



Secure Taiwan Monthly

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May 2025

STA | 安全臺灣學會
SECURE TAIWAN ASSOCIATE

RCDA Research Project on
China's Defense Affairs
中國防務研究計畫

Secure Taiwan Monthly: May 2025

Secure Taiwan Monthly is written by members of Research Project on China's Defense Affairs (RCDA) at the Security Taiwan Associate (STA). It analyzes key military developments in China and the Indo-Pacific region relevant to Taiwan's security over the past month, available in both Traditional Chinese and English versions.

STA is a nonprofit public organization. Its mission is to unite the intellectual resources of Taiwan's academic community with the energy of civil society, focusing on security issues that are crucial to Taiwan's survival and development.

The English name, Secure Taiwan "Associate," rather than the typical term "association," highlights that we are a group of partners, rather than just being an organization.

RCDA conducts research on Chinese military affairs and issues related to People's Liberation Army's aggression against Taiwan, while engaging in exchanges with experts around the globe.

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I . Great Power Competition: Sustained U.S.-China Strategic Confrontation, with PLA Activity Shifting Focus to the Waters Between the First and Second Island Chains

This monthly report primarily analyzes major power confrontations, PLA activities around the Taiwan Strait, and gray-zone harassment incidents that occurred in May. Given that on June 7 the PLA Navy's Shandong carrier transited the Bashi Channel toward the Second Island Chain and approached the Liaoning carrier group, this report also includes a preliminary analysis of the Shandong's operations near the Second Island Chain.

1. Situation

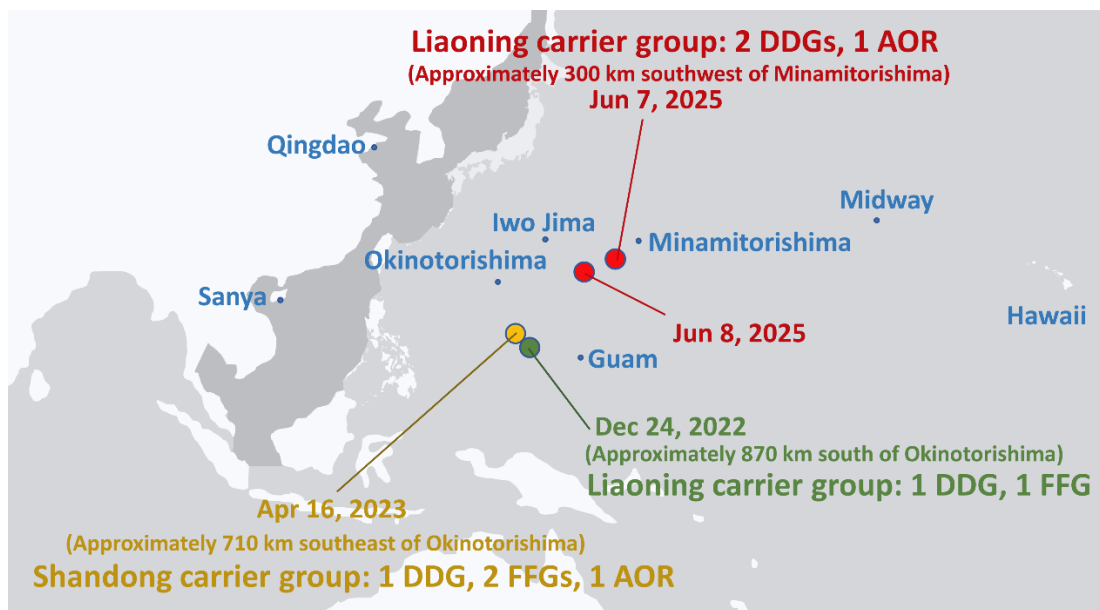
Since May of this year, PLA naval forces have continuously advanced through the Miyako and Bashi Straits to conduct exercises in the Western Pacific along the eastern side of the First Island Chain. At its peak, [approximately 70 PLA vessels](#) operated in the waters surrounding the First Island Chain. Currently, in addition to ongoing annual training exercises, the PLA maintains a carrier strike group centered on the Liaoning, which is accompanied by an escort fleet composed of other PLA ships operating in the area, conducting maritime maneuvers alongside the Liaoning.

In late May, the Liaoning departed its Qingdao base and transited through the Yellow Sea, East China Sea, Western Pacific, and Philippine Sea, advancing northeastward to a position approximately 300 kilometers southwest of Minamitorishima on the eastern side of the Second Island Chain. This marks the first time the Liaoning has operated beyond the Second Island Chain.

During the Liaoning's training deployment, its task force initially consisted of a two-ship formation with the [Type 055 Nanchang](#) as it transited the Miyako Strait. By June 8, upon returning to the western side of the Second Island Chain, the formation had expanded to [eight ships](#). This indicates that PLA naval forces operating in the Western

Pacific leverage the Liaoning's maneuvers to conduct various tactical exercises related to carrier strike group escort, maritime combat, and area denial operations. The primary hypothetical adversary in these drills is undoubtedly U.S. carrier strike groups.

Farthest Operational Positions of Chinese Aircraft Carrier Task Forces



On June 7, the [Shandong carrier strike group](#) transited beyond the First Island Chain into the Western Pacific. By June 9, as it approached the Second Island Chain, its operational radius overlapped with that of the Liaoning task force, which is positioned near the center of the Second Island Chain to the east. Together, these dual carrier strike groups effectively control the waters between the First and Second Island Chains, demonstrating the PLA Navy's growing capability for maritime area denial against U.S. forces.

Since around May 20, both the U.S. and China have deployed two carrier strike groups to conduct exercises near the First Island Chain. In late May, the PLA Navy's Liaoning departed Qingdao and transited the Miyako Strait to conduct training in the Western Pacific. Following Liaoning's departure, the U.S. dispatched the America Amphibious Ready Group, based in Sasebo, to monitor the Liaoning's southward transit through the East China Sea. After the Liaoning passed through the Miyako Strait, the America ARG remained

stationed south of Okinawa. Meanwhile, the George Washington carrier strike group, homeported in Yokosuka, left its base and moved south to the waters east of Okinawa, replacing the America ARG in monitoring the Liaoning task force. Separately, on the eve of May 20, the U.S. Lincoln carrier strike group transited the Malacca Strait into the southern South China Sea. At the same time, the PLA Navy's Shandong conducted joint exercises with PLA naval and air forces in the northern South China Sea, while the Liaoning operated east of the Bashi Channel. The Lincoln's northbound path was impeded, forcing it to remain in the southern South China Sea.

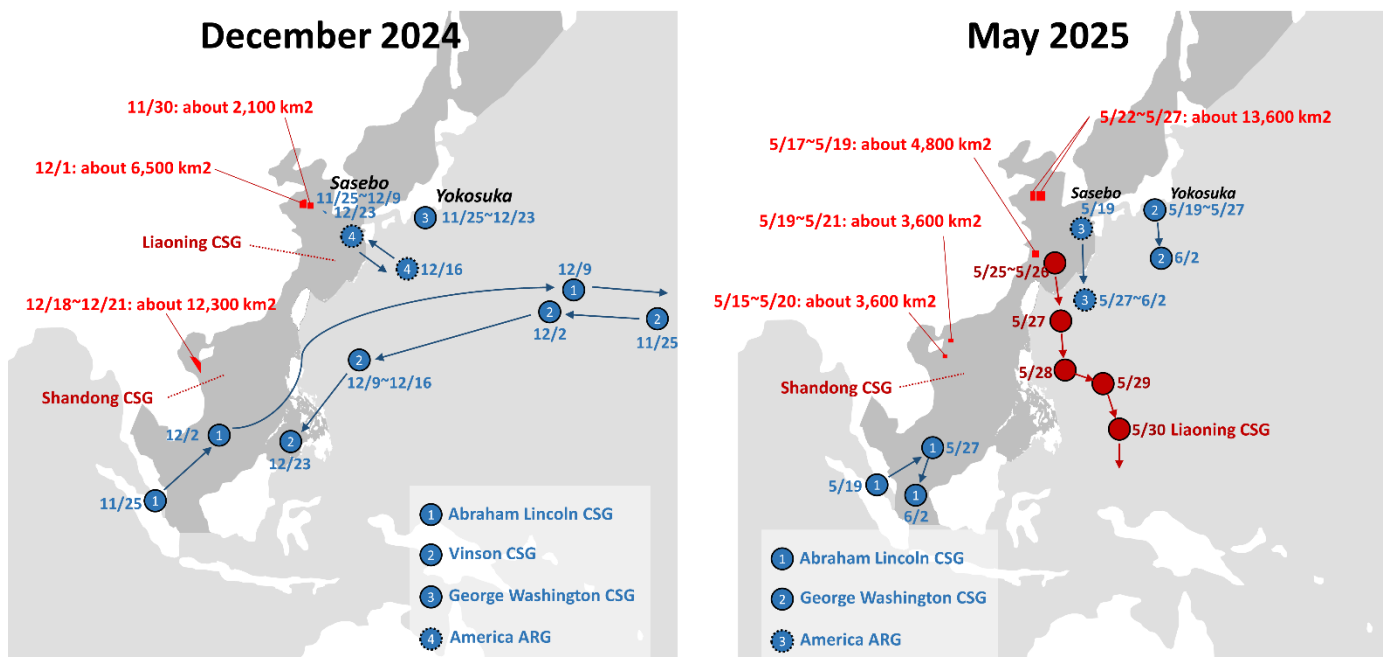
Operational Areas of the Liaoning and Shandong Dual Carrier Strike Groups



Compared to December last year, when the PLA Navy also deployed a large number of vessels around the First Island Chain for various exercises, the scale of U.S. forces deployed at that time was significantly greater. In December, the Liaoning operated in the East China Sea and did not advance beyond the First Island Chain, while the Shandong operated in the South China Sea. However, the U.S. concentrated three carrier strike groups—Lincoln, Carl Vinson, and George Washington—along with the America Amphibious Ready

Group around the First Island Chain. Both the Lincoln and Carl Vinson strike groups also transited into the South China Sea. Overall, in December, U.S. forces maintained a clear numerical and operational advantage over PLA naval assets in the South China Sea and Western Pacific.

U.S.-China Carrier Strike Group Activities in December 2024 and May 2025



Since May, in addition to dispatching the Liaoning carrier strike group through the Miyako Strait into the Western Pacific for training, the PLA Navy conducted its first-ever transit beyond the Second Island Chain to operate in waters east of it. Although the Shandong's operational area largely mirrored that of December last year, the PLA also deployed two H-6 bombers on Yongxing Island in the Paracels, whose strike range covers Guam. Moreover, on June 7, the Shandong crossed the First Island Chain and by June 9 maneuvered to the western side of the Second Island Chain, where it joined the Liaoning to form a dual carrier strike group, demonstrating enhanced maritime area denial capabilities against U.S. forces.

2. Implication

In summary, following the initiation of the tariff war by the Trump

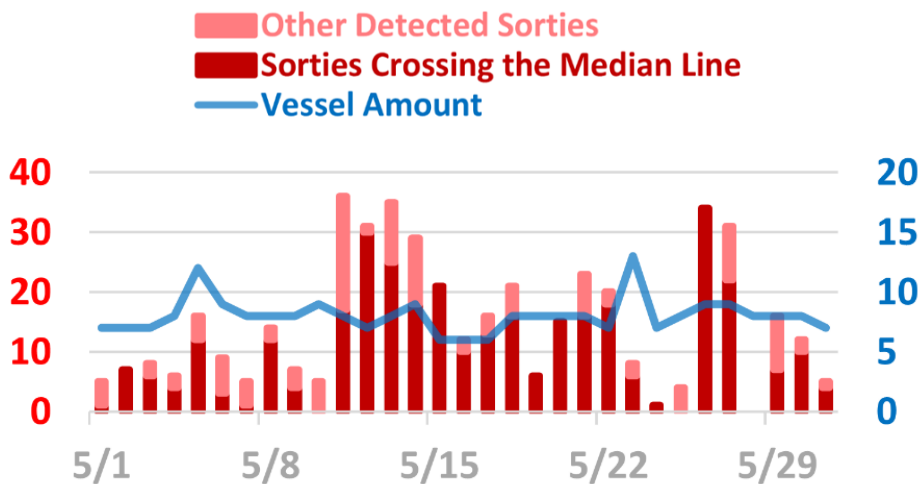
administration, U.S.-China relations entered a phase of comprehensive strategic confrontation. At the West Point commencement speech, President Trump emphasized that if the United States or its allies are threatened or attacked, the U.S. military will respond with overwhelming and devastating force to [crush America's adversaries](#). U.S. Secretary of State Rubio, speaking before the Senate Foreign Relations and Appropriations Committees, stressed that deterring China's potential invasion of Taiwan requires making the costs of such aggression exceed its value, beginning with [strengthening Taiwan's self-defense capabilities](#). Meanwhile, U.S. Secretary of Defense Hegseth, speaking at the Singapore Shangri-La Dialogue, clearly stated that the United States will not allow its allies and partners to be [subordinated and intimidated](#) by China. These public statements by the President, Secretary of State, and Secretary of Defense collectively reflect the Trump administration's policy stance on engaging China in a comprehensive strategic military confrontation.

II. PLA's Monthly Trend of Harassment Against Taiwan: Slowing Growth in PLA Air and Naval Activity Around the Taiwan Strait

©Source: ROC (Taiwan) Ministry of National Defense Press Release

1. Trends

In May 2025, a total of 249 Chinese naval vessels and 458 military aircraft sorties were detected, including 339 aircraft sorties crossing the Taiwan Strait median line. The data is provided in the chart below.



1.1 Comparison of This Month with Previous Mays

Although the PLA did not announce large-scale military exercises encircling Taiwan following May 20, its pre-positioned forces continued to carry out planned training and combat readiness activities. Coinciding with the PLA's annual peak period for maritime exercises, PLA naval and air assets maintained continuous operations in the air and sea domains around the First Island Chain, with some naval forces pushing further forward toward the Second Island Chain.

Since May, the growth trend of PLA naval and air activity around the Taiwan Strait has slowed. Compared to the same period last year, the number of military aircraft sorties detected has even declined. According to data released by the Ministry of National Defense, 458 PLA aircraft sorties were detected operating near the Taiwan Strait in May 2025, compared to 469 in May 2024—a decrease of 11 aircraft,

Secure Taiwan Monthly: May 2025

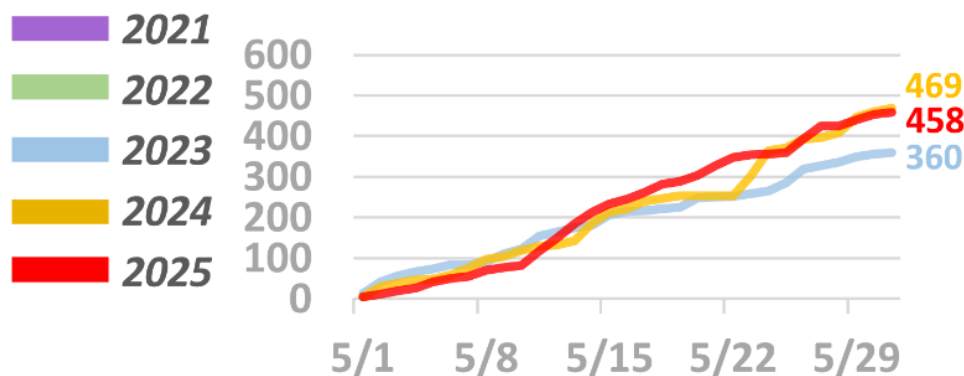
or 2.3%. In contrast, May 2023 saw 360 detected aircraft sorties,



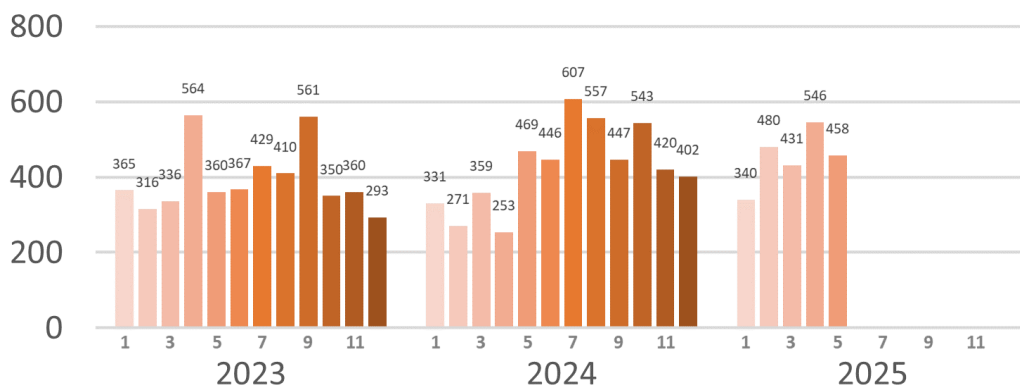
meaning that activity increased by 30% between 2023 and 2024. Therefore, relative to the substantial growth seen in previous years, the growth in PLA air activity around Taiwan in May 2025 has clearly decelerated.

It is important to note that from January to April of this year, PLA aircraft activity around Taiwan still showed a significant increase compared to the same period last year. In particular, PLA aircraft sorties in April 2025 reached 546, compared to 253 in April 2024, representing a year-on-year increase of 116%. However, in May 2025, the number of PLA aircraft detected decreased by 2% compared to May 2024.

Total PLA Aircraft Sorties Detected in May



Monthly PLA Aircraft Sorties Detected



The trend in PLA naval vessel activity shows a similar pattern. In May 2025, 249 PLA naval vessels were detected operating near

Secure Taiwan Monthly: May 2025

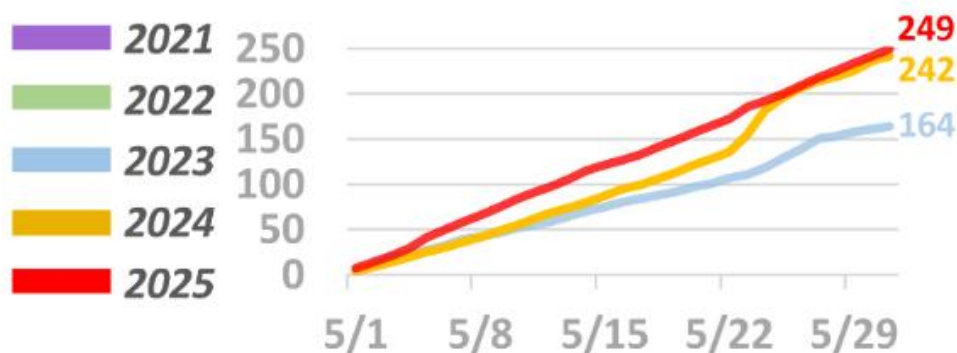
Taiwan, compared to 242 in May 2024—a 3% increase. However, in



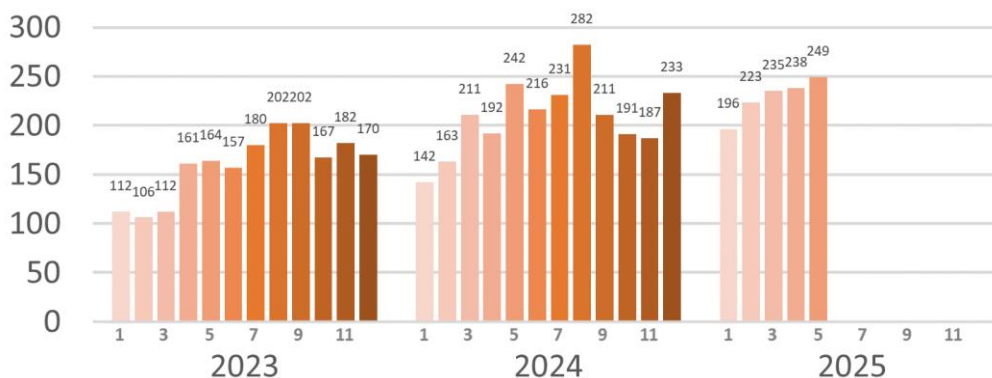
May 2023, only 164 vessels were detected, meaning that the 2024 figure represented a 48% increase over 2023. Thus, PLA naval activity around Taiwan in May 2025 has remained largely consistent with last year's levels, showing no significant increase. The slowdown in PLA naval vessel activity around the Taiwan Strait aligns with the deceleration in the growth of PLA aircraft operations.

Additionally, from January to April this year, the number of PLA naval vessel around the Taiwan Strait increased significantly compared to the same period last year, mirroring the upward trend in PLA aircraft sorties. In particular, 238 PLA vessels were detected in April 2025, a 24% increase over the 192 vessels detected in April 2024—substantially higher than the 3% growth seen in May 2025.

Number of PLA Vessels in April



Monthly Number of PLA Vessels Near Taiwan



Although the total number of detected PLA aircraft sorties operating around Taiwan decreased in May 2025, the number of sorties crossing the Taiwan Strait median line and approaching

Secure Taiwan Monthly: May 2025

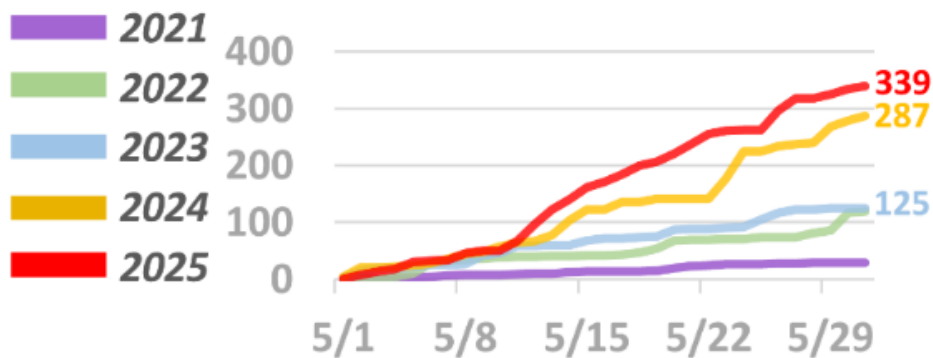
Taiwan's airspace at 24 nautical miles increased to 339, compared



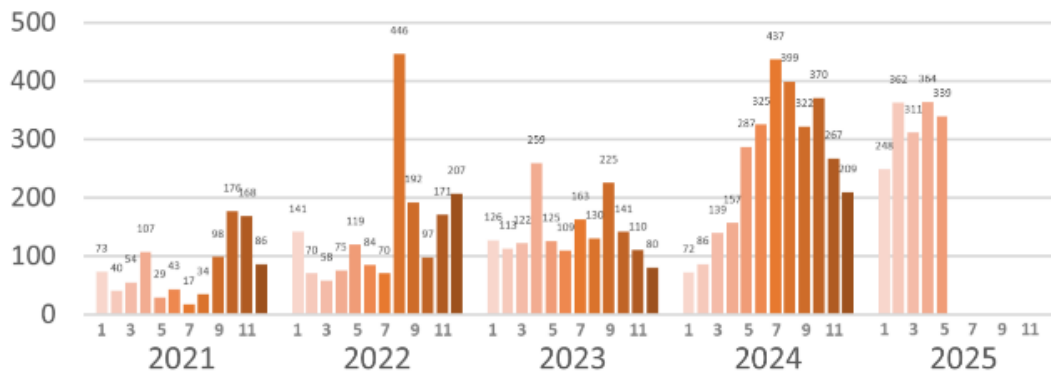
to 287 in May 2024—an 18% increase. By contrast, in May 2023, only 125 such sorties were recorded, representing a 130% increase from 2023 to 2024. These figures indicate a significant slowdown in the growth of PLA air activity near Taiwan in May 2025, consistent with the overall deceleration observed in PLA air and naval operations around the Taiwan Strait.

Similarly, from January to April this year, the number of PLA aircraft sorties crossing the Taiwan Strait median line and intruding into Taiwan's adjacent airspace increased significantly compared to the same period last year. In April 2025, 364 such sorties were detected, up from 157 in April 2024—a 132% increase. March 2025 saw 311 sorties compared to 139 in March 2024, a 124% increase. However, the growth rate slowed considerably in May 2025, with an 18% increase.

PLA Aircraft Sorties Crossing the Median Line in May



Monthly PLA Aircraft Sorties Crossing the Median Line

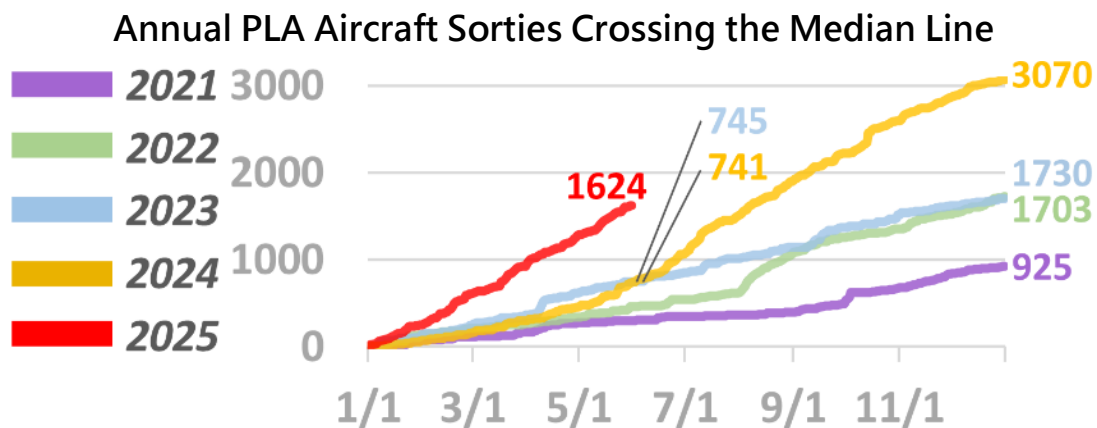


1.2 Annual Trend Comparison

Regarding military aircraft, the total number of sorties crossing the Taiwan Strait median line has accumulated to 1,624—the highest on record—approximately 2.17 times the 745 sorties recorded in 2023. However, the total number of detected aircraft sorties reached 2,255, only 1.16 times the 1,941 sorties recorded in 2023. As for naval vessels, the total number has accumulated to 1,141—the highest on record—about 1.2 times the 950 vessels detected during the same period in 2024.

Notably, the cumulative number of PLA aircraft crossing the Taiwan Strait median line in April 2025 was already twice that of April 2023. Therefore, the May 2025 figure—2.17 times that of May 2023—represents a further 17% increase over April's cumulative total.

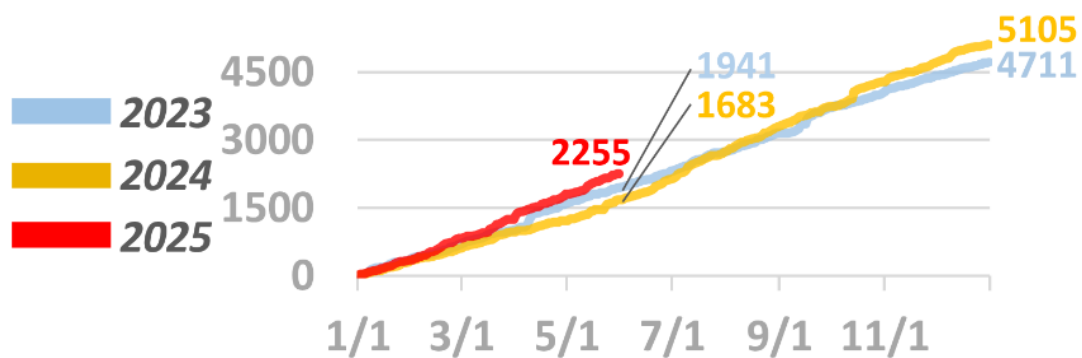
A closer look at the monthly data shows that the total detected PLA aircraft sorties, sorties crossing the Taiwan Strait median line, and the number of PLA naval vessels operating near Taiwan in May 2025 are comparable to the peak military exercise period from June to October 2024. Notably, the cumulative number of naval vessels detected in May 2025—249—is the second highest since 2023, surpassed only by August 2024's peak of 282 vessels.



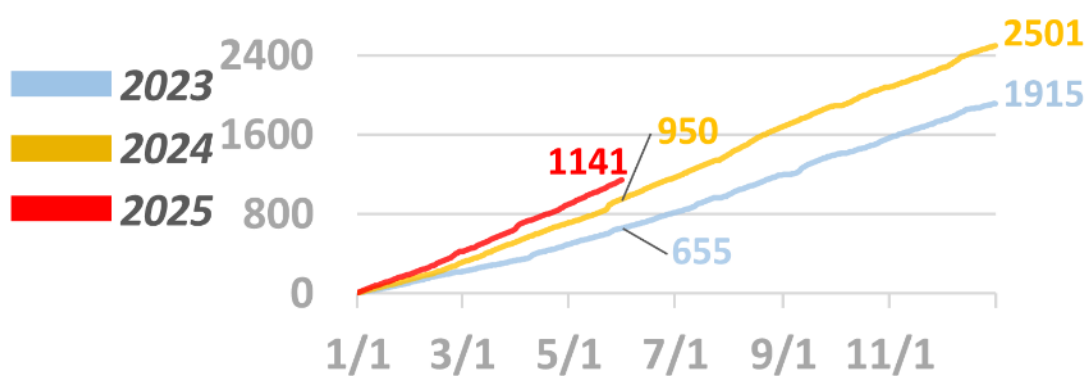
Additionally, the number of days in which over 30 PLA aircraft sorties and more than 10 naval vessels were detected has already exceeded the cumulative totals recorded in the first four months of

2023 and 2024. Notably, the peak periods for naval vessel activity occurred six times in May 2024 but only twice in May 2025. Despite May 2025 registering the second-highest monthly total of naval vessels on record, the number of peak activity days did not increase significantly. This suggests that the rise in monthly naval vessel numbers is primarily driven by an increase in the daily number of vessels detected operating near Taiwan.

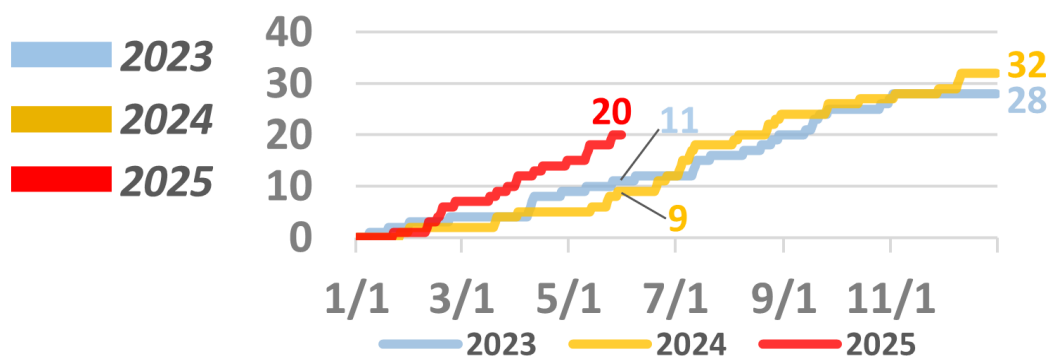
Annual PLA Aircraft Sorties Detected



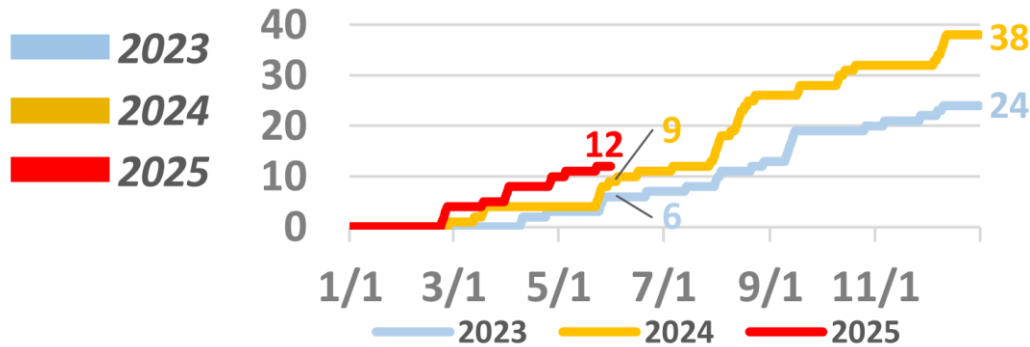
Annual Number of PLA Vessels



Accumulated Number of Aircraft Peak Periods



Accumulated Number of Vessel Peak Periods



2. Implication: Slowing Growth in Intrusions in May This Year

The analysis above indicates that from January to April 2025, the scale and frequency of PLA naval and air activities around the Taiwan Strait continued to increase compared to the same period last year. However, this growth slowed in May, and no large-scale military exercises targeting Taiwan were observed. This change appears to be somewhat related to President Lai's May 20 speech, which was notably more moderate than previous statements.

Notably, the total number of PLA aircraft detected near Taiwan in May 2025 was lower than in May 2024. This suggests that the increased frequency of PLA aircraft sorties crossing the median line is not due to a significant enhancement in military logistics capacity. Rather, it reflects a shift in the PLA's military missions, training, and drills toward more realistic, combat-oriented operations, with greater emphasis on ["using the enemy to train the troops."](#) This means that even without major cross-strait political disputes, Taiwan continues to face [escalating military harassment and pressure from the PLA](#).

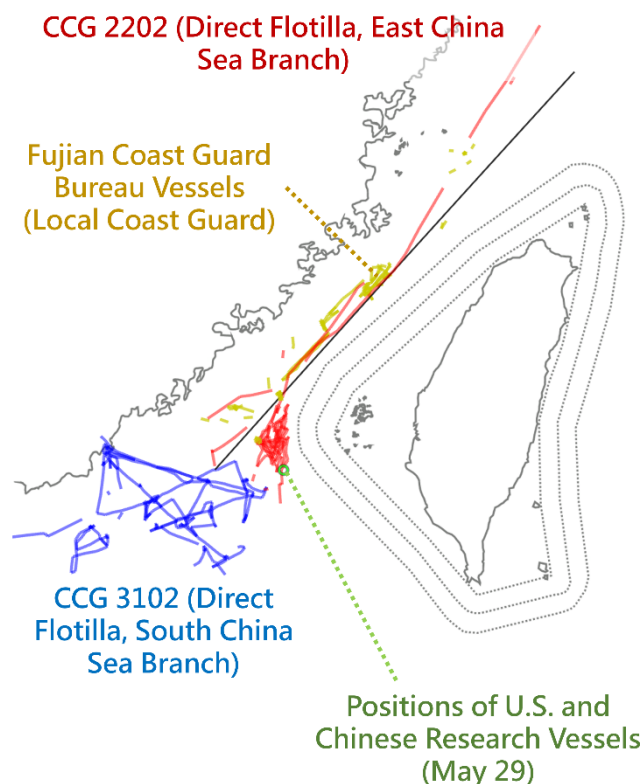
III. Gray Zone Harassment Intensifies: Chinese Coast Guard's Persistent Encroachments and Sovereignty Erosion through Law Enforcement Claims

1. Situation

From [May 15](#) to [16](#), 2025, a patrol group consisting of China Coast Guard vessels 14605, 14604, 14608, and 14521, all under the jurisdiction of the Fujian Coast Guard Bureau, conducted continuous operations in the waters near Kinmen for two consecutive days.

On [May 17](#), China Coast Guard vessel 2202, approximately 40 nautical miles west of Qimei Island in the Penghu archipelago, issued radio warnings to about ten Penghu fishing boats operating in the area, demanding their immediate departure. The Taiwanese fishing vessels complied and moved toward the Penghu Islands. Additionally, China Coast Guard vessels 3102 and 2202 likely conducted joint patrol and law enforcement operations in the southern Taiwan Strait, near the Taiwan Shoal and adjacent waters.

AIS Track of CCG Operations in the Taiwan Strait (May 2025)



On May 20, just before the anniversary of President Lai Ching-te's inauguration, [over 30 Chinese “three-no” vessels \(no name, no registered homeport, no registration certificate\)](#) suddenly entered the waters east of the Taiwan Strait median line near the southwest area of Qimei Island, Penghu (at approximately 23°6'53.5" N, 118°47'27.7" E, about 36 nautical miles southwest of Qimei). Following reports from local fishermen, Taiwan's Coast Guard Administration dispatched the patrol vessel Taichung to enforce law and conduct expulsion operations in the area.

On the morning of May 22, Taiwanese fishermen fishing approximately 68 kilometers northwest of Qimei Island reported the presence of [China Coast Guard vessels 21607 and 21568](#) conducting what appeared to be patrol operations. A Taiwanese Navy vessel was deployed nearby to monitor and expel the Chinese vessels.

From May 24 to 28, the [USNS Bowditch](#), an oceanographic survey ship under the U.S. Military Sealift Command, conducted hydrographic surveys in waters approximately 55 nautical miles from Magong City, Penghu, and 38 nautical miles southwest of Qimei Island. During this period, the Chinese survey vessel Haiyang 29 closely tracked and interfered with the Bowditch's operations.

From [May 27](#) to [28](#), a patrol group consisting of China Coast Guard vessels 14609, 14608, 14603, and 14513, under the Fujian Coast Guard Bureau, conducted law enforcement patrols in the waters south of Kinmen Island for two consecutive days. As of May 28, China Coast Guard law enforcement patrols near Kinmen have reached 74 since February 2024.

2. Characteristics

2.1 Using Maritime Militia Vessels to Undermine Taiwan's Sovereignty and Disrupt Law Enforcement

From May 1 to September 1, China observes its “marine fishing moratorium” during which fishing vessels are required to return to their registered home ports to cease fishing activities. Only four types of fishing operations—trawl shrimp, trap pot, gill net, and light-

encirclement fishing—may apply for fishing permits; all other types are prohibited. The China Coast Guard, Ministry of Agriculture and Rural Affairs, and Ministry of Public Security jointly enforce the “Sword Action” (亮劍) special law enforcement campaign during this period.

Just before May 20, over 30 Chinese “three-no” vessels entered the waters east of the Taiwan Strait median line near the southwest area of Qimei Island, Penghu, during the fishing moratorium when regular fishing vessels were prohibited from operating at sea. These “three-no” vessels are evidently disguised maritime militia ships, using illegal incursions to challenge Taiwan’s sovereignty and law enforcement authority, while disrupting the fishing activities of local fishermen. In other words, these “three-no” vessels clearly form part of China’s gray-zone harassment strategy against Taiwan.

2.2 China Coast Guard’s Routine Deployment in the Taiwan Strait Aims to Emphasize Non-International Waters Status

Since February 2024, the Fujian Coast Guard Bureau has regularly deployed patrol groups consisting of four coast guard vessels in the waters around Kinmen. Operating in pairs, each group conducts patrols lasting three to five hours, with one group maintaining AIS transmissions as required while the other operates with AIS turned off throughout the patrol. These patrols have occurred 74 times to date. Chinese coast guard vessels not only maintain routine operations around offshore islands but have also recently established a consistent two-ship presence in the Penghu waters, disrupting local Taiwanese fishermen’s operations. AIS data indicates that Chinese coast guard vessels have recently begun regular deployments at both the northern and southern ends of the Taiwan Strait, mirroring their presence near the Senkaku Islands. This pattern underscores China’s use of coast guard patrols to assert that the Taiwan Strait and surrounding waters are not international waters. In particular, Chinese coast guard vessels escort and interfere with foreign ships and military vessels transiting waters near Taiwan and its surrounding seas. These actions further demonstrate China’s intent to use coast

guard law enforcement as a means to emphasize its sovereignty claims over the Taiwan Strait.

2.3 The CCP's Attempt to Implement a 'Dual-Layer Cabbage Strategy' Around Taiwan

Traditionally, the "cabbage strategy" refers to China's use of maritime militia vessels, government ships, and naval vessels to form multi-layered encirclements around opposing ships or islands. Recently, more than 30 maritime militia vessels disguised as "three-no" ships conducted fishing operations in the Penghu waters, indicating that the maritime militia's role around Taiwan may parallel that of the navy and coast guard—harassing and surveilling Taiwanese and foreign vessels. Regarding the inner circle of opponents, the layers from inside out are maritime militia, coast guard, and navy; for external opponents, the layers from outside in similarly consist of maritime militia, coast guard, and navy. This layered approach is known as the "dual-layer cabbage strategy." Thus, the CCP is currently implementing a "[dual-layer cabbage strategy](#)" in the waters surrounding Taiwan, pursuing a policy of "isolation."

3. Implication: China's Construction of a 'Large Navy + Strong Coast Guard + Numerous Maritime Militia Vessels' Composite Deterrence System

An analysis of China Coast Guard vessel activity patterns and operational areas highlights China's strategic use of its numerical and fleet advantages to establish a persistent presence around Taiwan, its outlying islands, and the Taiwan Strait, steadily encroaching upon Taiwan's sovereignty. Notably, Chinese coast guard vessels adopt a dual-pattern patrol approach: one group continuously broadcasts AIS signals to reveal their locations, while another maintains AIS silence throughout, creating a "light and dark" patrol dynamic.

Furthermore, recent PLA island-encirclement exercises and force deployments indicate Beijing is likely constructing an integrated "attack-defense" composite deterrence system comprising a large

navy, a strong coast guard, and numerous maritime militia vessels. This system enables China to counter external intervention in the open seas while simultaneously conducting gray-zone harassment and sustained law enforcement operations to gradually erode Taiwan's operational space and sovereignty claims.

IV. Lessons from the India-Pakistan Air Battle on May 7: Battlefield Transparency as the Key to Combat Outcomes

1. Situation

On April 22, 2025, [a terrorist attack](#) occurred in the Indian-controlled Kashmir region, resulting in 26 fatalities. The Indian government immediately attributed responsibility to Pakistan-based groups, including the Resistance Front, Lashkar-e-Taiba, and Hizbul Mujahideen. India responded by expelling Pakistani diplomats and leveraging international opinion to pressure Pakistan.

On May 7, the Indian military launched a precision strike operation, codenamed "[Sindhur Operation](#)," primarily involving the Air Force and missile units, targeting sites in Kashmir and within Pakistan. Pakistan condemned the attacks on mosques and civilian areas, and in retaliation initiated "[Operation Bunyan Marsoos](#)," conducting air and drone strikes against strategic facilities in western India. The engagements focused on radar stations, airports, and communication nodes.

The Pakistani military later claimed to have shot down six Indian aircraft—including three Rafale, one Su-30MKI, one MiG-29, and one drone—while the Indian military acknowledged only that some aircraft were unaccounted for.

2. Characteristics

2.1 Pakistan Air Force's Use of Beyond-Visual-Range Strike Networks

Pakistan has developed an integrated "AWACS–fighter–missile" coordinated combat system using the J-10CE equipped with PL-15E missiles and the JF-17 Block III armed with PL-15E and PL-10E missiles. The ZDK-03 AWACS provides real-time target data via datalink to the fighters, enabling PL-15E missiles to engage targets at ranges up to 145 kilometers.

Although India's Rafale fighters are armed with Meteor missiles

boasting a comparable range of 150 kilometers, Pakistan's use of AWACS-guided targeting enables "first detection, first fire." In contrast, the Indian system suffers from integration issues—Russian-made AWACS and French- and Russian-made fighters have incompatible datalinks—hindering effective countermeasures.

2.2 Pakistan Air Force's Adoption of Electronic Warfare Suppression

The J-10CE, equipped with the KG-600 electronic warfare pod, executed precise jamming against the Indian Rafale fighters' SPECTRA electronic warfare system, resulting in radar degradation and communication disruptions. In the early hours of May 7, during the air battle, several Rafale aircraft aborted their missions shortly after takeoff due to radar failure, with some being struck by PL-15E missiles before even jettisoning their drop tanks.

2.3 Pakistan Air Force Demonstrates Integrated Air Defense System Coordination

The HQ-9P long-range surface-to-air missile system (with a range of 260 kilometers) and the LY-80 medium-range missile system (with a range of 50 kilometers) together form a multi-layered interception network. This is complemented by the J-10CE's KG-600 electronic warfare pod and KLJ-7A radar, creating an integrated "soft-hard kill" capability. When Indian Rafale fighters attempted low-altitude penetration, they were detected by Pakistani HQ-9P radar and successfully shot down.

2.4 India Air Force's Multinational Equipment Leads to System Fragmentation

The Indian Air Force operates a mix of Russian Su-30MKI, French Rafale, and domestically produced LCA aircraft. However, the datalinks among these different platforms are incompatible, preventing effective information sharing. Specifically, the Su-30MKI's N011M passive electronically scanned array radar and the Rafale's RBE2 active electronically scanned array radar data cannot be integrated, resulting in delayed battlefield situational awareness.

2.5 Low Flight Training Hours Among Indian Air Force Pilots

The Indian Air Force averages only 120 flight hours annually—compared to Pakistan's 180 hours—and lacks systematic training for integrated combat operations. During the May 7 air battle, several Indian aircraft were shot down after misjudging the operational status of Pakistani radar systems and inadvertently entering the lethal engagement envelope of the PL-15E missile.

3. Implication

3.1 Achieving Battlefield Dominance through Transparency and Situational Awareness

On May 7, 2025, a large-scale air confrontation occurred between the Indian and Pakistani air forces, during which Pakistan shot down six Indian aircraft of various types within Indian territory. Media reports widely attributed these losses to J-10CE fighters firing PL-15E air-to-air missiles against French-made Mirage fighters. However, these reports overlook the critical factor: the outcome of the air battle hinged on system-level warfare enabled by the construction of a "common operational picture." This system, comprising integrated joint intelligence, surveillance, reconnaissance (ISR), and data link networks, granted "battlefield transparency," which in turn allowed control of "battlefield initiative" and ultimately secured "battlefield victory." In other words, the India-Pakistan air battle was not merely a result of individual weapons systems but a demonstration of effective use of battlefield transparency.

3.2 Sensor-to-Shooter Integration More Decisive than Single-Weapon Systems

The Pakistan Air Force employs a multi-layered sensor network—

including manned and unmanned aircraft, AWACS, electronic warfare platforms, ground radars, and command centers—integrated through an efficient Link-17 datalink and an intelligent command system combining BeiDou navigation and AI-assisted decision-making. This network supports cost-effective strike platforms such as the J-10CE, PL-15E missiles, and KG-600 pods, enabling a closed-loop combat capability of “first detection, first targeting, first destruction.”

During the May 7 air battle, the Pakistan Air Force demonstrated full-spectrum offensive capabilities encompassing detection, identification, tracking, decision-making, engagement, and assessment. Its systematic advantage, formed by commercial satellites, AWACS, electronic warfare aircraft, missiles, and datalink integration—a “sensor-to-shooter” (C4ISR) synergy—denied the Indian Air Force any opportunity to respond effectively.

Pakistan integrates real-time satellite imagery from China's Chang Guang Satellite Company (中國長光衛星公司)'s Jilin-series satellites (吉林系列衛星) with data from ZDK-03 AWACS (with a radar detection range of 450 km and electronic warfare capabilities) to direct J-10CE fighters armed with PL-15E missiles, forming a lethal “sensor-to-shooter” kill chain. In other words, Pakistan has begun to develop a combat capability akin to the PLA's “sensor-to-shooter” system, while the Indian Air Force continues to rely heavily on individual aircraft performance, resulting in predictable losses during the conflict.

Consequently, future air combat will no longer emphasize solely the performance of individual aircraft but will increasingly focus on system-of-systems operations that integrate multiple platforms into

a cohesive “sensor-to-shooter” network.

3.3 Multi-Source Intelligence Enables Pakistani Forces to Accurately Anticipate Indian Military Actions

The electromagnetic spectrum has become the fifth battlefield after land, sea, air, and space. Controlling the electromagnetic spectrum enables control over information flow, thereby influencing decision-making and actions. Future air combat will begin in the electromagnetic domain, where electronic reconnaissance, jamming, deception, and protection techniques will be employed to gain electromagnetic superiority, setting the conditions for subsequent kinetic strikes.

Prior to the conflict, Pakistani forces leveraged multiple intelligence sources: electronic signals intelligence to monitor Indian military communications; human intelligence through the Inter-Services Intelligence’s informant networks inside India; open-source intelligence, including civilian observations of unusual activities at Indian military bases; and technical intelligence via satellite and drone surveillance of Indian Air Force bases. The fusion of these multi-source intelligence capabilities enabled Pakistan to anticipate the likely Indian military actions, scale, and timing before launching their operations.

3.4 Open-Source Intelligence Aids Indian Forces in Successfully Destroying Pakistani Air Defense Missiles

In the early morning of May 8, 2025, Pakistani Air Force air defense units stationed in Lahore successfully intercepted a swarm of Indian drones. However, several hours later, the same position was precisely targeted and struck by Indian missiles. Post-action analysis by Pakistani forces revealed that the accurate targeting was due to

local civilians filming the anti-aircraft gun engagement against the drones at close range and uploading the footage to social media. Indian forces exploited the imagery, analyzing vegetation, building outlines, and lighting angles, combined with geospatial intelligence techniques to pinpoint the position coordinates, enabling the successful strike.

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