the PLA is enhancing its joint operations capabilities on this account.¹² Wuthnow’s argument is not so much an assessment of the ROC Armed Forces’ ability to counter the PLA. Rather, he argues that the United States aims to reach out to China’s neighbors, thereby overloading China. While this strategy should be emphasized because it accurately exploits China’s weaknesses, it is clearly different from the assessment of Taiwan’s defense system that is the main focus of this paper.

Taking the above into consideration, Section 1 of this paper outlines Taiwan’s assessment of the PLA’s joint operations capabilities and analyzes the assessment. Section 2 examines Taiwan’s defense system for countering the PLA’s joint operations. Based on this analysis, Section 3 identifies the problems and weaknesses that could emerge when Taiwan counters a PLA invasion.

This analysis primarily draws on the following Taiwanese sources. One is the ROC national defense report, which is a document first published in 1992 under the democratizing Lee Teng-hui administration. Since then, the report has been published biennially by the Ministry of National Defense (MND). The 2021 edition is the most recent report. This publication can be considered the most authoritative report for analyzing Taiwan’s defense policy, military strategy, and assessment of the PLA. This paper refers to the 2019 and 2021 editions. The Quadrennial Defense Review (QDR) is a report which must be published every four years within 10 months of the president’s

⁸ Office of the Secretary of Defense, *Annual Report to Congress, Military and Security Developments Involving the People’s Republic of China 2019*, p. 86.

⁹ Ian Easton, *The Chinese Invasion Threat: Taiwan’s Defense and American Strategy in Asia* (Arlington, VA: Project 2049 Institute, 2017).

¹⁰ Ogata Makoto, “Kindaika susumeru kaihogun to taiwangun no taio [The PLA’s Modernization and the Response of the ROC Armed Forces],” Parts I and II, *Gunji Kenkyu* [Japan Military Review], December 2021 and January 2022.

¹¹ Joel Wuthnow, “System Overload: Can China’s Military Be Distracted in a War over Taiwan?,” *China Strategic Perspectives 15*, Center for the Study of Chinese Military Affairs, Institute for National Strategic Studies (Washington, D.C.: National Defense University Press, June 2020).

¹² Momma Rira, “China’s Preparations for Informatized Warfare,” in *China Security Report 2021: China’s Military Strategy in the New Era* (Tokyo: NIDS, 2020); Sugiura Yasuyuki, *China Security Report 2022: The PLA’s Pursuit of Enhanced Joint Operations Capabilities* (Tokyo: NIDS, 2021).

inauguration under the National Defense Act of Taiwan. The first QDR was published in 2009, and the fourth QDR, the 2021 edition, was published on March 19. The Chinese Communist Party (CCP) military power report is an annual undisclosed report that Taiwan's MND submits to the Legislative Yuan every year. It is distributed to members of the Legislative Yuan from whom the content is leaked to the media almost annually.¹³ Despite this, no improvements have been made to maintain confidentiality, suggesting that the report assumes leakage and therefore does not contain sensitive content. For the years that the national defense report is not published, the CCP military power report is useful for obtaining updates on the views of the MND. The 2020 and 2021 editions are referenced in this report. In addition to official reports, this paper references articles published in military academic journals issued by the MND and military services, as well as articles authored by researchers at the Institute for National Defense and Security Research, a think tank with a strong public orientation.

Taiwanese authorities, which claim to be the ROC government, effectively control the main island of Taiwan and its attached offshore islands (e.g., Lanyu Island and Pengjia Islet), the Penghu Islands, the Kinmen Islands, the Matsu Islands, the Pratas Islands and Itu Aba Island in the South China Sea, among others. In this paper, "Taiwan" refers to Taiwan in a geographical sense, unless otherwise specified. Similarly, China, in the geographical sense, refers to China's territory indicated by the PRC Constitution, excluding the aforementioned areas effectively controlled by Taiwan.

1. Taiwan's Assessment of PLA Joint Operations Capabilities

(1) Improving Joint Operations Capabilities for Invading Taiwan

Taiwan's national defense report was attuned to the PLA's joint operations capabilities but did not give them extensive coverage. "Joint landing" was the only joint operation listed among the examples of military threats to Taiwan specified in the *2019 National Defense Report*.¹⁴ By contrast, the 2021 report mentions "joint blockade capabilities," "joint firepower strikes," and "joint landing."¹⁵ In addition, Taiwan's CCP military power report discusses "integrated military threats," including exercises, navigations by naval vessels near contiguous zones, and media propaganda to create a psychological panic in Taiwan.¹⁶

The Xi Jinping regime launched military reforms at a reform work meeting of the Central Military Commission in November 2015, and has been undertaking military reforms at the highest level since the founding of the PRC.¹⁷ It is noteworthy that the PLA's plan calls for speeding up military intelligentization, increasing joint operations capabilities based on an Internet information

¹³ For example, "'Chugoku kantai, dai 3 rettosen ni sekkin' hawai oki de kunren Taiwan kokubobu [Taiwan's Ministry of National Defense Says Chinese Fleet Approaching the Third Island Chain during Its Drills Off the Coast of Hawaii]," *Sankei Shimbun*, September 3, 2020.

¹⁴ 2019 National Defense Report Editorial Committee, *2019 National Defense Report, Republic of China* (Taipei: Ministry of National Defense (MND), 2019), p. 48.

¹⁵ 2021 National Defense Report Editorial Committee, *2021 National Defense Report, Republic of China* (Taipei: MND, 2021), p. 44.

¹⁶ ROC MND, *109 Nian zhonggong junli baogao shu* [2020 Chinese Communist Party Military Power Report] (Taipei: MND, 2020), p. 42.

¹⁷ Ogata Makoto, "Kindaika wo susumeru kaihogun to taiwangun no taio [The PLA's Modernization and the Response of the ROC Armed Forces]," *Toa* [East Asia], no. 651 (September 2021), p. 78.

system, and improving capabilities in all-domain operations. The PLA’s emphasis on improving joint operations capabilities is evident, and Taiwan is closely following the related developments.

Accurate, rapid, and large-scale troop projection is critical for the PLA’s successful landing operation on the main island of Taiwan. This includes the PLA Army’s (PLAA) three-dimensional operations that integrate air and land forces.¹⁸ The mainstay is the PLAA aviation force that utilizes helicopters. In 2021, they entered the Taiwan Air Defense Identification Zone (TADIZ) with a typical pair of helicopters, the Mi-17 transport helicopter and the WZ-10 attack helicopter.¹⁹ All Chinese aircraft that entered the TADIZ previously were fixed-wing aircraft belonging to the Air Force or Navy. The objective of using helicopters was for helicopter pilots to gain experience in over-the-sea flights and in necessary pre- and post-flight maintenance. While so far only two helicopter entries by the PLAA have been conducted, they are expected to continue in order to take the first step toward cross-sea joint operations.

Regarding the PLA Navy (PLAN), Taiwan reports the placement of the Marine Corps Command Headquarters directly under the Navy’s command organization and the increase in size of the Marine Corps.²⁰ Part of the 1st Amphibious Mechanized Infantry Division, which had been under the 1st Group Army, was reassigned to the Marine Corps, and the 2nd Coastal Defense Brigade and the 13th Coastal Defense Division of the Eastern Theater Command’s Army were reorganized into theater command marine brigades. There are currently six marine brigades and a special operations special warfare brigade (Jiaolong Assault Team).²¹ The Marine Corps, which has just been reorganized based on Army units, is expected to rapidly build up assets, albeit its lack of training and slowness in updating weapons and equipment.

Taiwan describes that “The Chinese naval fleet approached the third island chain for the first time in early 2020, demonstrating to other countries its ability to break through the blockade of the (first and second) island chains and conduct operations in distant seas.”²² Taiwan may have been under psychological pressure as the Chinese fleet approached Hawaii and neared the U.S. Indo-Pacific Command (USINDOPACOM), and may have been exposed to greater surveillance compared to China’s usual Western Pacific exercises. That said, the fleet is free to sail and train on the high seas so long as it is not wartime, and did not actually break through the blockade. Taking this into consideration, “demonstrating to other countries its ability” is an exaggeration on the part of Taiwan. Moreover, even if a fleet without air cover were to approach Hawaii, it would be decimated by the concentrated attack of U.S. air forces and anti-ship missiles. Taiwan’s MND may have used the above wording to embellish the capabilities of the PLA, partly because a budget was needed for building up a counterforce. At the same time, the normalization of PLA activities in the sea and airspace beyond the first island chain indicates the increasing possibility of a Chinese

¹⁸ *109 Nian zhonggong junli baogao shu*, pp. 16–18; *2019 National Defense Report*, p. 44; *2021 National Defense Report*, p. 38.

¹⁹ Air Force Command Headquarters, ROC MND, “Wo xinan kongyu kong qing dongtai [Adversary Activities in the Southwest Airspace of the Republic of China],” October 26 and November 19, 2021.

²⁰ *109 Nian zhonggong junli baogao shu*, pp. 18–19; *2019 National Defense Report*, p. 37.

²¹ Lee Yu Wei and Liu Chun Ting, “You gongjun luzhandui fazhan xingsi woguo haijun luzhan de jueise yu dingwei [Reflections on the Development of the CCP Army Marine Corps: The Role and Positioning of the ROC Navy’s Land War],” *Haijun Xueshu Shuangyuekan* [Navy Professional Journal], vol. 54, no. 3, June 2020, pp. 26–27.

²² *109 Nian zhonggong junli baogao shu*, p. 35.

attack from the east side of Taiwan's main island.

Regarding the PLA Air Force (PLAAF), Taiwan mentions the reorganization of the 15th Airborne Corps into the Airborne Corps based on the force buildup requirements of "rapid mobility, long-range transportation, and vertical deep assault."²³ Whereas the 15th Airborne Corps is a paratrooper unit, the Airborne Corps can also drop troop carriers and guns, making its force deployment more powerful. Air Force drills have evolved from single aircraft model (branch) to multi-aircraft model (branch) joint drills, and from single theater command drills to multi-theater command joint drills. Taiwan makes a valid assessment that the PLAAF is now equipped with rudimentary joint airborne operations capabilities.²⁴

PLA aircraft entry into the southwestern airspace of the TADIZ has become more prominent since 2020. Comparing the fourth quarters of 2020 and 2021 shows that half of the entries in the former were made by a single Y-9 patrol aircraft (called Y-8 anti-submarine patrol aircraft in Taiwan). In 2021, the ratio of Y-9 patrol aircraft dropped sharply to one-tenth, while flights of the KJ-500 airborne early warning and control aircraft, various fighters, and H-6 bombers increased dramatically (see Table 1). In addition, on the same day as these aircraft, the PLA has flown a range of operational support aircraft, including electronic intelligence aircraft and communication countermeasure aircraft, which may have been aimed at accumulating information in the TADIZ airspace. Furthermore, the PLA has conducted orientation flights in the same airspace, including flying aircraft to the eastern airspace of Taiwan's main island, as well as drills that appear to simulate attacks against U.S. forces in the Pacific (see Figure 1).

Table 1: Number of Chinese Military Aircraft Entries into the TADIZ in 2020 Q4 and 2021 Q4

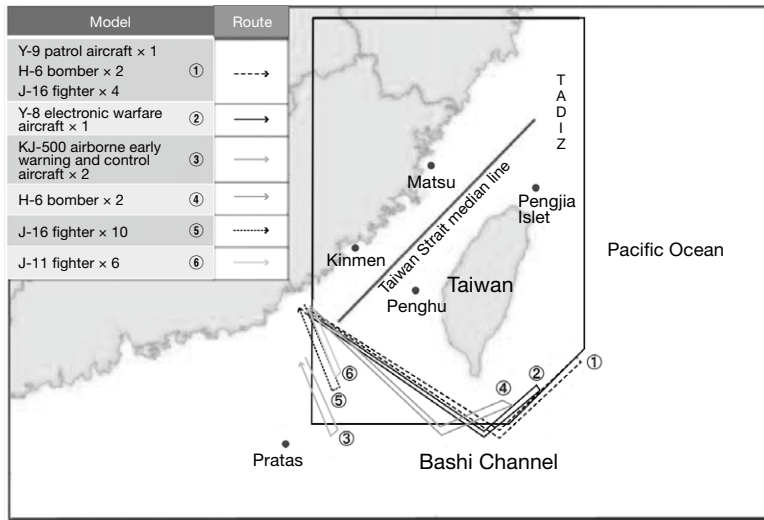
Model	October–December 2020	October–December 2021
Y-9 patrol aircraft	48	40
Y-8 electronic warfare aircraft	16	17
Y-9 reconnaissance aircraft	17	16
Y-8 electronic intelligence aircraft	3	7
Y-9 communication countermeasure aircraft	9	14
KJ-500 airborne early warning and control aircraft	2	21
J-16 fighter	2	186
J-11 fighter	0	42
J-10 fighter	2	38
Su-30 fighter	2	18
H-6 bomber	0	22
Year total	101	421

Source: Compiled by the author based on press releases of the Air Force Command Headquarters, ROC MND.

²³ 2019 National Defense Report, p. 37; 109 Nian zhonggong junli baogao shu, pp. 19–20.

²⁴ 109 Nian zhonggong junli baogao shu, pp. 19–20.

Figure 1: Status of PLA Aircraft Flights on June 15, 2021



Source: Compiled by the author based on a press release of the Air Force Command Headquarters, ROC MND (June 15, 2021).

With regard to the Rocket Force, Taiwan discusses its participation in joint exercises of theater commands and participation in PLA-wide strategic exercises, as well as its ability to deter Taiwan operations and foreign forces from providing relief to Taiwan.²⁵ Concerning the Strategic Support Force, Taiwan explains that it has developed the BeiDou navigation satellite system and command and control datalink systems, giving it advanced capabilities to support theater commands’ joint command and control, target monitoring and reconnaissance, sea and air blockades, and precision strikes.²⁶ Additionally, Taiwan mentions the formation of the Joint Logistics Support Force to achieve unified logistic services across military services, as well as the strengthening of logistics capacities through cooperation with local organizations.²⁷

The PLA seeks to execute comprehensive joint operations that encompass not only the PLAA, PLAN, PLAAF, and Rocket Force but also the space, cyber, electromagnetic, and cognitive domains.²⁸ For this reason, the Strategic Support Force plays a significant role. In addition, it is thought that the Joint Logistics Support Force was formed because the execution of such a large joint operation required facilitating the increasingly complex and sophisticated supply system across the theater commands. The establishment of the Joint Logistics Support Force has advantages from the perspectives of breaking down military service parochialism and promoting military-civil dual use of strategic supplies and personnel. At the same time, the issues that arise

²⁵ 109 Nian zhonggong junli baogao shu, pp. 20–21.

²⁶ ROC 2021 Quadrennial Defense Review Editorial Committee, 2021 Quadrennial Defense Review (Taipei: MND, 2021), pp. 11–13.

²⁷ Ibid., pp. 11–13.

²⁸ Sugiura, *China Security Report 2022*, p. 24.

from the elimination of familiar logistics units need to be examined going forward.²⁹

Taiwan's assessment of China's joint operations capabilities is characterized by its recognition of the People's Armed Police (PAP) as an organization that supports active units during contingencies.³⁰ In January 2018, the PAP was reorganized under the unified command of the Central Military Commission.³¹ In theater commands, the PAP and the military services and branches examine joint operations command mechanisms and cooperative operations capabilities. As a result, the present PAP is considered to have rudimentary joint land operations capabilities. Furthermore, the China Coast Guard (CCG) was placed under the PAP in 2018. The CCG is strengthening its sea area control, counter-assault, and emergency rescue capabilities.³²

The PAP was originally under the dual leadership of the Central Military Commission and the Ministry of Public Security, which made it difficult to create units, make policy decisions, and speed up implementation.³³ The placement of the PAP under the unified leadership of the Central Military Commission improved rapid decision-making and communication required for joint operations, and is assumed to have increased PAP units' ability to execute operations. China's National Defense Law identifies the PAP as one of the armed forces, along with the military and militia. The Armed Police Law of the PRC stipulates that the PAP's wartime missions are to be commanded by the Central Military Commission or a theater command delegated by the commission, while the Coast Guard Law of the PRC stipulates that the CCG is to conduct defensive operations, among other missions.³⁴ Given the above, the PAP and the CCG have enhanced their nature as paramilitary organizations that complement the PLA and fulfill a greater role in joint operations. Accordingly, the PAP and the CCG are expected to leverage their status as law enforcement agencies to create "gray zone situations" in coordination with the PLA and apply pressure on Taiwan.

(2) PLA Military Actions against Taiwan

In forecasting PLA operations against Taiwan, the MND traditionally focused on blockade, firepower strikes, and joint landing operations. But with China's rapid advances in science and technology, emphasis has shifted in recent years to technical areas, such as reconnaissance and early warning, cyber and electromagnetic, and command and communications.

The PLA routinely collects intelligence with imagery and electronic reconnaissance satellites, over-the-horizon radars, early warning aircraft, anti-submarine patrol aircraft, unmanned aerial

²⁹ Lin Chun An, "Gong jun junqu gai zhanqu zhi houqin tizhi biange yu libi fenxi [Analysis of the Logistic System Changes from the Reorganization of the CCP Army's Military Regions into Theater Commands and Their Advantages and Disadvantages]," *Lujun Houqin Jikan* [Army Logistics Quarterly], November 2017, pp. 23–26.

³⁰ *109 Nian zhonggong junli baogao shu*, p. 14.

³¹ Regarding the People's Armed Police before the organizational restructuring, see Momma Rira, "The History and the Future of the People's Armed Police," in *China Security Report 2014: Diversification of Roles in the People's Liberation Army and the People's Armed Police* (Tokyo: NIDS, 2015).

³² *109 Nian zhonggong junli baogao shu*, pp. 23–24.

³³ Yu-Lin Hsieh, "Xi lun zhongguo dalu wujing gaige zhi yihan yu fazhan [The Implication and Development of China PAPF's Reform]," *Zhanwang Yu Tansuo* [Prospect & Exploration], vol. 17, no. 2 (February 2019), p. 127.

³⁴ Law of the People's Republic of China on the People's Armed Police (revised June 20, 2020), Article 10; Coast Guard Law of the People's Republic of China (enacted January 22, 2021), Article 83.

vehicles, other reconnaissance aircraft, and intelligence-gathering vessels. The PLA’s capability to monitor maritime and air activities west of the second island chain poses a threat to Taiwan’s Navy and Air Force.³⁵ The PLA has improved its command and communications mechanisms and expanded the scope of its joint operations command to the west side of the first island chain.³⁶ In addition, the PLA has built various electronic disturbance positions around the country. It is continuously upgrading the main armaments of its Navy and Air Force with electronic warfare capabilities. With “joint cyber and electromagnetic wave operations” as its goal, the PLA is developing platforms for attacks and executing cyberattacks against key political, economic, and military institutions in Taiwan. It was subjected to more than 1.4 billion cyberattacks from 2019 to August 2021.³⁷

Battle in the cognitive domain (cognitive warfare) is another aspect attracting attention vis-à-vis improving cyber offensive capabilities. Taiwan officially defined China’s warfare as cognitive warfare for the first time in a report that the National Security Bureau submitted to the Legislative Yuan, which states that China conducted “cognitive operations” against Taiwan, imitating the Russian method.³⁸ The MND’s first external document to mention “cognitive operations” was the *2021 Quadrennial Defense Review*, published in March 2021. Subsequently, cognitive operations was also listed in the *2021 National Defense Report* and the *2021 Chinese Communist Party Military Power Report*. The *2021 Quadrennial Defense Review* defines that cognitive warfare “is not confined by time and space” and “is aimed at influencing the mentality and will of the opponents.”³⁹ Although the term “cognitive warfare” is not used, the *2020 Chinese Communist Party Military Power Report* predicts that the PLA will employ the media to incite psychological panic among the Taiwanese masses and will carry out integrated military intimidation that strikes a blow to public morale.⁴⁰ Specifically, the Ministry analyzes that the PLA will spread fake news, paralyze critical targets in Taiwan, step up military activities, coordinate force divisions, conduct exercises, and sail naval vessels inside the contiguous zone of Taiwan’s main island to cause a psychological panic in Taiwan and to disturb and oppress the popular sentiment.⁴¹

In joint landing operations, the PLA will establish air, sea, and electromagnetic dominance and paralyze most assets of the ROC Armed Forces. Then, the PLAA, PLAN, PLAAF, and Rocket Force will be integrated to conquer the main island of Taiwan before outside forces intervene. The military actions include assassination of leaders (beheading operation), occupation of the Penghu Islands, and a full-scale invasion of Taiwan.⁴² Furthermore, civilian ships may be requisitioned for amphibious operations to make up for the PLA’s lack of seafaring capability, which has been

³⁵ *2019 National Defense Report*, p. 46; *2021 Quadrennial Defense Review*, pp. 11–13.

³⁶ *2019 National Defense Report*, p. 46.

³⁷ *2021 National Defense Report*, p. 46.

³⁸ Hou Hsintien, “Dangqian zhongguo dalu dui tai tongzhan xin xingtai ‘renzhi zuozhan’ zhi yanjiu: yi ‘2019 xinguan feiyan’ wei li [A Study on Cognitive Warfare, the New Form of Mainland China’s Joint Operation against Taiwan in the Foreseeable Future: A Case Study of COVID-19],” *Kongjun Xueshu Shuangyuekan* [Air Force Bimonthly Journal], no. 678 (October 2020), p. 28. For the original report of the National Security Bureau, see *Lifayuan Gongbao* [Legislative Yuan Gazette], vol. 108, no. 50, Committee record, pp. 93–97.

³⁹ *2021 Quadrennial Defense Review*, p. 55.

⁴⁰ *109 Nian zhonggong junli baogao shu*, pp. 42–43.

⁴¹ *2019 National Defense Report*, p. 46; *109 Nian zhonggong junli baogao shu*, pp. 42–44.

⁴² *109 Nian zhonggong junli baogao shu*, pp. 42–44.

generally regarded as limited.⁴³ This is also consistent with the U.S. assessment.⁴⁴

The PLA is capable of sending a joint landing force to take over Taiwan's offshore islands.⁴⁵ By conducting a local joint blockade operation against Taiwan's main island or offshore islands, the PLA aims to frustrate the public sentiment, sever Taiwan's economic lifeline, and force peace with China.⁴⁶ Kinmen, for example, is surrounded by mainland China on three sides, making it an easy terrain for the PLA to conduct a blockade operation. Furthermore, there are similarities in public sentiment between Kinmen and mainland China. In recent years, Kinmen is also supplied with water from mainland China on the other side of the strait via a pipeline. These factors are directly linked to the vulnerability of Kinmen and put it at risk of falling down by political rather than military means.

As of 2019, the national defense report indicated that the PLA had the capability to conduct joint operations for executing blockade operations in Taiwan's surrounding seas and airspace and seizing offshore islands.⁴⁷ In the 2021 report, the wording changed to the PLA retains the capability to perform local joint blockades of Taiwan's critical harbors, airports, and outbound routes to cut off sea and air routes.⁴⁸ This change reveals the PLA's heightening sense of urgency toward the blockade of Taiwan.

For the PLA, the intervention of foreign forces (essentially, the U.S. forces) holds the key to a successful invasion of Taiwan. The PLA seeks to strengthen its A2/AD capabilities to prevent the U.S. forces from intervening in the Taiwan Strait issue.⁴⁹ The DF-21D and DF-26 anti-ship ballistic missiles and the DF-10 cruise missiles deployed by the PLA have ranges covering the second island chain. Furthermore, Navy-Air Force joint drills that fly the Air Force's H-6 bombers across the first island chain have become routine. These developments pose a military threat to U.S. forces in the Indo-Pacific and can effectively delay interference between the first and second island chains.⁵⁰

However, the PLA's lack of experience in fighting modern large-scale wars, lack of personnel competent in joint operations, military service parochialism, division of management rights and responsibilities, command links, communication and coordination among staff, trust between the military services, differences in weapon systems, among other aspects require complex adjustments.⁵¹ Additionally, if military clashes were to occur in several regions, the PLA

⁴³ 2021 Quadrennial Defense Review, pp. 11–13.

⁴⁴ 2021 Report to Congress of the U.S.-China Economic and Security Review Commission, One Hundred Seventeenth Congress, First Session (November 2021), p. 396.

⁴⁵ 2019 National Defense Report, p. 48.

⁴⁶ 109 Nian zhonggong junli baogao shu, pp. 42–44.

⁴⁷ 2019 National Defense Report, pp. 47–48.

⁴⁸ 2021 National Defense Report, p. 44.

⁴⁹ 2021 Quadrennial Defense Review, pp. 11–13.

⁵⁰ 2019 National Defense Report, p. 48.

⁵¹ Cheng Jung Lin, “Zhonggong jiefangjun tuidong lianhe zuozhan gangyao (shixing) zhi yiyan [Strategic Implications of the PLA's Trial Implementation Guidelines to Promote Joint Combat Operations],” *Guofang Anquan Shuangzhoubao* [National Defense and Security Biweekly], no. 20 (January 15, 2021), p. 9.

at present lacks sufficient coping capabilities.⁵² The PLA’s joint operations capabilities remain weak compared to that of the U.S. forces.⁵³

In order to overcome this weakness, the PLA is expected to strengthen its joint operations capabilities across theater commands. A case in point is the counter exercise conducted between the 80th Group Army in the Northern Theater Command and the 81st Group Army in the Central Theater Command as part of the Stride-2019, Zhurihe A exercise in Inner Mongolia in 2019. Another is the large-scale military exercise conducted in the Bohai Sea for two and a half months from May 2020.⁵⁴

In addition, a video of Army units conducting an exercise in front of a building that resembles the Office of the ROC President was shown during the Stride 2015 Exercise held at the Zhurihe Training Base.⁵⁵ Psychological warfare against Taiwan may have been a large factor in showing this video of the building.

Figure 2: Structure at a PLA Training Base and the Office of the ROC President



Sources: Feng Chuanmei [The Storm Media], July 22, 2015 (left photo); Office of the President website (right photo).

2. Taiwan’s National Defense System

(1) Taiwan’s Military Strategic Concept

The western part of Taiwan, facing the Taiwan Strait, is a densely populated area where there is a concentration of critical transportation infrastructure, such as highways and high-speed railways. The central part of Taiwan is a steep mountainous region with a series of 3,000-meter-high mountains, dividing the island into the east and west sides. The island’s foothills extend

⁵² Paul An-Hao Huang and Ming-Te Hung, “Zhongguo jiefangjun tongshi yinying taihai yu qita zhanchang zhi nengli pinggu [Assessing China’s Military Capabilities in Multifront Battlefields: The Taiwan Strait and Elsewhere],” *Guofang Anquan Shuangzhoubao* [National Defense and Security Biweekly], no. 7 (July 17, 2020), p. 8.

⁵³ Lin, “Zhonggong jiefangjun tuidong lianhe zuozhan gangyao (shixing) zhi yihan,” p. 10.

⁵⁴ Huang and Hung, “Zhongguo jiefangjun tongshi yinying taihai yu qita zhanchang zhi nengli pinggu,” pp. 10–11.

⁵⁵ “Taihai junqing zhongguo xunlian jidi weixing zhao puguang! He jian woguo zongtongfu ji waijiaobu [Military Situation of the Taiwan Strait: Satellite Photos of Chinese Training Base Come to Light! The ROC Presidential Office and Foreign Ministry Have Suddenly Appeared],” *Ziyou Shibao* [Liberty Times], May 29, 2020.

close to the coastline, and there is little flat land. Taiwan's total population is approximately 23.19 million (as of the end of September 2022), and the five cities directly under the Executive Yuan, where the population is concentrated, also face the Taiwan Strait.⁵⁶ Taiwan with these geographical conditions lacks vertical depth, making it necessary to confront the invading PLA as far away as possible and prevent their landing.

However, Taiwan under the previous Ma Ying-jeou administration adopted the military strategic concept of "resolute defense and credible deterrence" to annihilate the invading PLA at the coastline.⁵⁷ This military strategic concept was adopted in line with the Ma administration's conciliatory stance toward China, aiming to restore Taiwan-China relations that had deteriorated during the Chen Shui-bian administration. As a result, relations with China remained stable during the Ma administration, and China did not strip away countries which had friendly relations with Taiwan. Furthermore, the Cross-Straits Economic Cooperation Framework Agreement (ECFA) was concluded between Taiwan and China. Nonetheless, the modernization of the PLA steadily proceeded as was explained. While the risk of a China-Taiwan war decreased, there were no signs that China reduced its military force against Taiwan. When President Ma Ying-jeou met with General Secretary Xi Jinping in Singapore in November 2015, he expressed concern over the short-range ballistic missiles that were lined up along the shore facing Taiwan. However, General Secretary Xi simply brushed it aside.⁵⁸ It was around the same time that China began to take concrete reorganization steps to strengthen its joint operations capabilities.⁵⁹ That said, these reforms were the most sweeping since the founding of the PRC. Preparations have been steadily underway since 2012 when Xi Jinping became the chairman of the Central Military Commission. Although the Ma administration's appeasement policy with China brought some stability to Taiwan-China relations, it neither halted the military modernization that China is pursuing, nor result in securing Taiwan's military security.

This experience may have prompted the Tsai Ing-wen administration, which assumed power in 2016, to adopt the "resolute defense and multi-domain deterrence" military strategic concept for countering the invasion of enemy forces. Its guiding principle is to "resist the enemy on the other shore, attack the enemy on the sea, destroy the enemy in the littoral area, and annihilate the enemy on the beachhead."⁶⁰ In particular, the mention of resisting the PLA on the Chinese coast indicates that the ROC Armed Forces aim to launch an attack as far away as possible from Taiwan, including mainland China.

⁵⁶ ROC Ministry of Interior, "Tudi mianji, cun li lin, hu shu ji xianzhu renkou shu [Land Area, Villages and Neighborhoods, Number of Households, and Number of Current Residents]." Taipei City, a city directly under the Executive Yuan, is surrounded by New Taipei City.

⁵⁷ 2015 National Defense Report Editing Committee, *2015 National Defense Report, the Republic of China* (Taipei: MND, 2015), p. 114.

⁵⁸ Takeuchi Takayuki, "Hatsu no Chu-Tai shunokaidan no haikei to igi [The First China-Taiwan Summit Meeting: Background and Significance]," *IDE Square*, Institute of Developing Economies, Japan External Trade Organization, November 2015; "Zhongguo feidan fei dui tai? Guofangbu: Bushu shi shishi [Chinese Missiles Not Directed at Taiwan? Ministry of Defense: Deployment is a Fact]," *Ziyou Shibao* [Liberty Times], November 19, 2015.

⁵⁹ Sugiura, *China Security Report 2022*, pp. 34–46.

⁶⁰ ROC 2017 Quadrennial Defense Review Editorial Committee, *2017 Quadrennial Defense Review* (Taipei: MND, 2017), p. 39. This guiding principle wavered temporarily but has now been restored. See Ogata, "Kindaika susumeru kaihogun to taiwangun no taio," Part II, pp. 42–43.

(2) The ROC Armed Forces’ National Defense System

In order to counter the PLA’s joint operations against Taiwan, the ROC Armed Forces are carrying out their own reforms to build a military force capable of executing such counteroperations. In particular, the ROC Armed Forces are working hard to enhance their asymmetric warfare capabilities, strengthen their measures against air threats, upgrade drills and exercises in response to the PLA’s situation, build an all-out defense system, and prepare for cyber and electromagnetic warfare.

Building Asymmetric Warfare Capabilities

China’s defense budget for FY2021 was approximately 208.47 billion dollars, which is about 16 times larger than Taiwan’s. In addition, China dominates Taiwan in frontal equipment. Taiwan does not have any chances of winning if fighting is conducted only from the front. Therefore, it has focused on asymmetric warfare capabilities and has announced an intention to strengthen them.⁶¹ As the naval vessels in transit are vulnerable, Taiwan intends not only to attack the PLA sailing toward it across the Taiwan Strait, but also to force the PLA to assemble at airfields and ports as far away as possible from the main island of Taiwan. In addition, the ROC Armed Forces attempt to counter PLA attacks by shooting down military aircraft with surface-to-air missiles, attacking large naval vessels with anti-ship missiles launched from small and fast naval vessels, deploying land-based cruise missiles, and laying naval mines and landmines.⁶²

Among the equipment of note from recent years is the long-range strike weapons that the ROC Armed Forces have aggressively purchased and developed. In 2020, Taiwan notified Congress about plans for the United States to sell to Taiwan: air-to-surface missiles (SLAM-ER), high mobility rocket artillery systems (HIMARS), and coastal defense cruise missiles (CDCM). Taiwan is also set to purchase four MQ-9B high-performance unmanned attack aircraft capable of monitoring the PLA’s movements in peacetime. The situation has changed drastically from the past when the United States was reluctant to sell to Taiwan any ground attack equipment that could directly target mainland China. While it will take some time before these weapons are deployed, it is significant that the United States approved Taiwan’s acquisition of actual means to “reject the enemy on the other side of the Taiwan Strait.”

The Tuo Chiang-class missile corvette (600 t), commissioned in 2020, has the capability to attack the PLAN’s aircraft carriers and destroyers with its onboard anti-ship missiles and to place naval mines. The Coast Guard Administration has introduced and begun deploying patrol vessels based on the hull of the Tuo Chiang. Plans have also been announced to mount anti-ship missiles on these patrol vessels during contingencies. Taiwan’s policy of having maritime law enforcement vessels participate in military operations is similar to China’s and constitutes a distinctive feature of Taiwan’s defense operations.

Dealing with Air Threats

Defending against China’s steady buildup of missile assets will also be critical. In addition to PAC3s, Taiwan operates Tien Kung (Sky Bow)-1 and 2 missiles and Hawk missiles, which were

⁶¹ ROC Office of the President, “Inaugural Address of ROC 15th-term President Tsai Ing-wen,” May 20, 2020; *2021 Quadrennial Defense Review*, p. 26.

⁶² *2021 National Defense Report*, p. 67.

developed independently by Taiwan. The first Patriot system purchased consisted of three sets of PAC2s, which have since been converted into PAC3s. Together with the six sets of PAC3s subsequently purchased, a total of nine sets are deployed in northern, central, and southern Taiwan (three sets, respectively). Their deployment density is assessed to be among the highest in the world.⁶³ The Tien Kung-3 completed in 2017 is vehicle-mounted and mobile—not fixed like Tien Kung-1 and 2 which had been their drawback—allowing it to evade the enemy’s first strike.⁶⁴

However, some have noted that China’s DF-11 and DF-15 missiles use an ultra-small propulsion system on the warhead to modify the attack target after the warhead and shell are separated, making it difficult to intercept them with Patriot and other systems.⁶⁵ Furthermore, it is unclear to what extent Taiwan’s air defense missile network can cope with a saturation attack by PLA missiles. All missiles equipped by the ROC Armed Forces are for low- and mid-air use. Thus, ballistic missile attacks cannot be fully eliminated without strategic base attacks as well as missile or surface defense systems, such as THAAD, for defending against missiles high in the air.⁶⁶

Also important are measures against PLA aircraft that enter the TADIZ. Taiwan’s MND has scrambled fighters with each entry. In 2020, 380 PLA aircraft entered the southwest airspace of the TADIZ.⁶⁷ The ministry announced that it will “use air defense missile radars to conduct tracking and surveillance” of PLA aircraft.⁶⁸ That the surveillance does not use conventional radars suggests that Taiwan wished to demonstrate its strong posture toward the PLA. At the Air Operations Command, which is responsible for the surveillance of PLA aircraft, the commander was a lieutenant general and the deputy commander was a major general; however, in 2020, the deputy commander rank was elevated to lieutenant general.⁶⁹ This measure was likely in response to the growing importance of the deputy commander’s duties, as the PLA continues to increase its air threat.

Drills and Exercises

The PLA does not have experience in modern joint operations, as this paper has already noted,

⁶³ Luo Wen Cheng and Tsai Zong An, “Woguo yu zhongguo dalu fangkong feidan xitong bijiao ji fazhan zhi yanxi [Study Analysis: Comparison of Taiwan and Mainland China’s Air Defense Missile Systems and Their Development],” *Kongjun Xueshu Shuangyuekan* [Air Force Bimonthly Journal], no. 667 (December 2018), p. 36.

⁶⁴ Luo and Tsai, “Woguo yu zhongguo dalu fangkong feidan xitong bijiao ji fazhan zhi yanxi,” p. 47.

⁶⁵ Chang Ching Hsiang and Chen Kuan Chieh, “Cong zhongguo dalu dongbu zhanqu dandao feidan dui wo weixie lun wo fangpao budui zhanchang jingying yu ying zuowei [Preparedness of Taiwan’s Air Defense Artillery Forces for Battlefield Operations Based on the Threat to Taiwan Posed by Ballistic Missiles in the Eastern Theater Command of Mainland China],” *Kongjun Xueshu Shuangyuekan* [Air Force Bimonthly Journal], no. 661 (December 2017), p. 63.

⁶⁶ Chang and Chen, “Cong zhongguo dalu dongbu zhanqu dandao feidan dui wo weixie lun wo fangpao budui zhanchang jingying yu ying zuowei,” p. 70.

⁶⁷ “Taiwan guofangbu zhiku: 2020 Nian zhonggong junji qinrao taiwan lidu jiada kong shiyuyuanwei [Taiwan’s Defense Ministry Think Tank: CCP Army Military Aircraft Intrusions into Taiwan Increased in 2020, The Situation May Move in an Undesired Direction],” VOA (Chinese), January 4, 2021. This was the largest number of aircraft since the Taiwan Strait missile crisis in 1996.

⁶⁸ For example, ROC MND, “Zhonggong jiefangjun huodong dongtai [CCP PLA Activities],” February 20, 2021.

⁶⁹ “Dujia kong fang zhanbei renwu chizhong Cai zongtong heding kongzuobu fuzhihuiguan tisheng wei zhongjiang [Scoop: Air Defense and War Preparation Mission is a Great Responsibility, President Tsai Elevates Deputy Commander of the Air Force Operations Command to Lieutenant General],” *Ziyou Shibao* [Liberty Times], May 20, 2020.

and the same is true of the ROC Armed Forces. Drills and exercises are intended to compensate for this disadvantage.

(a) Combined branch drills

The drills are conducted under the guidance of the Command Headquarters of the ROC Army. A training command is established in one of the three corps of the ROC Army, placing under its command the remaining two corps, the Marine Corps, among other units. Taiwan is working to strengthen the combined branch drills by conducting joint drills in field air defense, anti-anchoring, and anti-landing as well as live-fire drills on the beach. Furthermore, based on joint operations guidance, Taiwan constantly conducts drills that align the Navy and Air Force’s units specializing in areas such as command and control of joint operations, missiles, and electromagnetic warfare, thereby strengthening the joint defense operations capabilities of units that have specialties across multiple services and branches.⁷⁰

(b) Joint drills by military services

The ROC Armed Forces conduct Army-Navy-Air Force joint exercises and drills centered on the Han Kuang Exercise, an annual joint exercise of the three services.⁷¹ The exercise is usually conducted in the order of computer-based desk exercises (command post exercises) followed by live-fire exercises. The content of the exercises has been upgraded in response to the PLA’s modernization and capability improvements. For example, the 36th Han Kuang live-fire exercise from July 13 to 17, 2020 simulated asset protection on the first day, stopping an enemy invasion on the second and third days, and destroying enemy forces on the fourth and fifth days.⁷²

On the first day of the exercise, the Air Force conducted a drill for rapidly moving the fighters, C-130HE electronic warfare aircraft, and P-3C patrol aircraft deployed mainly in the western area of Taiwan’s main island to its eastern area.⁷³ The 36th exercise also incorporated the COVID-19 outbreak. It simulated that the Army’s armored brigade was attacked by biological weapons during an operational maneuver, and the chemical corps conducted decontamination work on the assumption that many officers had been contaminated.⁷⁴ In a joint anti-landing operation exercise conducted on the Jianan Coast in Taichung, which corresponded to the final phase of enemy force destruction, the scenario was that the enemy was approaching from the Taiwan Strait waters. In response, air force fighters, naval guns, and army multi-launch rockets started counterattacks on the sea area where the enemy landing craft were anchored. The Army’s artillery and combat helicopters joined the attacks against the landing craft that was gradually approaching. Ultimately, once the enemy forces approached the water’s edge, attacks were launched by combat vehicles and

⁷⁰ 2019 National Defense Report, p. 96.

⁷¹ 2019 National Defense Report, p. 96.

⁷² “Chugoku ni yoru shinko o sotei shita jitsudan enshu, hajimaru/Taiwan [Taiwan Begins Live-Fire Exercise Simulating an Invasion by China],” *Focus Taiwan* (Japanese), July 13, 2020.

⁷³ “Dujia potianhuang! 20 Nianlai jiashan jidi hanguang yanxi shou du wu zhanji qi jiang [Scoop: Unprecedented! No Takeoff and Landing of Fighters at the Chiashan Air Force Base during the Han Kuang Exercise for the First Time in 20 Years],” *Ziyou Shibao* [Liberty Times], July 13, 2020.

⁷⁴ “Hanguang yanxi yi yiqing wei jian guojun jiang ‘shengwu zhan’ na shibing yanlian [Han Kuang Exercise Reflects COVID-19 Pandemic, ROC Armed Forces Incorporate Biological Warfare into Actual Warfare Exercises],” *Ziyou Shibao* [Liberty Times], July 13, 2020.

various small-caliber artillery guns. In these attacks, a joint service battalion of the Army's 234th Brigade, newly formed by the ROC Armed Forces in May 2019, was deployed to examine whether a single battalion could independently carry out the operation.⁷⁵ The battalion was composed of infantry, armored soldiers, UAV pilots, stinger missile and sniper teams, and liaison officers from the military services, and was equipped with the Yunpao (Clouded Leopard) eight-wheeled armored vehicle.⁷⁶ In addition, for the first time, a drill was conducted simulating a PLA beheading operation (an assault, abduction, and assassination operation against the president and other key figures), in which the Military Police Command's Military Police Special Services Company, the National Police Agency's Special Operations Group, and the Coast Guard Administration's Coast Guard Special Task Unit were deployed in coordination with each other.⁷⁷

It is highly notable that in this way Taiwan is upgrading its annual exercises to suit the situation.

Building an All-Out Defense System

In the face of an overwhelming gap in troop strength, the ROC Armed Forces may find solace that the PLA cannot send all of its forces toward Taiwan.⁷⁸ In addition, if Taiwan's approximately 2.2 million reserve forces can be effectively mobilized, they would be useful in intercepting the PLA's joint landing operation attempt. To this end, on January 1, 2022, Taiwan's MND elevated and reorganized the All-Out Defense Mobilization Office, an organization under the ministry's headquarters, into the All-Out Defense Mobilization Agency, an organization directly under the ministry. The Reserve Command, which had been a military organization, was also placed under the agency.⁷⁹ The All-Out Defense Mobilization Agency is responsible for formulation, supervision, and execution of the military mobilization policies of the ROC Armed Forces, management and service of reservists, formulation and execution of policies concerning the mobilization management information system, and formulation and supervision of policies on military supplies, military transport, and military industrial mobilization.⁸⁰ The number of personnel assigned to the agency was increased from 30 to 150. The 2022 budget also includes funding for visits to the United States to study the U.S. reserve officer system.⁸¹

⁷⁵ "Hanguang yanxi ming kaida yanzheng lianbingying zhan li [The Han Kuang Exercise to Start Tomorrow, Will Verify the Assets of the Joint Service Battalion]," *Ziyou Shibao* [Liberty Times], July 12, 2020.

⁷⁶ "Lianbingying jian daowei lujun 234 lü lianhe bingzhong ying biancheng wanbi [Creation of Joint Service Battalion Makes Progress: Joint Service Battalion of the Army's 234th Brigade Is Formed]," *Lianhe Xinwen Wang* [United Daily News], June 17, 2020.

⁷⁷ "Kanko gunji enshu, 'shucho rachi' ni hajimete sandai 'tokkintai' ga godo de taisho [Han Kuang Military Exercise: Three Major Special Service Companies Jointly Respond to Abduction of Mayor Scenario]," *Taiwan Today* (Japanese), July 10, 2020.

⁷⁸ "Chugoku no Taiwan shinko 'zenryoku de no kogeiki wa muzukashii' Nichi-Bei ni yoru kanshi nado shiteki: kokubobu [Ministry of National Defense Says China Cannot Invade Taiwan with Full Force due to Japanese and U.S. Surveillance, among Other Factors]," *Focus Taiwan* (Japanese), December 14, 2021.

⁷⁹ *2021 National Defense Report*, p. 81.

⁸⁰ "Shashin: kokubobu ni 'zenmin boei doinsho,' kanrenhoan ga kaketsu seiritsu [Photo: All-Out Defense Mobilization Agency to be Established in the Ministry of National Defense, Relevant Legislation Passed and Enacted]," *Taiwan Today* (Japanese), May 24, 2021.

⁸¹ "Quanmin fangwei dongyuan shu mingnian cheng li jiang fu mei kaocha jiqu jingyan [All-Out Defense Mobilization Agency to be Established Next Year, Plans to Visit the United States to Learn from Its Experience]," *Zhongyang Tongxunshe* [Central News Agency], September 1, 2021.

The maintenance of air-raid shelters, which is closely related to air threats, is also drawing attention. Taiwan originally had a requirement to install air-raid shelters in buildings over a certain size. Recently, as the possibility of a Chinese missile attack becomes more realistic, apps have been circulated to inform the location of air-raid shelters.⁸²

Establishment of the Information, Communications and Electronic Force Command

To deal with the PLA’s informatized warfare and intelligitized warfare, the ROC Armed Forces integrated and reorganized the existing Information and Electronic Warfare Command, the Communications Development Office, and related units that were dispersed among the services into the Information, Communications and Electronic Force Command (资通电军指挥部) in June 2017.⁸³ Its main missions are, in peacetime, to ensure the security of Internet space, conduct reconnaissance of the electromagnetic spectrum, and build and maintain a command and control system, and in wartime, to protect the ROC Armed Forces’ information and communications and assist in the defense of critical information infrastructure.⁸⁴ It has a force size of 6,000 personnel with up to one lieutenant general (commander) and three major generals (deputy commander, chief of staff, and Internet warfare regimental commander).⁸⁵

Fake news disseminated by China, which include disinformation, hoax, and misinformation, arouse public suspicion and break down internal unity.⁸⁶ For example, a local Communist Party-run news website reported that the PLA would conduct a live-fire drill in the “vicinity of the Taiwan Strait.” Taiwan’s MND revealed that this drill in fact would take place in waters off the coast of Zhejiang Province, some 324 kilometers from Keelung in northern Taiwan.⁸⁷ Such fake news is similar to aggressively reported misinformation that exaggerates ordinary small-scale exercises and drills, and can be construed as public opinion warfare aimed at unsettling the Taiwanese people.⁸⁸ The Taiwanese MND has established a rapid response team at its headquarters to counter fake news.⁸⁹ However, the measures of the ROC Armed Forces are insufficient for the PLA’s promotion

⁸² Kaohsiung City Government, “Gaoxiong shi fangkong shusan binan sheshi dianzi ditu shouji caozuo shuoming [Kaohsiung City’s Air Defense Evacuation and Refuge Facilities: Electronic Map and Mobile Phone Operation Instructions].”

⁸³ ROC Office of the President, “Zitongdianjun chengjun zongtong: Youxing guotu, hanwei daodi; shuwei guotu, juebu rangbu zongtong chuxi ‘guofangbu canmou benbu zitongdianjun zhihui bu biancheng dianli’ [Information, Communications and Electronic Force Established, President Says Taiwan Will Defend Tangible Land and Never Give Up Digital Land, President Attends the Ceremony for the Formation of the Information, Communications and Electronic Force Command at the Ministry of National Defense General Staff Headquarters],” June 29, 2017.

⁸⁴ Recruitment Center of National Armed Forces, “Zitongdianjun [Information, Communications and Electronic Force Command],” updated January 20, 2021.

⁸⁵ “Xinxing junzhong shou zhongshi zitongdianjun zeng 2 jiangguan [Importance Attached to Emerging Military Service, Information, Communications and Electronic Force Adds Two Officers],” Zhong Shi Xinwen Wang [China Times Net], July 6, 2021.

⁸⁶ “Yinying jia xunxi gongshi guofangbu chengli fanzhi chuli xiaozu [The Ministry of National Defense Establishes Rapid Response Team to Deal with the Fake News Campaign],” Junshi Xinwen Tongxunshe [Military News Agency], May 2, 2019.

⁸⁷ “Chugokugun ga sekkosho oki de jitsudan enshu kokubobu ‘doko o kibishiku kanshi’/Taiwan [Taiwan’s Ministry of National Defense Says It Will Rigorously Monitor the PLA’s Live-Fire Exercises Off the Coast of Zhejiang Province],” Focus Taiwan (Japanese), May 7, 2019.

⁸⁸ Sugiura, *China Security Report 2022*, p. 83.

⁸⁹ “Yinying jia xunxi gongshi guofangbu chengli fanzhi chuli xiaozu,” May 2, 2019.

of joint operations in informatized warfare, as well as for the PLA's shift to intelligentized warfare operations to control the enemy's cognitive domain.

Measures to boost the morale of the Taiwanese people are not limited to the military. Support for Taiwan by the international community lifts the morale of the Taiwanese military and civilian population. China is well aware of this and is therefore strongly critical of the international community's efforts to support Taiwan.⁹⁰

The above analysis suggests that, compared to the "resolute defense and credible deterrence" concept under Ma Ying-jeou's rule, the Tsai administration's "resolute defense and multi-domain deterrence" military strategy concept better reflects Taiwan's present situation and is a more realistic operation. It is also notable that the Tsai administration is implementing organizational restructuring and other necessary measures.

Diminishing Significance of Offshore Island Defense

The national defense reports and the CCP military power report do not elaborate on the defense of offshore islands that Taiwan effectively controls, such as the Kinmen Islands, Matsu Islands, Itu Aba Island, and Pratas Islands. In the 1940s and 1950s, Kinmen and Matsu near mainland China were truly at the forefront. However, due to the development of weaponry and changes in strategy and tactics, these offshore islands are playing an overwhelmingly political role, embodying the ROC's principle that Taiwan is not the only territory under its control, rather than serving as a military bulwark. The diminishing security significance of the offshore islands effectively controlled by Taiwan can also be understood from the fact that troop strength has not been increased sufficiently for defending these islands, despite the growing military pressure from China.

For this reason, no longer are generals assigned as commanders, as in the Kinmen and Matsu command headquarters, and no longer are tens of thousands of troops deployed. The command headquarters has been downgraded to command. Furthermore, the commander is a lieutenant general, and the number of personnel is estimated at around 3,000.⁹¹ The mines that were placed along the coast of Kinmen Island and the stakes that block parachute drops and helibombs have all been removed. Videos have been released showing the use of M59 155mm cannon and M1 240mm howitzer, which are installed in artillery positions in Matsu by rail from the mountainside. However, the use of old weapon models stands out. It should be assumed that the PLA knows the locations of the artillery positions. Even if there were artillery positions other than those appearing in the videos, they may have been detected by reconnaissance satellites. If the offshore islands are in close proximity to mainland China, small reconnaissance drones may be difficult to detect when flown at night. In the case of a battle between China and Taiwan over these offshore islands, these artillery positions would likely be the first targets of cruise missile attacks. The combat vehicles deployed on the offshore islands under the Kinmen Defense Command are M41 tanks that began

⁹⁰ Shan-Son Kung, "The Division of Labor and Strategy of CCP Authority toward Taiwan Taking the Taiwan Affairs Office (TAO) and the Ministry of Foreign Affairs (MFA) as Examples," in Kuan-Chen Lee and Ming-Te Hung, eds., *2021 Report on the Development of the Chinese Communist Party's Politics and Military*, Institute for National Defense and Security Research, 2021, pp. 53–66.

⁹¹ "Shidai bianle jinmen shiwan xiongbing ruijian cheng 3 qian jingbing [Changing Times: The 100,000-Strong Kinmen Army Reduced to 3,000 Elite Personnel]," TVBS NEWS, April 17, 2018.

mass production in the 1950s.⁹²

From these facts, it can be inferred that the importance of offshore islands is greatly diminishing on the whole in terms of Taiwan’s military strategy. In addition, the U.S.-China Mutual Defense Treaty, which was concluded when the United States and Taiwan had diplomatic relations, initially excluded offshore islands such as Kinmen and Matsu from the scope of U.S. military defense obligations.⁹³ It is evident that the main island of Taiwan and the Penghu Islands were the important islands for the United States. In the case of China’s attack on an offshore island controlled by Taiwan, China would likely occupy the island in two to three days if it was the Pratas Island where assets are limited to the Coast Guard Administration and a company of the reinforced Marine Corps. The situation would be over before the U.S. forces decided to intervene. Under such circumstances, it is highly doubtful that either Taiwan or the United States would dare to take military action to reclaim offshore islands.

3. Issues Facing the ROC Armed Forces

This section attempts shed light on issues arising over the interception of invading PLA forces and the execution of joint operations by the ROC Armed Forces.

(1) Weak Joint Operations Structure

Firstly, it is questionable whether the ROC Armed Forces have developed a true joint operations structure. The national defense report describes the “development of the joint operations doctrine.” However, it is only four lines long and contains little substance. The Joint Operations Command Center (Hengshan Command Post) is an underground facility in an area in the northern part of Taipei where defense ministry facilities are concentrated.⁹⁴ The center is used by the president, the minister of national defense, and the chief of the general staff to take command in a contingency.⁹⁵ The computer drills of the Han Kuang exercises are conducted here. For each live-fire exercise, a command is established with the Army and Navy commands at the core. Doing so for each exercise, however, may make it difficult to perform highly integrated military operations in a contingency. Until the mid-2000s, the general command headquarters of the Army, Navy, and Air Force had authority over both military administration and military command. Following military reforms, the general command headquarters of the three services were downgraded to command headquarters and are identified as force providers. By contrast, the chief of the general staff as a force user has greater authority, and the chain of command and order has become more favorable for the execution of joint operations. Nonetheless, the joint operations structure is still in the

⁹² “Lujun: 110 Nian 6 yue wancheng lie yu shoubei dadui zhanche genghuan [Army: Replacement of the Combat Vehicles of the Lieyu Garrison Battalion to Be Completed in June 2021],” *Lianhe Xinwen Wang* [United Daily News], October 26, 2020.

⁹³ Igarashi Takayuki, *Tairiku hanko to Taiwan: Chukaminkoku ni yoru toitsu no koso to zasetsu* [The Continental Counteroffensive and Taiwan: The Republic of China’s Unification Concept and Setbacks] (Nagoya: University of Nagoya Press, 2021), p. 47.

⁹⁴ “Yan buzhang qianwang lianhe zuozhan zhihui zhongxin weimian guanbing chunjie liushou xinlao [Minister Yan Visited the Joint Operations Command Center, Expresses Appreciation to the Officers and Soldiers Working During the Lunar New Year],” *Qingnian Ribao* [Youth Daily News], February 12, 2021.

⁹⁵ In the event of a contingency, the provisions of the National Defense Law stipulate that the minister of national defense is to receive orders from the president, and that the minister of national defense is to order the chief of the general staff to take command of the three armed forces.

process of development, including a communication system that can connect the three services without time lag and a system for communication of intention.

Taiwan's MND is considering abolishing the ROC Army's corps and defense commands, reorganizing units around theaters of operation, and strengthening the joint operations capabilities of the Army, Navy, and Air Force. Currently, the ROC Armed Forces are divided into the Army Penghu Defense Command (First Theater of Operation), Huadong Defense Command (Second Theater of Operation), 6th Army Corps (Third Theater of Operation, Northern Taiwan), 8th Army Corps (Fourth Theater of Operation, Southern Taiwan), and 10th Army Corps (Fifth Theater of Operation, Central Taiwan). There are also the Kinmen Defense Command and the Matsu Defense Command. The commanders of the Army corps and defense commands concurrently serve as commanders of the five theaters of operation. During disaster relief operations and war operations, they act as commanders of the theaters of operation. Thus, although the Army is currently the main executer of joint operations, many Navy and Air Force personnel may be assigned as commanders of theater operations in the future.⁹⁶ A debate may emerge that four theaters of operation are too many for Taiwan, an island of approximately 36,000 square kilometers.

(2) Capability Enhancement for Striking Enemy Bases Soon after Invasion Begins

While strengthening the defense capabilities of Taiwan is an urgent issue, it is also vital that Taiwan has a counterattack system ready so that the PLA will be hesitant to attack it. Attacks against strategic bases seem to have already been considered but are not mentioned in official documents, due to concerns that pressure from China would increase further. There is a paper that advocates the need to develop counterweapons and launch an attack on enemy bases.⁹⁷ Attacks against strategic bases may involve the use of the long-range (reportedly 1,000 km) Hsiung Feng (Brave Wind) IIE cruise missile developed by Taiwan, or an attack on enemy ballistic missile launchers by air-to-surface missiles mounted on F-16s or Ching-Kuo jets. In addition, long-range missiles, such as the HIMARS, which the United States has decided to sell to Taiwan in the near future would perform effectively if deployed in actual operations to the main island of Taiwan, the Penghu Islands, or other locations.

From December 2020 to January 2021, a series of missile test-firings were conducted at the Jiupeng missile training base. Despite a no-go zone being set, the highest trajectory altitude of the ballistic missile was "infinity" in the December test.⁹⁸ Some argue that these launches were improvement tests to extend the range of existing missiles.⁹⁹ However, the fact that the highest altitude was set to infinity suggests that the ballistic missile may have been fired in a lofted orbit. The PLA may not be quick to invade Taiwan if it deploys a large number of ballistic and cruise

⁹⁶ "Taiwan qi 'juntuan' gai 'zuozhan qu' jundui gaizhi beihou de yongyi [Taiwan Abolishing 'Corps' and Creating 'Theaters of Operation': The Aim Behind the Military Restructuring]," BBC News (Chinese), May 13, 2021.

⁹⁷ Chang and Chen, "Cong zhongguo dalu dongbu zhanqu dandao feidan dui wo weixie lun wo fangpao budui zhanchang jingying yu ying zuowei," p. 71.

⁹⁸ "Taiwan tobu no kaiiki de misairu shisha 24-ka kara, chokuzen ni wa Chugoku no gunkan ga shutsubotsu [Missile Test-Firing in Taiwan's Eastern Waters to Start on Dec. 24, Chinese Warship Spotted Just Before It]," Focus Taiwan (Japanese), December 23, 2020.

⁹⁹ "Jianzheng tiangong sanxing zengchengxing? Zhongkeyuan jinwan zai dongping shishe wuxian gao feidan [Studying the Tien Kung-3 Extended Range Model? Chinese Academy of Sciences Says Missile with an Infinity Trajectory Altitude Test Fired in Pingtung Tonight]," *Ziyou Shibao* [Liberty Times], December 25, 2020.

missiles capable of reaching China.

(3) Low War-Sustaining Capabilities

If the PLA launches a full-scale joint operation and invades Taiwan, the key question is whether or not the U.S. forces will support Taiwan. In the absence of a mutual security treaty between the United States and Taiwan, the question is whether the U.S. forces will support Taiwan if the PLA invades it. Even if the U.S. forces decide to help, planners should be mindful that this decision will require some time. Taiwan’s MND has declared it would defend Taiwan on its own in the event of an enemy invasion. In reality, Taiwan appears determined to hold the front line until the U.S. forces arrive. However, the ROC Armed Forces cannot hold out for two to three months alone. Strengthening relations with the United States is crucial to Taiwan’s survival. If a Taiwan contingency occurs, it is absolutely essential that the United States, which has no diplomatic ties with Taiwan, decides to have the U.S. forces intervene. In this regard, it is noteworthy that President Tsai Ing-wen said she believed the U.S. forces would come to Taiwan’s aid in a Taiwan Strait contingency, and that she disclosed Taiwan was hosting the U.S. forces.¹⁰⁰ President Tsai would not make such statements without coordinating with the United States. That the U.S. government did not deny President Tsai’s remarks suggests a deepening of U.S.-Taiwan relations.

Taiwan is dependent on crude oil imports from the Middle East, and the possibility cannot be ruled out that China will negotiate with Middle Eastern countries to cut off oil supplies to Taiwan. During the COVID-19 outbreak in Taiwan, President Tsai Ing-wen condemned China for interfering with Taiwan’s negotiations to purchase vaccines. As long as such cases exist, Beijing could very well take measures to obstruct the crude oil supply.

(4) Weak All-Out Defense System and Reserve Forces

When Taiwan’s conscription system was in effect, men who were of suitable age and met the conscription requirements were obliged to serve for at least two years. They lived in barracks at bases or garrisons in various areas of Taiwan, including offshore islands. They were trained in basic troop activities and in how to fire and care for firearms and guns. After the conscription system was fully terminated and shifted to a volunteer system at the end of 2018, men receive only 16 weeks of military training. The ROC Armed Forces’ reserve forces number 2.2 million but lack readiness, and their morale is low.¹⁰¹ Moreover, while there are currently many reservists who have served in the military, they will gradually be replaced by reservists who have received only military training, making the weakening of reserve forces inevitable.

This sense of crisis is the reason Taiwan reorganized the All-Out Defense Mobilization Office into the All-Out Defense Mobilization Agency and is focusing on national defense education. However, it will take some time for these efforts to increase the training and morale of the reserve forces. To prevent a decline in morale of the Taiwanese people, it will be important that Japan, the

¹⁰⁰ “Taiwan soto, beigun ukeire mitomeru: Chugoku no kyoi ‘hibi zodai’ CNN [CNN: Taiwan’s President Says the Threat from China Is Increasing ‘Every Day’ and Confirms Presence of US Military Trainers on the Island],” JIJ.COM NEWS, October 28, 2021.

¹⁰¹ Joyu Wang and Alastair Gale, “Does Taiwan’s Military Stand a Chance Against China? Few Think So: Poor Preparation and Low Morale Are Pressing Concerns; Sweeping Leaves and Pulling Weeds in Basic Training,” *Wall Street Journal*, October 26, 2021.

United States, and other Western countries constantly demonstrate their support for Taiwan.

Conclusion

This paper shed light on Taiwan's analysis of the PLA's enhanced capabilities for executing joint operations and how the ROC Armed Forces are attempting to counter the PLA's invasion of Taiwan. As of writing, Taiwan assesses the capabilities of the PLA as follows. The PLAA, PLAN, PLAAF, Rocket Force, Strategic Support Force, and Joint Logistics Support Force are actively working to simplify the chain of command and modernize weapons and equipment. It is also known that China intends to incorporate paramilitary organizations, such as the People's Armed Police and the China Coast Guard, into its joint operations structure. The PLA prioritizes and conducts drills and exercises to overcome its weakness, i.e., lack of experience in performing modern joint operations. Due to the improvement of force projection capabilities using civilian ships, the possibility of conducting a joint operation on the main island of Taiwan is becoming more of a reality. The PLA has developed the capability to blockade key harbors and airports. It already has the capability to invade offshore islands effectively controlled by Taiwan. In fact, Taiwan has minimal capability to defend offshore islands smaller than Kinmen and Matsu, making their seizure highly likely in the event of a full-scale invasion by Chinese forces. The PLA has not seized any offshore island from Taiwan since the 1950s. Thus, if China succeeds in seizing even one of the offshore islands during the Xi Jinping regime, it will leverage this success to strengthen the prestige of Xi himself and the CCP. This would be met with significant international condemnation. Domestically, however, effective propaganda can be conducted under the CCP's one-party rule, and the system in place does not allow dissenting opinions to be expressed on the Internet. It is anticipated that Chinese people who have received patriotic education will hail the seizure of the islands.

On the other hand, Taiwan itself is working to counter the PLA with its limited resources. Taiwan has made notable efforts, such as acquiring and developing weapons capable of striking China against the backdrop of stronger relations with the United States, upgrading exercises, and reorganizing the military for efficient use of reserve forces. Similar to the PLA, however, the ROC Armed Forces have not experienced modern joint operations, and have been unable to conduct formal joint exercises with other countries for more than 40 years. Although it is difficult to find an opportunity to fundamentally resolve this situation, it is expected that the ROC Armed Forces will continue to transform themselves into a force capable of performing joint operations.