

INDSR

Newsletter



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Institute for National Defense and Security Research



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The Legal (Warfare) Implications of China's Naval Blockade of Taiwan

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Topic: International Trend

1. News Highlights

In August 2022, China held military exercises in the Taiwan Strait on the occasion of US House Speaker Nancy Pelosi's visit to Taiwan, which was interpreted as sending a message that the PLA was capable of blockading Taiwan. Since then, maritime blockades have increasingly become part of the scenarios where there is rising tension across the Taiwan Strait. Most of these commentaries, however, focus on Taiwan's will and ability to resist as well as possible US responses "after" the Chinese blockade takes shape rather than "how" the action could occur. On

January 30, 2023, Australian scholar Rob McLaughlin wrote an article exploring the implications of China's maritime blockade of Taiwan in the context of the law of armed conflict and law of naval warfare, arguing that it is as legally complex as the blockade itself and that China was on the disadvantaged side in all the different interpretations. As "legal warfare," which is part of the PLA's "three warfares" doctrine, stresses the use of law to justify its conduct of war and limit the opponent's space for maneuvering, it can be inferred that for China to blockade Taiwan, it has to address the legal issue first.¹

A successful blockade not only

1. Rob McLaughlin, "The Law of Armed Conflict, the Law of Naval Warfare, and a PRC Blockade of Taiwan," *Articles of War*, January 30, 2023, <https://tinyurl.com/2p987czm>; For more information on the concept of China's "Three Warfares," see Ming-shih Shen, "The Levels and Strategies of the CCP's Three Warfares and Taiwan's Countermeasures," *Fu Hsing Kang Academic Journal*, Vol. 90 (2007), p. 232; For the theory of blockade and the conditions of success, see Adam Biggs et al., "Theories of Naval Blockades and Their Application in the Twenty-First Century," *Naval War College Review*, Vol. 74, No. 1 (Winter 2021), <https://tinyurl.com/2p8v37yv>.

depends on military power but also involves complex legal, political, diplomatic, economic, technological, and psychological factors. The scope of this article will be limited to the legal (warfare) aspect; other issues, such as the different forms and elements of blockades, will be discussed in a separate article.

2. Security Implications

2-1. Blockade could mean recognition of Taiwan as a sovereign state

If China tries to blockade Taiwan, how will it resort to international law to justify its actions and limit the scope for intervention by other countries? Taiwan's status in international law will be the primary consideration. Blockades

are one of the legitimate means of war, and the subjects of war are sovereign states. Calling the Chinese action against Taiwan a "blockade" implies that China recognizes Taiwan as a nation or at least a belligerent and that the two sides are at war. Consequently, both sides of the Taiwan Strait are subject to the norms of the law of armed conflict and the law of naval warfare. For instance, for a blockade to be deemed legitimate, it must be effective. This means all ships and aircraft of all countries, including the attacking side, will be blocked from entering and leaving the enemy ports and coasts by force. The beginning date, duration, location, and extent of the blockade should be made public. Different measures will also be applied when it comes to the enemy and neutral ships trying to run the blockade.²

Acknowledging Taiwan as a state

2. About Implications of the blockade on Taiwan's legal status, see Rob McLaughlin, "The Law of Armed Conflict, the Law of Naval Warfare, and a PRC Blockade of Taiwan"; Bradley Martin et al., "Implications of a Coercive Quarantine of Taiwan by the People's Republic of China," *RAND*, 2022, pp. 1-2, <https://tinyurl.com/u6sbann6>. The main international legal norms regarding maritime blockade are the "Declaration concerning the Laws of Naval War" of 1909 and the "San Remo Manual" of 1994. Although the former is not in force and the latter was compiled only by a group of legal and maritime scholars, both incorporate principles of international humanitarian law and the law of the sea and are still important reference documents. See "Declaration concerning the Laws of Naval War," *International Committee of the Red Cross*, n.d., <https://tinyurl.com/5afchhdh>; "San Remo Manual on International Law Applicable to Armed Conflicts at Sea," *International Committee of the Red Cross*, 1995, <https://tinyurl.com/39tdufs2>.

is something China must not accept. Hence, to legitimize China's blockade of Taiwan, Chinese scholars have raised the following assertions. First, China claims sovereignty over Taiwan, and therefore the conflict between the two sides is a "non-international armed conflict." Second, while blockades are not originally applicable to the "non-international armed conflict" principle, Chinese scholars believe that China can still legally blockade Taiwan under its assertion of sovereignty and territorial integrity. They argue that by the principle of non-interference enshrined in Article 2.7 of the UN Charter and Article 3 of the 1977 Additional Protocol Relating to the Protection of Victims of Non-International Armed Conflicts, a government may use all lawful means of warfare to preserve national unity and territorial integrity; this also applies to the blockades used in international armed conflicts. Third, although most literature advocates that

the disposal of foreign vessels must conform to international law and the PLA's treatment of wounded combatants, civilians, and victims to the international humanitarian law, some argue that the blockade of Taiwan is a "domestic matter," and so there is no need to make a public announcement as required by international law.³

However, even in the case of "non-international armed conflict," the location or scope of a Chinese blockade is still questionable. Some believe that in the case of an international armed conflict, the blockade can be enforced on the high seas, but since a "non-international armed conflict" is a domestic matter, the blockade should not extend beyond the territorial waters of the country in question. In other words, it's questionable that China could legally block the vast majority of the Taiwan Strait that is not its territorial waters and harass other countries' vessels traveling through those

3. The author has reviewed the "China National Knowledge Infrastructure" database and found little blockade-related literature in Chinese academia. These Chinese papers mostly introduce the evolution of relevant international law, general principles, and important cases. Only two directly discuss the blockade of Taiwan, while another explores the possibility of a US maritime blockade of China in the context of US-China strategic competition. For literature on the blockade of Taiwan, see Yao Jiakun and Zhao Linjie, "A Study of the Legal Aspects of the Maritime Blockade," *Fazhi bolan*, Issue 11, 2019 (April 2019), pp. 118-119; Yin Fei, "Some International Law Aspects of PLA's Implementation of the Maritime Blockade," *Journal of Xi'an Political Science Academy*, Vol. 13, Issue. 4 (August 2000), pp. 68-71.

waters.⁴ This will bring a challenge to the PLA's attempts to deny foreign military intervention.

2-2. Blockade by another name an alternative for China

To circumvent the aforementioned problem, commentators believe that China may use other notions for the purpose of the blockade. In this regard, much of the research points to the “quarantine” policy adopted by the US during the 1962 Cuban missile crisis. The term “quarantine” has not been clearly defined in international law, but the John F. Kennedy administration argued that “quarantine” was intended only to prevent the entry of contrabands (offensive weapons) into Cuba, and so its nature was situation control or peaceful intervention, which is in contrast to a state of war implied by the blockade. From here it can

be argued that since “quarantine” does not necessarily have an explicit military nature, the means available to China are not limited to the PLA's naval and air forces but also include the Chinese Coast Guard (CCG) and even maritime militia. For instance, China could designate a zone and prohibit specific goods or vessels from approaching Taiwan, or force them to divert to a nearby Chinese port for inspection through patrols, interceptions and forced diversions by the PLA Navy and the CCG. Chinese maritime militias could gather in key waterways near Taiwan to block other countries' vessels from reaching the island. The PLA Navy and Air Force could hold military exercises in the waters surrounding Taiwan to intimidate Taiwan and escalate the situation when “quarantine” becomes ineffective.⁵

Although the effect of “quarantine” is similar or equivalent to a blockade, its

4. Rob McLaughlin, “The Law of Armed Conflict, the Law of Naval Warfare, and a PRC Blockade of Taiwan,” Some Chinese scholars have argued that there are still doubts about the applicability of international law on the blockade in the context of civil war. In any case, it is necessary to properly deal with the relationship with third-country vessels during the blockade. See Niu Baocheng, “Exploration on Modern Maritime Blockade Operations,” *National Defense Technology*, Vol. 1, No. 1, 2004, p. 17.

5. Bradley Martin et al., “Implications of a Coercive Quarantine of Taiwan by the People's Republic of China,”; Song Xiaolu, “The Use of Law of War in the Competition of Maritime Supremacy,” *Journal of Naval Engineering University (Comprehensive Edition)*, Vol. 11, No. 2 (June 2014), p. 48. Yann-huei Song, “The Possibility of a PRC Naval Blockade against Taiwan and the Related International Law Issues,” *Issues and Studies*, Vol. 35, No. 4 (April 1996), p. 14. Professor Song believes that in addition to “quarantine,” China may also set up “exclusion zones” and “enclosures of ports” against Taiwan.

functions not so much as a precursor or prelude to war as creating an economic and energy security crisis in Taiwan. It also conveys the message that China has the ability to actually blockade Taiwan so as to influence the perceptions of Taiwanese society. In this regard, “quarantine” is meant to be a form of coercion and is more akin to a “gray zone” conflict that keeps the use of force below the threshold of war. However, “quarantine” is not easy or costless for China. First, because the legal meaning of “quarantine” is still unclear, the PLA Navy’s enforcement of such policy and coercive actions upon third-country vessels may still be interpreted by other countries as a blockade and therefore constitute a state of war. Second, China’s “quarantine” moves to ban goods, ships, aircraft, and personnel from entering Taiwan may also be interpreted by Taiwan as provocative or even war actions, leading to a greater chance of military conflict and international intervention. Third, the intrusion of Chinese maritime militia also gives Taiwan and neighboring countries the legitimacy to intervene with their coast guards; the continuous presence of these law enforcement units in the relevant waters functions to control

the situation and reduce the chance of military conflicts.

3. Trend Observation

3-1. China’s legal warfare an indicator of its Taiwan blockade and other actions

For China, the most favorable scenario for unifying Taiwan is to have a “legitimate course” for all kinds of its actions to minimize Taiwan’s will to resist and intervention of other countries. For this reason, although it is logical that China may simply block Taiwan and ignore possible international law issues, this is not its best policy. The ways in which China claims the legitimacy of its actions, including blockade and “quarantine,” through legal warfare is therefore an indicator of whether it is escalating or accelerating its threats to Taiwan.

China’s legal warfare may manifest itself in two aspects. First, China’s international law discourse deliberately highlights the principles of sovereign equality and non-interference enshrined in Article 2 of the UN Charter and, by extension, asserts that states may

legitimately use force and other acts to preserve their sovereignty and territorial integrity. This interpretation deliberately ignores that the UN Charter also emphasizes peaceful resolutions of disputes and gives the UN the power to intervene in cases of threats to the peace, acts of aggression, and other breaches of the peace. Admittedly, given that China is a permanent member of the United Nations Security Council with enormous influence on third-world countries, it is not likely that UN norms and resolutions will restrict China's actions. However, in order to claim legitimacy of its actions, China will continue to selectively promote the international law discourse in its favor. In his "Global Security Initiative," Xi Jinping denies the security structure formed by the US and European countries without an explicit referencing. He emphasizes "insisting on respecting the sovereignty and territorial integrity of all countries and non-interference in the internal affairs of other countries" and "attaching

importance to the legitimate security concerns of all countries." It's, in essence, an attempt to create an international legal order favorable to China by ostensibly echoing universal values and principles.

Second, China is also attempting to change the legal status of the Taiwan Strait. The more China can convince the international community of its power and rights in the Taiwan Strait, the more it will be in an advantageous position to blockade Taiwan or launch other coercive acts against it. In the June 2022 dispute between the US and China over whether the Taiwan Strait is "international waters," China has so far considered that the Taiwan Strait contains China's internal waters, territorial waters, and exclusive economic zone; and China is entitled to sovereignty, sovereign rights, and jurisdiction in that order. But China may try to extend its claims, for example, by asserting its jurisdiction over the foreign Navy vessels passing the Strait to further strengthen its control thereof.⁶

6. For Xi Jinping's "Global Security Initiative" and related analysis, see "Xi Jinping's Keynote Speech at the Opening Ceremony of the 2022 Annual Meeting of the Boao Forum for Asia (full text)," *Xinhua News Agency*, April 21, 2022, <https://tinyurl.com/2p9dzhah>; "China's 'Global Security Initiative' Not Widely Embraced, Experts Warned about the Consequences," *Central News Agency*, July 19, 2022, <https://tinyurl.com/ff4xjeuh>; "U.S. Scholars: Xi Jinping's 'Global Security Initiative' Maybe An Excuse of Starting A War," *Radio Free Asia*, October 5, 2022, <https://tinyurl.com/2p9986j7>. Regarding the debate about whether the Taiwan Strait is "international waters," see Lynn Kuok, "Narrowing the Differences between China and the US over the Taiwan Strait," *IJSS*, July 13, 2022, <https://tinyurl.com/ymb4z962>.

3-2. Democracies in need to respond to China's possible legal warfare

When exploring the norms of international law related to blockades, Chinese scholars do not merely declare the necessity to comply with international law but also explore the flexible use of international law to achieve their political objectives. For instance, some studies have cited the blockade of Confederate ports by the Union during the American Civil War as evidence of the legality of the blockade in a state of civil war. Some argue that the facts of the enemy's violations of the law in naval warfare should be collected to restrict its maritime operations. Some suggest to use the law to hold major powers (such as the US) accountable so that they cannot aid their allies (such as Taiwan) in the name of neutrality. Some even argue that China can or should use false flags to disguise its actions and ambush enemy ships in naval warfare.⁷

While these studies may have their points, Taiwan and other democracies should be aware of possible "misuses."

Once China decides to blockade or "quarantine" Taiwan, it will invoke the American Civil War and the Cuban missile crisis as precedents for legitimizing its actions. During the blockade, "quarantine," and even naval war, China may also create alleged law-violating facts to confuse the international community. While the public is concerned about China's ability to blockade Taiwan, the possible response of democratic countries such as the US, and Taiwan's resilience and will to resist, it is also imperative to include legal (warfare) issues in different levels of military simulations and prepare countermeasures.

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(The contents and views in the assessments are the personal opinions of the author, and do not represent the position of the Institute for National Defense and Security Research.)

7. Song Xiaolu, "The Use of Law of War in the Competition of Maritime Supremacy," pp. 47-48; Niu Baocheng, "Exploration on Modern Maritime Blockade Operations," *National Defense Technology*, p. 17.



Is the CCP's External Propaganda Effective? Reflections on a Transnational Study

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Topic: Cognitive Warfare, CCP Politics

1. News Highlights

U.S. Company Graphika released a report on February 7, 2023, indicating that pro-China organizations are using AI-generated deepfake news anchors to make propaganda videos and spread pro-China views on social media for the CCP, including Facebook, Twitter, and YouTube. The videos are low quality and receive no more than 300 views, and thus are “spammy” according to the report.¹ As the CCP's external propaganda continues to evolve, its effectiveness also attracts much attention.

In recent years, *China Global Television Network (CGTN)* has put in extra effort to promote the CCP's governance performance. Some comments point out that *CGTN* only cares about quantity rather than quality, and thus China's external propaganda is ineffective.² However, according to a recent transnational study, after watching the propaganda videos by *CGTN*, the percentage of the audience who believe the China Model is superior to American democracy has increased from 16% to 54%, especially among

1. “Pro-Chinese Actors Promote AI-Generated Video Footage of Fictitious People in Online Influence Operation,” *Graphika*, February 7, 2023, <https://reurl.cc/3ODjNV>.

2. “Despite High Ambition, China's Media Influence Operation Is Far from Successful,” *The Diplomat*, May 28, 2023, <https://reurl.cc/338D09>.

respondents in Africa and Latin America.³ The study shows the effectiveness of China's external propaganda is worth re-evaluating.

2. Security Implications

1. People believe in the CCP's governance performance

Past studies on China's external propaganda mainly focus on the CCP's propaganda system and channels⁴ or how they use the latest technology for propaganda.⁵ However, this transnational study explores the audience's response after watching the official propaganda videos of the U.S. and those of the CCP and discovers that the audience changes their perception of the CCP not because they are exposed to a large quantity of the CCP's propaganda but because the content

is somewhat attractive. Specifically, after receiving the propaganda from *CGTN*, the audience lower their perception of the U.S. democracy and the government's performance while show more positive perception of China, with three times as many people acknowledging the CCP's performance compared to the democratic system. The study thus believes that governance performance, especially economic performance, is the most attractive factor in the China Model instead of its values.

This transnational study concludes that the U.S. should take a proactive approach and strengthen the appeal of its political system when communicating with other societies. Given that some respondents are influenced by the CCP's propaganda and believe the CCP can bring economic growth and social stability, this insight is valid and applies to

3. "Chinese State Media Persuades a Global Audience That the 'China Model' is Superior: Evidence From A 19-Country Experiment," *OSF*, 22 August 2022, <https://osf.io/3h2bu/>; This transnational study, jointly published by scholars at Yale University and the University of Groningen, selects random propaganda content from China Global Television Network and U.S. Department of State for global audiences from 19 countries across all 6 continents, including Argentina, Australia, Canada, Chile, Columbia, Egypt, India, Indonesia, Kenya, Mexico, Nigeria, Peru, the Philippines, Saudi Arabia, Singapore, South Africa, Spain, the United Arab Emirates (UAE), and the United Kingdom. The countries in this survey cover a wide range of levels of development from high-income to low-income countries and political systems, including autocracies, semi-democracies, and democracies.

4. Shambaugh, David, "China's Propaganda System: Institutions, Processes and Efficacy," *Critical readings on the communist party of China*, 4 Vols. Set. Brill, (2017), pp. 713-751.

Taiwan as well. In response to the CCP's propaganda war or cognitive warfare, the Taiwanese government has to highlight its governance performance and should not underestimate China's propaganda and its influence just because the general public seems to accept democratic values.

2. The audience is subject to the influence of the CCP's unexpected modern propaganda

When it comes to the significant attitude change after watching China's propaganda videos, the transnational study points out that the audience generally has an unfavorable impression of China, so it's easier for them to develop a positive impression after receiving the CCP's propaganda. In contrast, the U.S., a mature democracy and economy, has a higher starting score and is prone to the ceiling effect.⁶ This may mean that respondents do not necessarily value governance performance over values, but they may be susceptible to the CCP's propaganda due to a lack of understanding and low

expectations of the CCP.

From there, we can see why the main form of the CCP's united front work toward the Taiwanese society is inviting Taiwanese people to China. By showcasing China's rapid economic development, modernization, advanced technology, and affluence, the visit will leave a direct and positive impact on the Taiwanese people, who may develop a favorable attitude toward the CCP. In contrast, it is not easy to present the benefits of the democratic system and values in a material or concrete way, as they are ideologies embedded in everyday life, and this may reduce the effectiveness of democratic countries' effort in promoting themselves.

3. Trend Observation

1. The CCP will continue to promote its system superiority to developing countries

As previously discussed, whether

5. Bolsover, Gillian, and Philip Howard, "Chinese Computational Propaganda: Automation, Algorithms and the Manipulation of Information about Chinese Politics on Twitter and Weibo," *Information, communication & society*, 22(14), (2019), pp. 2063-2080.

6. The ceiling effect refers to the limit of pursuing knowledge. When the limit is reached, the increase of knowledge slows down and stagnates.

people value governance performance over values or they are impressed by the achievement of modernization due to a lack of understanding of China, these both render the CCP's propaganda to have certain advantage in that China's system is described as responding to people's needs, having capable leaders, and enjoying political stability and economic growth. Therefore, the CCP shall promote such campaigns in Third World countries, including many of Taiwan's diplomatic allies. If democratic countries such as the U.S. and Taiwan want to compete with the CCP's propaganda effectively, simply emphasizing the values such as democracy, freedom, and human rights is not enough. Elaborating on how the democratic system can provide long-term political stability and social progress with the least sacrifice and inclusive economic growth shouldn't only be the domestic objectives of democratic countries but a crucial part of external communication.

2. Transnational comparisons may mitigate the influence of the CCP's propaganda

This transnational study asserts that people may put more emphasis on a government's performance. As

this point wasn't valued in the past, it may reflect western scholars' general disbelief in the CCP's political system and the effectiveness of the CCP's propaganda. Meanwhile, this research also acknowledges that the respondents' cognitive change can be temporary, which could be a direct response to stimuli. Either way, the CCP's external propaganda needs to be studied more systematically in the long term.

This transnational study also points out that after watching comparisons of propaganda between China and the U.S., the respondents no longer view China more positively and the U.S. more negatively. In other words, when the respondents are exposed to the CCP's propaganda solely, they are more likely to accept its claims, but in a cross-comparison scenario, the respondents have a chance to compare and analyze. This may mean the comparison can encourage people's reflection and decrease the influence of the CCP propaganda to a certain degree. Thus, democratic countries can use strategic communication such as objective comparisons and show their willingness to reflect and improve, to serve as a counteractive approach and lower the influence of the CCP's



propaganda.

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Is the CCP's External Propaganda Effective? Reflections on a Transnational Study



The Harassment from Chinese High-altitude Balloons and the Way to Respond

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After several days of political struggle, the White House ordered the US military to shoot down a Chinese high-altitude surveillance balloon intruding on its airspace for days on February 5, 2023 and postponed Secretary of State Antony Blinken's visit to China.¹ The military use of high-altitude balloons is not uncommon; the two Koreas and both sides of the Taiwan Strait have used small balloons for political propaganda and sending various goods to the others. In 2020, South Korea's Moon Jae-in government legislated to restrict similar behavior in the private sector, while Kim Yo-jong, the North Korean leader's

sister and vice-department director of the Central Committee of the Workers' Party of Korea, has also angrily accused South Korea of spreading COVID-19 virus with balloons. In September 2021, the US Forces held the Thunder Cloud exercise in Northern Europe, in which the newly established Army 2nd Multi-Domain Task Force (2MDTF) conducted validation of new operational capabilities for high-altitude balloons, sensors, strikes, and long-range precision fires to strengthen the resilience of military reconnaissance and targeting capabilities.² Since the balloons are visible to the naked eye on the ground, the psychological effect on

1. "Press Gaggle by Press Secretary Karine Jean-Pierre En Route Philadelphia, PA," *The White House*, February 3, 2023, <https://reurl.cc/lZ3A4Q>.

2. Joshua Thorne, "US Army Partnerships in the Arctic Circle Result in Success of Exercise 'Thunder Cloud'," *U.S. Army*, September 21, 2021, <https://reurl.cc/ROa8m6>.

the people is obvious and immediate, and how the government responds will also have a direct impact public opinion on government support.

A typical “gray zone” harassing activity

China’s official response to the incident has been mixed. On February 3, Chinese Foreign Ministry spokesperson Mao Ning first said that the Chinese side has verified it and later admitted that a “civilian unmanned airship” had into US airspace due to force majeure factors; the Chinese government would continue to communicate with the US and properly handle this situation.³ After the US shot down the balloon on the 5, the Chinese Ministry of Foreign Affairs accused the US side are “unacceptable and irresponsible,” expressed that “the US made an overreaction by using force

on a strayed unmanned civilian airship. This violates customary international practice.”⁴ On the same day, Chinese Defense Ministry spokesperson Tan Kefei criticized the US’s action was “an obvious overreaction” and expressed “reserve the right to take necessary measures to deal with similar situations.” This response is obviously a cover-up of its aggressive acts and maintains Xi Jinping’s usual “wolf warrior diplomacy” posture.

China has a long history of developing its defense technology industry with mutual integration. In 1982, Deng Xiaoping demanded that China’s defense industry should follow the path of “combining the military and civil, combining peace and war, giving priority to military products, and making the civil support the military,” while Jiang Zemin demanded that the defense industry should carry out the policy

3. Spokesperson Mao Ning said, “The airship is from China. It is a civilian airship used for research, mainly meteorological, purposes. Affected by the Westerlies and with limited self-steering capability, the airship deviated far from its planned course. The Chinese side regrets the unintended entry of the airship into US airspace due to force majeure. The Chinese side will continue communicating with the US side and properly handle this unexpected situation caused by force majeure.” “Foreign Ministry Spokesperson’s Remarks on the Unintended Entry of a Chinese Unmanned Airship into US Airspace Due to Force Majeure,” *Ministry of Foreign Affairs, China*, February 3, 2023, <https://reurl.cc/Ad0z7e>.

4. “Foreign Ministry Spokesperson Mao Ning’s Regular Press Conference on February 6, 2023,” *Chinese Ministry of Foreign Affairs*, February 6, 2023, <https://reurl.cc/5M4Lr6>.

of “combining the military and civil, combining military efforts with civilian support, investing on both military and civilian industries, and enhancing the capabilities of independent innovation.” Hu Jintao also asked the defense technology industry to “insist on military and civilian combination, combining military efforts with civilian support, promote the positive interaction between military and civilian, and development with proper coordination.”⁵ In 2015, Xi Jinping converged the principles into a single “military-civil fusion” and elevated it to a national strategic level. During the “military-civil fusion” phase of its military technology development, China emphasizes that its balloons are used for meteorological research. However, since the acquired meteorological information is also important intelligence in wartime; its nature and purpose will depend on how the operators use it.

According to the Chinese PLA’s academic institutions experts, the military use of high-altitude balloons includes psychological warfare propaganda, route blocking, deception interference, reconnaissance and monitoring.⁶ In recent years, China has often harassed neighboring countries under the guise of civilian activities. Since these were malicious “gray zone” activities with military effects, no wonder they had drawn many accusations from outside. Under the Chinese propaganda convention, China would mock the weakness of US air defense that allowed foreign aircraft to enter its territories if the balloon succeeded; if it failed, China would use civilian and experimental flights as a cover-up to ridicule the US for making a big deal out of the situation, which in any case is material for cognitive, political, or propaganda warfare. China could have released the test flight information if this

5. “Answers to Questions on Promoting Military-civilian Integration and Military Development in the Civilian Capacity, by Yu Liegui, Deputy Director of the National Defense Science and Industry Commission,” *Central People’s Government of the People’s Republic of China*, June 27, 2007, http://www.gov.cn/zwhd/2007-06/27/content_664157.htm.

6. Yang Jianjun, Liao Qiuyan, Wang Weixing, and Zhang, Wei, “The use of airborne balloons in military confrontations,” *Electronic Warfare of Navy Vessels*, vol. 45, no. 2 (April 2022), pp. 28-31; “Military Balloons: Floating among the battlefields,” *People’s Daily Online*, February. 11, 2022, <http://military.people.com.cn/BIG5/n1/2022/0211/c1011-32350170.html>.

high-altitude balloon was in the testing or verification stage. The Chinese Ministry of Foreign Affairs defined the balloon as a civilian, scientific research “unmanned airship” only to play down the sensitivity of military applications. Established in 1961, the Special Aircraft Research Institute has been developing various types of surface and floating aircraft (such as tethered airships, tropospheric airships, and stratospheric airships); its achievements manifest China’s emphasis on technology sharing between military and civilian sectors by adhering to the “military development in the civilian capacity” and “military-civilian integration” principles.

Available means of military response

According to the definition of Chinese scholars, high-altitude balloons refer to unpowered floating vehicles that fly in near space. Near-space aerostats is

flying at an altitude from 20 kilometers to 100 kilometers.⁷ Using high-altitude balloons against hostile countries is a low cost but very effective means. When a high-altitude “civilian” aircraft entered the airspace of another country, it is difficult to shoot it down with ground-based air defense systems such as anti-aircraft guns or close-in weapons; since the spheres are made of composite materials carrying unknown payloads, the possible damage to the property of the people on the ground is hardly predictable. Due to the uncertainties, the balloons have become a national security issue for all countries. In 1997 and 2017, two balloon events of varying duration took place somewhere in China, causing some disruption to electronic communications. Some regions in China, such as Harbin, issued a notice in May 2020 banning the release of hydrogen balloons in all city districts.⁸

According to the US DOD instruction 4540.01 (2015), the U.S. military aircraft

7. Yang Jian-jun, Liao Qiu-yan, Wang Wei-xing, and Zhang, Wei, “Application of Air Floating Ball to Military Confrontation,” *Shipboard Electronic Countermeasure*, Vol. 45, No. 2 (April 2022), pp. 28-31; Liao Jun, Yuan Junjie, Jiang Yi, Yang Zechuan, Li Jun, Lu Zhiyong, Wu Chunhui, Wang Ning “Motion Characteristics of Zero-pressure Balloon in Ascending Process,” *Spacecraft Recovery and Remote Sensing*, Vol. 40, No. 1 (February 2019), pp. 11-19.

8. “Harbin Bans Hydrogen Balloons in the City,” *People’s Daily Online*, May 26, 2020, <http://hlj.people.com.cn/n2/2020/0526/c220024-34043832.html>.

and missile and projectile firings operate with due regard for the safety of all air and surface traffic and must comply with “reasonable warning procedures”. The purpose of the pre-attack warning is to preclude inadvertent, uncontrollable, or other unavoidable factors.⁹ The US Air Force dispatched advanced F-22s to carry out the shoot-down mission; in the future, measures such as directed-energy weapons can be considered.

Although China claimed that its high-altitude unmanned airship was “in civilian nature and used for meteorological and other scientific research,” it did not release the flight paths or areas before launching. When the airship entered other country’s airspace was detected, China irresponsibly claimed that it was civilian and expressed its “strong dissatisfaction and protest” for the US shooting it down to maintain its sovereignty and ensure the safety of civilians.¹⁰ China’s reaction reflected its failure to take the initiative to explain to

the affected countries before the incident; the Chinese Foreign Ministry only accused the US of failing to comply with international practice but did not mention whether it had fulfilled its international responsibilities. This gives a new meaning to Xi Jinping’s “new type of international relations” and may influence the future progress of US-China relations.

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(The contents and views in the assessments are the personal opinions of the author, and do not represent the position of the Institute for National Defense and Security Research.)

9. Yang Chang-Rong, “Airspace Intrusion with Drones and ‘the First Strike’,” *National Defense and Security Research Biweekly*, Vol. 65, No. 2022, pp. 5-10, <https://reurl.cc/lZ3lrq>; Tsai Chin-Tsang, “Airspace Intrusion with Drones and ‘the First Strike,’” *Air Force Bimonthly Journal*, Vol. 622 (2011), pp. 130-144, <https://reurl.cc/NGznd9>.

10. “Senior Defense Official and Senior Military Official Hold an Off-Camera, On-Background Press Briefing Update on the High-Altitude Surveillance Balloon,” *U.S. Department of Defense*, February 4, 2023, <https://reurl.cc/91dbmx>; “Statement From Secretary of Defense Lloyd J. Austin III,” *U.S. Department of Defense*, February 4, 2023, <https://reurl.cc/vmyKNN>.



The Harassment from Chinese High-altitude Balloons and the Way to Respond



Observing US-China “Near space” Competition through the Spy Balloon Incident

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Topics: High-altitude balloon, stratosphere, near space

1. How high-altitude balloons intrude the US airspace

The discovery of Chinese high-altitude balloons in US airspace has further escalated tensions between the two countries. US intelligence officials believe that the Chinese high-altitude balloons are part of an extensive surveillance program conducted by the PLA, which has carried out at least 20 missions in recent years. There were similar sightings in Taiwan and Japan, but it is not clear if they are related to the balloons found in the US. It's been reported that there were two occurrences during the Biden administration; the most recent was in February 2022, when a similar high-altitude balloon approached the US Pacific Missile Range on Kauai, Hawaii. There were also 2 to 3 times during the Trump

administration period.

The North American Aerospace Defense Command (NORAD) began tracking the balloon as it approached US airspace. It passed north of the Aleutian Islands on January 28 and moved over Alaska, then into Canadian airspace. On January 21, the balloon re-entered US airspace from Idaho and passed through Montana on February 1 before approaching St. Louis on February 3. The balloon's flight path was judged to have passed through important US military facilities, including the Minuteman Ballistic Missile Launch Base in Montana. A report pointed out that the balloon was launched from Hainan Island and was originally intended to carry out reconnaissance missions over Guam; for unknown reasons, it deviated from the

route before drifting north to Alaska.¹

US officials said the US had taken actions to prevent the balloon from obtaining sensitive information while it was over Malmstrom Air Force Base in Montana. Mamstroth is home to the US Air Force’s 341st Missile Wing and the US Air Force Global Strike Command (AFGSC), where the Minuteman III intercontinental ballistic missiles are deployed. With 150 underground silos, Mamstroth is one of three US ballistic missile bases. Montana Senator Steve Daines said the balloon was used to conduct intelligence acquisition missions on US ballistic missile bases.²

On February 14, 2022, the US Pacific Air Forces sent F-22 fighters on a rapid response mission to Kauai, the northern tip of the Hawaiian Islands. A suspected Chinese balloon invasion was discovered, and civilian footage showed the balloon

appeared to be in a stationary state. The island houses rocket test sites of the US Department of Energy and the Sandia National Laboratories, and the western end has an even larger Pacific Missile Range, the US military’s most sensitive and advanced test site. Equipment including missile defense radar, Patriot missiles, and SM-6 missiles are tested there, which is bound to attract a high level of interest from the rivals of the US.³

2. Missions of the high-altitude balloons

The US had sent U-2 reconnaissance aircraft and RC-135 electronic reconnaissance aircraft to monitor the balloon. After President Joe Biden ordered the balloon shot down, two F-22s from the US Air Force 1st Wing neutralized the balloon at 2 pm local time on February 4 off the North Carolina coast. The F-22

1. “U.S. Tracked China Spy Balloon from Launch on Hainan Island Along Unusual Path,” *Washington Post*, February 14, 2023, <https://www.washingtonpost.com/national-security/2023/02/14/china-spy-balloon-path-tracking-weather/>.

2. “US Claims Suspected Chinese Spy Balloons Appeared in Sensitive Locations, and US Media Reports were Challenged with Two Major Suspicions,” *HK01.com*, February 3, 2023, https://www.hk01.com/article/863438?utm_source=01articlecopy=referral.

3. “F-22s Scrambled To Investigate A Mysterious High-Altitude Balloon Off The Coast Of Hawaii (Updated),” *the Drive*, February 18, 2022, <https://www.thedrive.com/the-war-zone/44352/f-22s-scrambled-to-investigate-suspicious-high-altitude-balloon-off-the-coast-of-hawaii>.

was flying at Mach 1.3 when it fired an AIM-9X missile 5 miles from the balloon to shoot it down. The F-22 pilot reported that the target was at 64,000 feet, and the F-22 fired the missile at 58,000 feet.⁴ Another two F-15Cs with Sniper targeting pods filmed the shooting process and marked the exact location of the balloons falling into the sea to facilitate salvage. In addition, another Navy P-8 patrol aircraft was close by to monitor the situation. The impact location needs to be far enough from shore to avoid endangering civilians and property on the ground and to ensure that the debris is scattered within US territorial waters before the balloon drifts more than 12 miles off the coast to enter international waters.⁵

Pentagon officials explained that the key to the shoot-down decision was the US intention to retrieve and analyze it and therefore understand its capability. The recovery operation would be very

different if the balloon were brought down in Alaskan waters. The Bering Strait is 13,000 feet deep, the winter temperatures are below freezing, and there is ice cover in northern Alaska, which poses additional risks to the recovery mission. However, the Department of Defense was still criticized by some Congress members for its slow decisions. The US House passed a 419-0 resolution condemning China for violating US sovereignty and requesting that the Biden Administration conduct a complete briefing to assess what data might have been collected and transmitted by the Chinese balloon as it passed through US airspace.⁶

The US is convinced that the balloon is part of a large surveillance program that China has been implementing for years; it has notified NATO and other allies since the US believes the Chinese surveillance program is active worldwide.

⁷ State Department officials also said the

4. “China Balloon: Many Questions about Suspected Spy in The Sky,” *AP news*, February 5, 2023, <https://reurl.cc/x10LZL>.

5. “The Shooting Down Of China’s Spy Balloon In Moment-By-Moment Audio,” *The Drive*, February 7, 2023, <https://www.thedrive.com/the-war-zone/the-operation-to-down-chinas-spy-balloon-in-moment-by-moment-audio>.

6. “Chinese Balloon Wasn’t Downed Over Alaska Due to ‘Dangerous’ Recovery,” *Defense News*, February 10, 2023, <https://www.defensenews.com/congress/2023/02/09/chinese-balloon-wasnt-downed-over-alaska-due-to-dangerous-recovery/>.

7. “China Conducted Spy Balloon Program for Years, Pentagon Says,” *CAISRNET*, February 9, 2023, <https://www.c4isrnet.com/news/pentagon-congress/2023/02/08/china-has-conducted-spy-balloon-program-for-years-pentagon-says>.

balloon carries an array that could be used to collect meteorological and geolocation information, and it's equipped with a large solar cell array sufficient to power multiple active intelligence sensors.

Experts say such high-altitude balloons can provide advantages over satellites and drones with enhanced intelligence, surveillance, and detection capabilities. High-altitude balloons can fly closer to the ground than satellites and are capable of intercepting communications or electronic signals, which is impossible with satellites. The balloons can also take optical or infrared images or collect signal information. High-altitude balloons can provide more persistent and unpredictable coverage in the target area, while satellites are orbiting along a known trajectory that can be calculated. Balloons or airships can move in different directions taking advantage of air currents or automatic control systems, and they can also loiter over a fixed area for long periods.⁸

China insisted that the balloon was a civilian one that lost its course and condemned the US for shooting it

down, but the role of the balloon remains unexplained. Chinese Defense Minister Wei Fenghe also declined a request to speak with US Defense Secretary Lloyd Austin after the balloon was shot down. In addition to delaying Secretary of State Blinken's trip to China, the US announced sanctions against six related companies, while China also imposed retaliatory sanctions on US companies. The US has recently been repeatedly reported to have shot down unidentified flying objects as the subsequent impact of the balloon incident on the US-China relationship is still unpredictable.

3. Observing the US-China near space competition through the high-altitude balloon incident

This Chinese high-altitude balloon, flying at about 60,000 to 65,000 feet (18 to 20 km), should be a stratospheric balloon or aerostat flying at the altitude of “Near Space”. Near Space is the area between the altitude where traditional military and civilian air-breathing aircraft operate and the orbit of spacecraft or

8. “Why Stratospheric Balloons Are Used in Era of Space-Based Intelligence,” *CAISRNET*, February 6, 2023, <https://www.c4isrnet.com/battlefield-tech/space/2023/02/06/how-stratospheric-balloons-could-complement-space-based-intelligence/>.

satellites. It generally refers to the space between 20 and 100 km from the ground, including most of the stratosphere, the entire mesosphere, and part of the ionosphere. Except for rockets and experimental high-speed aircraft that traverse the atmosphere, humans have rarely ventured into Near Space in the past. With the development of technology, more countries are developing Near Space technology and considering that space as a new “high frontier” for national security.

Conventional aircraft fly in the troposphere below 65,000 feet (20 km). International airliners, such as Boeing 747 and other large passenger aircraft, fly at 40,000 feet; fighter jets fly at a maximum altitude of about 55,000 to 60,000 feet. The retired Concorde airliner cruised at 60,000 feet, while the SR-71 “Black Bird” reconnaissance aircraft can reach 80,000 feet (24 km). The denser atmosphere of the troposphere causes higher drag, making it difficult for conventional aircraft to fly at hypersonic speeds above Mach 5.

In space more than 100 km from the surface, the air is extremely thin; spacecraft or satellites cannot fly there

with aerodynamic force but rely on their own power from oxygen carried onboard. Although the air in near space is thin, aircraft is still controllable by aerodynamics; and there is a stable atmospheric environment with less drag. Chinese articles pointed out that Near Space can be used to expand the scope and depth of aerospace battlefields for military applications, which can form a seamless “air-space” warfare capability to support a vital strategic position.

The development and deployment of various types of aircraft and platforms in the Near Space arena will be a new area of power competition in the future. Near Space aircraft can be used in early warning, surveillance, communications relay, electronic warfare, navigation, and positioning to achieve effective interconnection and integration of air, space, and ground information. In addition, since Near Space aircraft can easily perform long-duration hypersonic flights, they are becoming the new favorite for long-range, rapid-strike weapons, and the pace of future war will also be significantly accelerated accordingly.⁹

With the development of new sensors

9. “Near Space: A New Military Front,” *Xinhua Net*, March 31, 2022, http://www.news.cn/globe/2022-03/31/c_1310523344.htm.

and materials, military applications of Near Space technology have become possible. In the intelligence, surveillance, reconnaissance, communications relay, early warning, navigation, and electronic warfare fields, Near space platforms have more advantages over air and space platforms.

Recent international developments of Near Space vehicles are mostly in the aerostat category, in which the US has started development earlier, and its technology is more advanced. The major US projects include high-altitude airships from the Missile Defense Agency for surveillance and communication relay, the “Near Space mobile vehicle” developed by the Air Force, and the inflatable, single-use high-altitude balloons and solar-powered drones by Johns Hopkins University.

The stratospheric aerostats have ultra-long endurance, short deployment cycles, lower cost than satellites, and broader coverage than ground stations. However, their development still faces technical challenges such as lightweight structure, RFC energy storage, thermal management, low-altitude operation, and system reliability.

4. China shows high interest in the Near Space applications

Although China claims that the balloons are only for meteorological research, internal documents show a significant increase in interest in the military applications of high-altitude balloons and similar devices, and it’s also looking to close the gap with other countries. An April 2022 article pointed out that one of the military uses of high-altitude balloons is to test enemy air defense systems. The article argued that balloons could be deployed to induce activation of the enemy air defense systems, which allows for easier electronic reconnaissance and assessment of the enemy’s detection and response capabilities. In addition, Chinese experts also believe that the balloons can collect high-altitude atmospheric data useful to the Chinese missile program or perform high-resolution photography to supplement the information acquired by satellites. The experts also believe that Near Space vehicles are more versatile and suitable for long-term observation for disaster warning, environmental research, wireless networks, and aerial reconnaissance than satellites.¹⁰

10. “China’s Balloons Are Part of A Strategy to Beat The US On A New Battlefield: ‘Near Space,’” *CNN*, February 10, 2023, <https://edition.cnn.com/2023/02/09/china/china-balloon-near-space-development-intl-hnk/index.html>.

A 2018 article in the *PLA Daily* pointed out that thanks to the rapid development of technology, information confrontation is no longer limited to land, sea, and low-altitude airspace; Near Space has become a new battlefield for modern warfare, and Near Space aircraft will play a key role in the future joint warfare from the outer space to the atmosphere.

The Institute of Aerospace Information, a Chinese Academy of Sciences division, is the unit most interested in high-altitude balloons. Its research articles are mostly scientific, including Near Space exploration and aerodynamics of balloons or aerostats, but there are also reports related to their military deployments and applications. In September 2022, the Institute for Aerospace Information was awarded a contract to develop a stratospheric balloon platform and later completed a balloon that could rise to 98,000 feet (30 kilometers) with a 1.2-ton payload. However, the Institute claims the research was not given a military mission.¹¹

In more than 1,000 Near Space

papers published by the Chinese military and civilians, most focused on near-space aircraft. In addition to procuring high-altitude balloons and related technologies from other countries, China established the Aerostat System Research and Development Center under the Institute of Aerospace Information to develop vehicles such as stratospheric test airships, tethered balloons, and high-altitude balloons that can rise to 40 kilometers. Many Chinese universities also set foot on the Near Space development. For example, Beihang University has developed an unmanned airship that flies at 65,000 feet, Shanghai Jiaotong University has a Near Space Innovation R&D Center, Zhejiang University has a Near Space aircraft Research Center, and the University of Chinese Academy of Sciences has a National Center for Space Science. Many other universities also have similar research projects and facilities.

Other Near Space aircraft include long-loitering, hypersonic, and suborbital aircraft. China’s Xingkong-2 wave-riding hypersonic aircraft is also a Near

11. “PLA Paper Called for the Development of More ‘Spy Balloon, Contradicting with Chinese Officials’ ‘Meteorological Research’ Claim,” *Up Media*, February 7, 2023, https://www.upmedia.mg/news_info.php?Type=3=165323.



Space vehicle. The future development of China’s Near Space sector and the competition among superpowers must be closely watched as the “Chinese spy balloon” incident marks the beginning of the confrontation between the US and China in the Near Space arena.

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