

## DRONE INTERCEPTORS ARE NOW A PRIORITY FOR EUROPE AND SHOULD BE FOR TAIWAN TOO

## BY DAVID KIRICHENKO

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As Russia struggles to make battlefield gains, Ukrainian drones continue to inflict steady cuts, striking oil facilities and other parts of the war machine. In response, the Kremlin has turned outward. Moscow is now sending swarms of drones across Europe to probe NATO's defenses, hoping to sap political will and pressure Europeans to scale back support for Ukraine. This is not a show of strength but of weakness—and it signals what Taiwan may face in the near future.

Ukraine has shown how drones redefine battle. They forced tanks to move cautiously on land and drove the Black Sea Fleet into retreat at sea. With time, Ukraine built a "drone wall" that wiped out Russian mechanized assaults, forcing Moscow to hurl waves of infantry into meatgrinder attacks instead. The kill zone on the front has expanded from just a few kilometers to nearly 20 kilometers, leaving Russian troops exposed long before they reach Ukrainian lines. However, Europe is now encountering the same reality, as Russia exports drone warfare beyond Ukraine's battlefields.

Today, Europe is <u>learning</u> what Kyiv already knows, in that cheap mass drone attacks are a threat that is very difficult to manage. Taiwan, confronting the prospect of a Chinese drone saturation campaign, must absorb this lesson early. "Cheap, long-range precision saturation strikes are one of the greatest threats to international security," noted James Patton

Rogers, a drone expert at Cornell's Brooks Tech Policy Institute, in a <u>report</u> with the *Wall Street Journal*.

"Unmanned systems have become a critically important component of the war against Russia," said Bohdan of the Unmanned Systems Battalion of the 110th Separate Mechanized Brigade. But the Russians were forced to learn the same lessons. Over time, they pivoted to <a href="mailto:mass-producing">mass-producing</a> cheap drones to overwhelm defenses.

This has radically altered the <u>economics of warfare</u>, as it is not sustainable to fire air-defense missiles costing hundreds of thousands of dollars to shoot down a Russian Geran drone worth only a few thousand. The Institute for the Study of War has <u>noted</u> that the constant drone attacks on Ukrainian cities are meant to psychologically exhaust Ukraine and erode Western support.

Much as it did during the battle of Avdiivka, when US aid temporarily <u>halted</u>, Ukraine leaned on its own ingenuity to counter Russian forces. Today it is producing millions of drones. "Ukraine is the origin of much of the technology the Soviets developed," said Heiner Philipp, an engineer with <u>Technology United for Ukraine</u>. "Most Russian helicopters fly with Ukrainian turbines to this day."

When Russia began unleashing mass drone strikes, Ukrainian companies and volunteers mobilized rapidly, developing a wide range of counter-drone solutions. But as the scale of attacks grows, those systems must increasingly rely on autonomy. "Interceptors are more effective when they're autonomous," <a href="mailto:said">said</a> Lyuba Shipovich, CEO of <a href="Dignitas">Dignitas</a> Ukraine, which helps train Ukrainian soldiers on drone defense. "You can't expect to have 700 operators for 700 drones during a mass strike. AI allows us to launch swarms of interceptor drones without that limitation."

The growing urgency of drone defense and evolving the "drone wall" is no longer confined to Ukraine. After Russian kamikaze drones violated Polish airspace on Sept. 10, European governments began scrambling for Ukrainian-made interceptor systems. "We need to be prepared for war, so it is high time to be learning from Ukraine," a European military diplomat told the Kyiv Independent. Within hours of the attack, Ukrainian defense firms reported a surge in requests from European countries for drone interceptors and electronic warfare systems. Ukraine's top general Oleksandr Syrskyi said that drone interceptors have achieved over a 70% success rate in downing Russian Shahed attack drones. For Taiwan, the stakes are even higher since it would face a flurry of drone attacks from the opening hours of any Chinese invasion.

Indeed, Russian drones are already adapting with countermeasures. Some now fly unpredictable routes or use rear-facing cameras to evade interceptors. "Once the Russians realized we were using interceptor drones, they began installing sensors on their drones to detect approaching aerial objects," said Mykola Melnyk, a former Ukrainian officer from the 47th Mechanized Brigade.

That makes autonomy not just preferable but essential, as AI-enabled interceptors can adjust in real time to swerving, weaving targets. Ukraine has already been reportedly using AI interceptors. "The winner is who can update their technology the fastest," said Ukrainian Deputy Prime Minister Mykhailo Fedorov.

Roy Gardiner, an open-source weapons researcher, added: "Another system Russia has used is an EW platform that detects the video signal of an interceptor FPV and automatically initiates a stronger jamming signal on that frequency." But innovation on the battlefield must be matched by innovation in procurement. Ukraine's success lies in speed and iteration, while Western defense systems often falter under outdated frameworks.

Deborah Fairlamb, a founding partner at Green Flag Ventures, a US fund investing in Ukrainian-founded companies, said that the West should be learning from Ukraine's experience not just at the product level, but across the entire chain of procurement, deployment, and adaptation. Fast, iterative drone warfare demands speed, resilience, and a tech ecosystem capable of supporting defense innovation.

"Western defense tech faces its own problems," said Fairlamb. According to her, many systems arriving in Ukraine are not prepared for the realities of electronic warfare and GPS denial. Too often, technologies are designed for permissive environments and simply do not work on the battlefield. Even when countermeasures work, they are quickly neutralized. "Western procurement cycles and frameworks are outdated," she added. What matters is how fast the adaptation cycle is, redeploying technology on the battlefield—cycle many Western companies have struggled with on the front in Ukraine.

A recent report from the Center for a New American Security echoed this warning, <u>arguing</u> that US forces remain unprepared for mass drone attacks. American troops have already been forced to fire missiles worth millions of dollars to down drones costing only tens of thousands, a cost imbalance that CNAS warned is unsustainable. The report concluded that without "deep magazines of substantially enhanced counterdrone capabilities," US distributed warfighting strategies could be overwhelmed by Chinese drone swarms in a Taiwan scenario.

Another challenge for Taiwan is that China and North Korea are also <u>learning</u> modern warfare alongside Russia. "Russia has access to components and technologies from China to build tactical drones, while China is learning how Russia is using its drone technology at the front," said Samuel Bendett, an adjunct senior fellow at the Center for a New American Security. The contest is no longer just between Ukraine and Russia. A wider learning network is emerging, with Russia <u>sharing</u> battlefield experience with its allies, strengthening the modern <u>Axis of Evil</u>.

Mick Ryan, a retired Australian major general, said, "Russia has formed a learning community with China, Iran, and North Korea, sharing battlefield lessons, collaborating on technology development, and evading sanctions." Ukraine's own experience as a drone <a href="superpower">superpower</a> offers the clearest guidance for Taiwan and the West.

As Serhii Kuzan, head of the Ukrainian Security and Cooperation Center, told me: "Ukraine has shown that layered, decentralized air defense—combining air defense systems, electronic warfare, cheap interceptors, and mobile teams—is effective."

For Taiwan, that means moving beyond isolated systems and into scale. "Taiwan should emphasize mass production, resilience, and infrastructure protection," Kuzan said. Taipei is already forming its first dedicated drone units in 2025 while collaborating internationally, but the challenge will be building the industrial depth to sustain defense against mass saturation. "Each war evolves. Ukraine in 2022 was different from 2023, and today is different again," said Oleksandra Ustinova, a Ukrainian lawmaker from the Holos party. "While Taiwan can learn from us, they must remember that it's always a technological war, and no single system is enough."

While not all lessons from the battlefield in Ukraine translate directly to Taiwan, low-cost technologies are proliferating worldwide and are increasingly paired with conventional capabilities. Cheap decoys can overwhelm an opponent's air defenses, wearing them down until expensive interceptors are depleted, after which high-cost missiles can slip through and inflict heavy damage. This cheap-for-expensive dynamic creates a costly asymmetry that Taiwanese defenders must plan for.

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