RSIS COMMENTARY

7 August 2025

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Aadil Brar

RSiS S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES
Nanyang Technological University, Singapore

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www.rsis.edu.sg No. 171 – 7 August 2025

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By Aadil Brar

SYNOPSIS

Taiwan's rapidly expanding drone programme – anchored by government funding, led by its defence research institute NCSIST, and strengthened by collaboration with US partners – is transforming the island's defence posture. Unmanned systems are now central to its asymmetric strategy against an increasingly assertive China.

COMMENTARY

Asymmetric Deterrence Through UAVs

For Taiwan, drones offer a flexible and survivable means to counterbalance the People's Liberation Army (PLA). Platforms such as the Teng Yun II medium-altitude long-endurance unmanned aerial vehicle (UAV) and the Chien Hsiang loitering munition (aka an exploding or kamikaze drone) are designed to conduct surveillance, electronic attack, and long-range strikes against high-value targets. These systems form part of a broader asymmetric strategy aimed at disrupting PLA operations during a contingency, rather than matching them platform for platform.

In 2025, Taiwan is accelerating its drone investment through a multi-pronged approach, including substantial domestic development and mass production of various drone types, alongside foreign procurement for advanced capabilities, aiming for an annual production capacity of 180,000 drones by 2030. However, some observers remain sceptical about Taiwan's ability to scale up production to the targeted levels within just three years.

The Ukraine war – transformed by drones – has brought the message home for Taiwan. A government-led drone strategy in Taiwan has helped forge a nascent, but growing, technology stack for drone development on the island. The US government

has encouraged Taiwan to develop a drone manufacturing ecosystem based on the lessons learned from the Ukraine war.

NCSIST and the "Drone National Team"

Taiwan's "Drone National Team" is a key government initiative launched in 2022 to rapidly accelerate domestic drone development and production by integrating private manufacturers into its defence industrial base, aiming to achieve self-sufficiency and become a global hub for drone technology.

At the centre of this initiative is the National Chung-Shan Institute of Science and Technology (NCSIST), Taiwan's premier state-owned defence research institute. NCSIST leads the "Drone National Team", a consortium of over 60 Taiwanese companies and research institutions tasked with developing indigenous UAV systems at scale.

In partnership with Taiwanese manufacturer Thunder Tiger and US-German firm Auterion, NCSIST has co-developed a kamikaze drone, the "Overkill" First-Person View (FPV) drone that allows the pilot to see in real time what the drone sees. This "Overkill" drone integrates AI-enhanced swarm and autonomy software.

Taiwan's Ministry of National Defence has committed significant resources to UAV development and acquisition, with its landmark 2024 tender for 3,422 commercial-grade drones – valued at approximately US$210 million – marking the largest government drone procurement to date. Deliveries are scheduled to continue through 2028. This shift from low-rate production to mass manufacturing mirrors lessons from recent conflicts such as Ukraine, where attritable drones reshaped battlefield dynamics.

US-Taiwan Industry Collaboration

Beyond arms sales, US drone companies are playing an increasingly active role in Taiwan's defence-industrial ecosystem. Auterion, a dual-use drone operating system provider, signed an MoU with NCSIST in June 2025 to supply autonomy software for swarm-capable drones. Meanwhile, US firm Shield AI has entered development partnerships with Taiwanese companies to test ruggedised UAV systems optimised for maritime and mountain terrain.

In a parallel agreement, Taiwanese firm Thunder Tiger will embed Auterion's technology stack into up to 25,000 FPV drones. This move significantly expands Taiwan's domestic capacity for precision loitering munitions capable of striking armoured targets or small naval vessels.

These commercial alliances are crucial in sharpening Taiwan's qualitative edge in drone technology, diversifying revenue streams for US firms, and critically, reinforcing a trusted, non-Chinese supply chain for essential electronics, software, and datalinks.

These collaborations allow Taiwan to access advanced autonomy, AI-enabled target identification, and sensor fusion technologies while retaining manufacturing and export control within its borders. They also signal a growing trend of US defence tech startups

working directly with Taiwan's Ministry of National Defence, bypassing traditional foreign military sales channels to accelerate delivery and adaptation.

Taiwan's Drone Strategy: Self-Sufficiency and Supply Chain Resilience

A crucial feature of Taiwan's drone strategy is its effort to eliminate Chinese-origin components from all military-use UAVs. The Industrial Development Administration has issued clear guidelines banning the use of Chinese-made GPS chips, optical sensors, flight controllers, and datalinks.

By 2023-24, Taiwan had achieved a significant milestone, reaching an estimated 70-80 per cent self-sufficiency in drone components, and it continues to work towards closing this gap through robust domestic R&D and collaborations with trusted foreign partners. To further this goal, Taiwan established a US$125 million fund specifically to expand local production of drone components.

Domestic tech firms have been enlisted to build secure electronic subsystems, while the Ministry of Economic Affairs offers incentives to companies that "onshore" sensitive drone technologies. This strategic move directly reflects Taipei's broader concerns about electronic espionage, firmware backdoors, and peacetime vulnerability within its supply chains.

US Support: Platforms and Integration

The US government approved the potential sale of MQ-9B SeaGuardian maritime surveillance drones to Taiwan in 2020. Taiwan formally procured four of these drones, which are anticipated to begin in 2026 and conclude by 2027. These advanced UAVs, designed for extensive maritime surveillance, are being integrated with Taiwan's indigenous command-and-control infrastructure and will be strategically deployed along the island's eastern coastline.

In June 2024, Taiwan also secured a US$60.2 million package of Switchblade 300 and ALTIUS 600M-V loitering munitions. These provide highly mobile strike options compatible with existing Taiwanese launch platforms. US advisors are reportedly supporting training exercises, mission planning, and ISR (Intelligence, Surveillance, and Reconnaissance) data fusion to enhance joint operational capabilities.

Taiwan's own indigenous drone programme has been around for some years, but it's the US support to provide a tactical edge to Taipei's drone companies that has triggered a limited response from Beijing.

China's Red Lines and PLA Responses

From Beijing's perspective, Taiwan's drone expansion, particularly with US support, crosses significant political and strategic red lines. The integration of MQ-9Bs into regional maritime surveillance and the development of long-range kamikaze drones capable of striking coastal targets in Fujian are perceived as destabilising provocations. The PLA has intensified its counter-drone training, including electronic warfare drills, swarm-jamming exercises, and targeting of UAV command centres.

Beijing has historically reacted with strong protests and heightened tensions whenever US P-8 surveillance aircraft transited the Taiwan Strait. The deployment of MQ-9B drones is expected to boost Taiwan's surveillance capabilities significantly, but it will likely provoke a sharp response from Beijing.

China has expressed disapproval of the US support for Taiwan's drone Industry. In December 2024, China announced sanctions against American drone companies BRINC Drones, Shield AI Inc., and Kratos Unmanned Aerial Systems Inc. over US arms sales to Taiwan. Though China didn't explicitly sanction these companies for specific drone sales to Taiwan, Beijing was sending a signal targeting US support for Taiwan's drone ecosystem.

Unmanned Escalation and the Grey Zone

While drones can reduce the cost of tactical engagement and enable persistent surveillance, they also introduce ambiguous thresholds. A drone incursion or shootdown – especially involving loitering munitions – could be misinterpreted as an act of war, potentially triggering disproportionate retaliation.

In the murky grey zone – where military signalling meets psychological tactics – drones offer Taiwan a subtle way to conduct denial, deception, or targeted disruption without necessarily sparking open conflict. On 5 October 2022, Taiwan's former Defence Minister Chiu Kuo-cheng described China's use of drones against Taiwan as a "first strike". Chiu's statement was the first such formulation to deter China's persistent use of drones to target Taiwan.

With so little direct military communication between Taipei and Beijing, there is a heightened risk that an incident in the air could accidentally spiral out of control. So far, both sides have managed these types of incidents involving drone incursions with restraint.

The risk of escalation persists in an increasingly volatile geopolitical climate. Beijing may view the deployment of large surveillance drones near the Taiwan Strait as a red line, potentially prompting a military response. While Taiwan's military has remained mindful of how its drone programme affects cross-strait dynamics, China's expanding high-tech military footprint in the Western Pacific is steadily eroding the physical and political boundaries of the strait.

A New Strategic Equation

Taiwan's drone strategy reflects hard-earned lessons from the Russia-Ukraine war, where low-cost UAVs have proven decisive in disrupting superior forces. Like Ukraine, Taiwan is leveraging drones to enhance asymmetric defence, signal resolve, and impose operational costs. But unlike Ukraine, Taiwan operates in a pre-conflict grey zone – where drones risk not only deterring aggression but also triggering unintended escalation.

In this environment, drones are more than tactical assets; they are tools of strategic signalling. Their presence alters how the PLA perceives Taiwan's capabilities and intentions. A misjudged drone incursion by China could spark a crisis, particularly in

the absence of clear cross-Strait crisis management mechanisms. Thus far, incidents involving Chinese drones near Taiwan have been met with restraint rather than escalation on both sides.

Ultimately, Taiwan's growing UAV fleet is a bet on deterrence through technological resilience and supply chain autonomy.

Aadil Brar is a Taiwan-based analyst with a background in journalism, having reported for Newsweek, TaiwanPlus News, BBC World Service and others. He was a 2023 Taiwan Ministry of Foreign Affairs Fellow at National Chengchi University and holds an MSc in International Politics from SOAS, University of London, and a BA from the University of British Columbia in Canada.

S. Rajaratnam School of International Studies, NTU Singapore
Block S4, Level B3, 50 Nanyang Avenue, Singapore 639798

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