SNAKE ISLAND INSTITUTE

Defense Tech Monthly:

Ukraine-Russia Battlefield

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Frontline Update

Northeast (Vovchansk–Kupiansk–Lyman):

Fighting on the Slobozhanskyi Axis remains intense with Russian forces continuing efforts to expand their footholds around Vovchansk, pushing toward Synelnykove and capturing Odradne and Bolohivka. Pressure on the Kupiansk sector persists, with engagements reported near Petropavlivka, Mala Shapkivka, Pishchane, and Novoplatonivka. Along the Lyman front, Russian units intensified their assaults near Serednie and attacks toward Yampil, reaching the Yampil–Lyman road, with some small enemy infantry groups reaching the eastern outskirts of Lyman.

East (Pokrovsk–Myrnohrad–Siversk):

Heavy assaults continue along the Pokrovsk Axis as Russian forces attempt to consolidate control in central Pokrovsk and expand their presence around Rivne, a key logistics hub for advances toward Myrnohrad. Ukrainian defenders hold their lines in Myrnohrad, countering infiltration from nearby grey-zone settlements. Along the Siversk direction, Russian units advance from Hryhorivka through Serebrianka toward Dronivka, maintaining pressure on Siversk. Fighting also intensified around Chasiv Yar, where Russian forces push through the Kanal and Nova districts and attempt crossings along the Siverskyi Donets-Donbas canal. Clashes around Kostiantynivka and Toretsk continue as Russian troops probe defenses near Druzhba and Pivdenne, while Ukrainian forces retain the key high-ground positions, protecting the Kramatorsk-Sloviansk axis.

South (Huliaipole–Kherson):

The most rapid Russian gains in November occurred along the Huliaipole Axis, where enemy forces pushed through several settlements and advanced toward Solodke, Dobropillia, Varvarivka, and Huliaipole. Fighting also intensified near Orikhiv, with clashes around Mala Tokmachka, Stepove, Stepnohirsk, and Prymorske, as Russian operations expanded across the Zaporizhzhia and Prydniprovsk sectors—likely signaling preparations for a broader southern offensive. On the left-bank Kherson front, Russian forces increased assaults and drone-led reconnaissance against Ukrainian bridgeheads near Krynky and Kozachi Laheri, supported by heavy artillery and glide-bomb strikes aimed at containing Ukrainian footholds along the Dnipro.

Beyond Human Reach: UGV Medevac Breakthrough After 33 Days Behind Enemy Lines

Ukrainian UGV operators successfully evacuated a wounded soldier from Russian-controlled territory using an unmanned ground vehicle (UGV) equipped with an armored capsule. The soldier had **spent 33 days behind enemy lines** before the breakthrough rescue mission.

This was the First Medical Battalion's seventh attempt, following six previous failed efforts. During the **64-kilometer mission**, the MAUL UGV drove over a mine but kept moving, and on the way back, a Russian drone dropped explosives directly onto the vehicle. The armored capsule shielded the wounded soldier inside. Despite a damaged wheel, the UGV still managed to cover 37 kilometers at an average speed of 13 km/h, completing the evacuation in nearly six hours.

This rescue displays a significant advancement in combat casualty care technology. The MAUL represents the 11th generation of the battalion's self-developed evacuation system, designed specifically for situations where traditional medevacs cannot operate. The vehicle's 200-kilometer range, quad-bike speed capabilities, and polypropylene armored capsule protect from shrapnel while allowing wounded soldiers to be extracted when immediate evacuation groups cannot reach them.

Ukraine announced plans to deliver 15,000 UGVs by the end of 2025, to deploy 30,000 UGVs by 2026. Over 200 Ukrainian companies are currently working on the development of UGVs, producing more than 200 variants. These unmanned systems is more than technological advancement; they're saving lives that would otherwise be lost to the impossible task of frontline rescue under constant drone surveillance.

A Ukrainian Soldier Rescued By A UGV. Source: United24

Machine-Gun UGVs vs Russian APCs and Infantry

Strike UGV operations are becoming a regular feature across the Ukrainian front. This month, the 5th Assault Brigade reported a unique operation on a fog-covered logistics route where a patrolling **machine-gun UGV detected a Russian breakthrough attempt and liquidated an advancing APC with infantry onboard**, preventing the assault from reaching Ukrainian positions. Similarly, the 3rd Assault Brigade revealed a mission in which its NC13 strike unit deployed a **gun-equipped UGV to hold a contested frontline position remotely** for over a month, maintaining surveillance, deterring Russian infantry, and delivering sustained suppressive fire without exposing personnel. UGVs are now providing persistent presence, precision fire, and reliable defensive capability in sectors where manned positions would be too vulnerable.

5th Assault Brigade's UGV against Russian APC. Source: Kagan Dunlap

Robotic Warfare Tightens: Russia's Catch-Up Push Tests Ukraine's Early Advantage

While Ukrainian forces continue to demonstrate effective frontline use of UGVs, Russian units are rapidly expanding their own deployments, **tightening the gap between the two sides**. Multiple models of UGVs are now being actively tested and utilized across various sectors of the front line.

Russia's primary platform, the UGV "Courier," has undergone rapid evolution since its introduction. Measuring 1.4 meters in length, 1.2 meters in width, and 58 centimeters in height, the 250-kilogram robot features armor plates protecting its tracks from drone attacks and artillery shrapnel. **The modular platform accepts various weapon configurations, including automatic grenade launchers, heavy machine guns, and most recently, thermobaric rocket modules.**

The latest UGV **Courier variant mounts a Shmel thermobaric rocket module** delivering short-range incendiary strikes through a remotely operated, sensor-guided launcher. Russian state media has documented multiple Courier platforms in offensive operations, including reported drone-versus-drone engagements against Ukrainian FPVs.
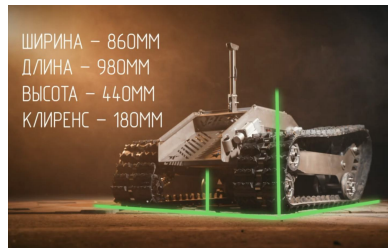

The "Shanghai" And "Lyagushka" Tandem System. Source: Victory Drones

ШИРИНА – 860ММ
ДЛИНА – 980ММ
ВЫСОТА – 440ММ
КЛИРЕНС – 180ММ

The "Strannik" V2. Source: The Defender

UGV "Courier" With A Shmel. Source: Army Recognition

Russian "Dnepr" units have actively used the "Shanghai" and "Lyagushka" tandem systems for ammunition delivery and casualty evacuation. The tracked "Shanghai" can carry up to 200 kg of cargo through difficult terrain, including swamps up to half a meter deep, while transporting the wheeled kamikadze "Lyagushka" to extend operational range.

The Russian military employs UGVs across multiple roles: logistics and supply delivery, medical evacuation of wounded soldiers, mining and clearance operations, electronic warfare payload deployment, and direct combat support. The "Strannik" V2 model can operate up to 15 kilometers without external antennas and carry two tank mines with remote detonation capability.

Although Ukraine was unquestionably the first mover and remains the global leader in combat UGV employment, Russian forces are rapidly closing the gap. Their growing variety of platforms, expanding tactical roles, and willingness to field imperfect designs at scale show a clear intent to catch up. If Ukraine does not continue accelerating development, standardization, and mass production, the technological advantage it has created on the battlefield risks eroding.

Frontline R&D Meets Civilian Engineering: A New Model for Military Innovation

For the first time, **Kyiv hosted the European Defense Tech Hackathon**, a four-day event held from November 6 to 9 that brought together engineers and military specialists to accelerate defense technology development. Over 300 participants attended, including engineers, developers, funds, and military specialists.

The European Defense Tech Hub (EDTH), Snake Island Institute, Moodro, Inflection, and the Kyiv Aviation Institute organised the hackathon. Twenty-three teams participated, working on challenges focused on air defense, counter-UAS detection, autonomous interception systems, and multi-sensor data fusion. Snake Island Institute, in cooperation with Ukrainian military units, including the 3rd Army Corps, the 3rd Separate Assault Brigade, and the 412th Separate Brigade of the Unmanned Systems Forces "Nemesis", presented battlefield urgent needs as challenges for this hackathon.

The first place took the team "UVAGA", which developed Project ASPIS, a short-range FPV-radar solution designed for non-RF detection of small, fast FPV drones. The system can be assembled for under $1,000 and mounted on interceptor UAVs or fixed platforms.

While it may seem like yet another defense tech event, **the significant involvement of military representatives highlights a growing shift toward decentralized frontline problem-solving**.

Ukraine is shifting away from traditional, centralized defense R&D toward a model where solutions originate inside military units, in field engineering labs, and within small development teams. Increasingly, soldiers themselves identify tactical gaps, prototype solutions, and test them under real combat conditions.

The hackathon created a much-needed link between frontline R&D cells and civilian engineering talent. Ukraine's most effective innovations should emerge when military operators, who understand battlefield realities, collaborate directly with civilian experts. This decentralized model closes capability gaps not through top-down procurement, but through rapid, iterative collaboration between operators and agile engineering teams. Therefore, it should be preserved and scaled.

Defence Tech Hackathon Panel. Source: Snake Island Institute

Ukraine Continues Destroying Russian Air Defense System in Crimea

Ukraine is steadily taking apart Russia's air defense network in occupied Crimea. Since the beginning of November, Ukrainian forces have destroyed at least eight major air defense systems and multiple radar installations across the peninsula. On November 1-2, Ukraine's Defence Intelligence of Ukraine (HUR) **struck multiple targets** in a single night operation:

- S-400 "Triumph" command post with its 92N6E multifunctional radar
- AORL-1AS airfield radar
- P-18 "Terek" long-range detection station
- Autonomous power supply equipment for the S-400 complex

Russian 92N6E Multifunctional Radar. Source: HUR

Secondary explosions confirmed ammunition detonations at Russian positions. The destruction of the 92N6E radar, the S-400's primary engagement system responsible for precision tracking and missile guidance, significantly degraded Russia's ability to protect strategic assets across the peninsula.

In mid-November, HUR's "Prymary" special unit **eliminated an entire air defense site**:

- Lira-A10 airfield radar complex
- 55Zh6U "Nebo-U" long-range detection radar
- "Nebo-SV" radar in a dome structure
- Ka-27 multi-role naval helicopter (likely Russia's first documented loss of this type)

Ka-27 Naval Helicopter. Source: HUR

The Ka-27 can carry torpedoes and up to 36 depth charges, making it a valuable asset for patrol and anti-submarine missions in the Black Sea. Dramatic footage showed a Ukrainian drone evading a Pantsir-S1 missile by mere meters before striking its target.

On November 28, Naval Forces and SSO conducted **the month's most significant operation** at Saky airfield, destroying:

- Tor-M2DT Arctic modification air defense system, **one of only 12 such rare units** that Russia possesses
- Pantsir-S1 anti-aircraft system
- ZU-23-2 anti-aircraft gun on a KamAZ truck
- Command and control center for aviation operations
- Hangars storing Orion and Forpost strike drones

The operation followed a pattern: FPV drones first eliminated the Tor and Pantsir systems protecting the airfield, then larger strike drones attacked the command center and drone storage facilities.

Tor-M2DT Air Defense Missile System. Source: Ukrainian Navy

The destruction of the Tor-M2DT is a particularly significant loss. This specialized system, **mounted on dual-tracked Arctic transporters**, was designed to protect strategic installations in Russia's far north, not fight in Crimea. Only Russia's 80th Motor Rifle Brigade of the Northern Fleet possessed these systems, with a total of 12 units as of 2020.

Its deployment in Crimea, thousands of kilometers from its intended Arctic environment, suggests Russia's growing desperation to maintain air defense coverage. According to **open-source monitoring**, this was only the third confirmed destruction of this Arctic variant since the war began; the two previous losses occurred in the Kherson region in 2023.

Ukraine's November campaign is a **methodical approach to destroying Russian air defense infrastructure in Crimea**. Each destroyed system expands Ukraine's operational freedom. Moscow now faces an impossible choice: continue deploying premium air defense assets to Crimea, where they face systematic destruction, or accept degraded coverage that enables even more.

Ulyanovsk Becomes First Region to Cut Mobile Internet Amid Fears of Ukrainian UAVs

Russia has begun **disabling mobile internet in entire regions until the end of the war**, with Ulyanovsk the first confirmed oblast to implement a full shutdown. By cutting mobile data, Russia aims to disrupt reconnaissance, targeting, and navigational support for Ukrainian kamikaze drones that have repeatedly penetrated deep into Russian territory.

Ulyanovsk imposed Russia's first permanent mobile internet blackout in early November 2025. Regional government officials confirmed that the restrictions would remain in place until the end of the war. The shutdown has lasted over three weeks, with the exact affected areas undisclosed for security reasons. In late November, Krasnoyarsk experienced outages that lasted four days, while disruptions also affected Bashkortostan, Khakassia, Tver, and Volgograd. Residents report constant GPS failures, broken taxi apps, and payment system disruptions. **Authorities created a "white list" of approved services, including Gosuslugi, Yandex, VKontakte, and Ozon, along with approximately 450 public Wi-Fi hotspots.**

Federal authorities expanded security zones around strategic facilities to counter Ukrainian drone attacks. However, the **measures haven't significantly reduced successful drone strikes** on Russian oil refineries and military facilities, raising questions about their actual effectiveness versus civilian impact.

Russia Targets Ukraine's Railway Heart: Strategic Strikes on Locomotive Depots

Russia continued to execute **a calculated strike against Ukraine's railway infrastructure**. In the previous month, Russia hit the locomotive depot, traction substations, and rolling stock in Poltava. The attack temporarily **disrupted major routes, including Kharkiv-Lviv and Kramatorsk-Lviv trains**, while leaving over a thousand households without power.

Locomotives are the critical weak point in Ukraine's rail system. Unlike damaged tracks that can be quickly repaired, locomotives represent sophisticated machinery that cannot be easily replaced. Ukraine's few production facilities are concentrated in the eastern regions, already under constant threat of strikes. **Destroying even a handful of locomotives can paralyze entire railway directions**, as trains cannot move without traction engines.

Poltava serves as a crucial railway junction, connecting eastern and western Ukraine and channeling significant military and humanitarian cargo. The depot handles ammunition, fuel, spare parts, and equipment flowing to the east front.

When logistics slow down even briefly, it impacts troop rotations, ammunition supplies, and transportation of the wounded, forcing military command to reroute through riskier and more fuel-intensive road convoys.

Russia's targeting doctrine has evolved from striking rails to destroying the locomotives themselves, aiming at Ukraine's logistical heart rather than easily repairable arteries. **Ukraine must urgently address this defense technology gap** or face severe logistical constraints on the front lines.

A Destroyed Train At A Depot In Odesa. Source: The Guardian

Ukraine's First Deep-Strike Kill: FP-1 Drone Downs Russian Mi-8

In November, **Special Operations Forces of the Armed Forces of Ukraine hit a Russian Mi-8 helicopter with a "deep strike" drone for the first time**. Special Operations Forces released footage of the strike, indicating it occurred near Kuteynikove in Russia's Rostov region. The helicopter was targeted by the Ukrainian FP-1 long-range attack UAV, marking an escalation in Ukraine's ability to hit high-value aviation assets beyond the frontline.

While **Ukrainian drones have previously downed Russian helicopters, this event represents the first confirmed kill using a long-range platform.** If these capabilities are scaled, they could impose sustained pressure on Russian aviation and potentially force the enemy to limit rotary-wing operations near the border.

Snow, Ice, and FPVs: Challenge for Anti-Drone Nets

Anti-drone nets remain a low-cost defensive solution whose overall effectiveness continues to justify their price, **yet recent weather conditions have exposed critical design flaws**. Heavy rains and early snow caused multiple structures to collapse, blocking roads and creating additional logistical strain. Materials and overall construction have been criticized for failing rapidly under basic environmental stress. **As winter advances, snow and ice will further overload these improvised systems, underscoring not only the need to reinforce the concept**, but also the limits of relying on low-tech solutions.

Recent **footage from November shows Russian forces employing thermite-equipped drones to burn through nets** placed along roads behind Ukrainian positions, claiming that a single UAV carrying a thermite charge can clear nearly one kilometer of netting and demonstrating how easily current materials can be neutralized. The combination of environmental degradation and emerging Russian countermeasures further illustrates the need to transition toward more advanced, durable, and higher-tech protective systems.

Some highlight the **need to replace "fishing-net" materials with metal variants**, which would be more durable and require less reconstruction work to close emerging gaps, ultimately saving lives.

Similar to convoy routes, checkpoints are increasingly being covered with nets. As Serhii Flash suggests, **one potential improvement is shifting from rigid "tunnels" to "islands of safety" by adding a net-curtain–type entrance and exit**, allowing vehicles to pass freely while still tangling incoming drones and preventing dangerous blockages during adverse conditions.

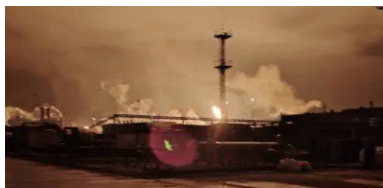*Collapsed Anti-Drone Nets. Source: pekhno_news*

November's Deep Strike Evolution: The Endurance Campaign Matures

November 2025 demonstrated the full maturation of Ukraine's deep strike capabilities into a sustained, **industrial-scale campaign that systematically degraded Russia's petroleum infrastructure and military-industrial capacity**. Building on months of investment in long-range drone technology, **Ukrainian forces maintained near-daily strikes on Russian oil and gas facilities**, while simultaneously introducing new indigenous weapons systems, including the **Bars cruise missile-drone and expanded use of the Lyutiy long-range platform**.

Oil & Energy Infrastructure: The 10% Threshold

November 2025 marked a critical inflection point in Ukraine's petroleum campaign, with industry experts confirming that deep-strike drone attacks have cost **Russia 10 percent of its refining capacity**. While not catastrophic, this degradation created measurable economic pressure across Russian regions, particularly as winter fuel demands increased.

Over 50 Ukrainian-made drones, including Bober and FPV-1 models, on November 4, struck the **Lukoil Nizhegorodnefteorgsintez** refinery in a joint operation conducted by the Defence Intelligence of Ukraine (HUR), the Armed Forces, and Special Operations Forces. The refinery was struck while undergoing repairs to a rectification column used for primary oil processing, with the facility supplying fuel to the Moscow region, which accounts for about 30% of Russia's fuel consumption. Video footage showed flames engulfing the facility, with annual crude processing capacity around 17 million tons, producing over 50 types of petroleum products, including automotive, aviation, and diesel fuels.

On November 6, **Ukrainian drones struck the Volgograd refinery** for the second time in nearly three months, with the facility producing **287,000 barrels per day** and serving as the largest fuel and lubricant producer in Russia's Southern Federal District. The General Staff noted the plant's annual refining capacity **represents 5.6% of all refining in Russia**, making it a strategic target for disrupting military fuel logistics.

On November 11, Ukraine targeted **Rosneft's Saratov refinery,** a critical piece of domestic fuel distribution infrastructure, and the Orsk **refinery in the Orenburg region, near Kazakhstan**, damaging a key processing unit.

On November 16, **the Novokuybyshevsk oil refinery was struck by new jet-powered Bars drones**, marking the fifth attack on the same facility in 2025. The refinery, one of Russia's leading producers of top-grade military jet fuel, had only resumed operations in early November following a previous strike on October 18-19 that led to a complete shutdown. In 2024, the plant processed **5.74 million tons of crude oil**, producing **1.10 million tons of gasoline, 1.64 million tons of diesel fuel, and 1.27 million tons of fuel oil.**

At the end of November, Afipsky Oil Refinery was affected by a deep strike, located about 200 kilometers from the front line, which supplies diesel fuel and aviation kerosene to Russian forces. Local officials confirmed a blaze covering roughly 250 square meters, though they claimed only technological equipment was damaged. The refinery had been previously struck on September 26 and twice in August, demonstrating the systematic re-engagement strategy.

Russian Facility Burning Overnight. Source: Kyiv Independent
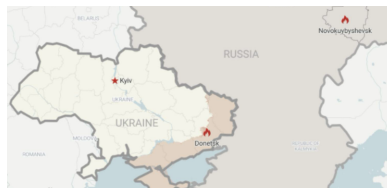
Map of Ukraine and Russia. Source: Euro Maidan

Pipeline Infrastructure Strikes

In early November, Ukrainian HUR destroyed three sections of the **Koltsevoye oil pipeline in the Moscow capital region**. The 400-kilometer pipeline pumps up to **3 million tonnes of paraffin, 2.8 million tonnes of diesel, and 1.6 million tonnes of petrol annually**, supplied from refineries in Ryazan, Nizhny Novgorod, and Moscow regions.

Koltsevoye Oil Pipeline In The Moscow Region. Source: HUR

Also, Ukrainian forces have struck at least half of Russia's 38 major production complexes. Oil processing dropped from **5.4 million barrels per day in July to 5 million** barrels two months later. Strike targets ranged from Krasnodar Krai to Samara and Saratov oblasts, some located over 900 kilometers from Ukrainian-controlled territory.

The International Energy Agency reported drone strikes cut Russia's refining capacity by approximately **5.1 million barrels per day**. Multiple facilities operated at reduced capacity or remained offline for extended periods due to repairs.

Strategic Industrial Targets: Chemical Plants and Munitions Production

While oil refineries remained the primary focus, November saw Ukraine systematically targeting Russia's military-industrial complex with strikes on chemical plants producing rocket fuel and polymer components for military equipment.

On November 4, Ukrainian forces struck **a petrochemical plant in Sterlitamak**. The facility is Russia's leading manufacturer of c**omponents for aviation kerosene, used in the production of aviation fuel.**

On November 12, Ukrainian forces struck the **Stavrolen plant in Budyonnovsk**, which operates a full production cycle for processing hydrocarbon feedstock, producing polymers used in composite materials, structural components, seals, and insulation for various Russian military systems. The facility also reportedly **manufactures components for unmanned aerial vehicles, a key element of Russia's growing reliance on drones.** The attack, conducted by Special Operations Forces, resulted in numerous explosions and fires visible from significant distances.

Also, on November 12, Ukraine hit an **ammunition depot in the temporarily occupied settlement of Novyi Svi**t to reduce ammunition stockpiles supporting Russian frontline operations in eastern Ukraine.

On November 16, **a drone warehouse operated by Rubikon** was targeted, Russia's elite drone unit active in current combat operations, along with a fuel and lubricants pumping station in the same area. The coordinated strike sought to degrade Russia's growing reliance on drone warfare by targeting storage and distribution infrastructure.

Petrochemical Plant In Bashkortostan, Source: Greek City Times

Impact and Economic Consequences

Ukraine's sustained strikes on Russian energy infrastructure throughout 2024-2025 resulted in measurable economic consequences, reducing refining capacity and forcing strategic recalculations in Moscow.

The campaign reduced Russia's refining capacity, according to the **International Energy Agency**, triggering domestic fuel shortages and curbing diesel and jet fuel exports.

Ukrainian drones repeatedly hit **16 major refineries, representing approximately 38% of Russia's nominal refining capacity**, though most plants resumed operations within weeks.

By October, **Russian petrol prices had risen over 10 percent**, with fuel shortages reported in Crimea and other regions. While Russia's substantial surplus refining capacity provides resilience, Mitrova warned that the country is "exhausting its potential."

The Endurance Campaign Matures

November 2025 confirmed the transformation of Ukraine's deep strike campaign into a mature, sustainable strategic effort capable of imposing measurable costs on Russia's war economy through indigenous weapons production at scale. The achievement of 10% refining capacity degradation, while not catastrophic, represents a strategic threshold where economic pressure becomes politically salient, manifesting in regional shortages, price increases, and policy interventions.

The campaign's evolution, beyond an exclusive reliance on Western-supplied precision weapons, to the incorporation of domestically produced Bars, Lyutiy, and Flamingo systems, fundamentally altered the strategic calculus. Ukraine demonstrated the capacity to maintain record-long-range strikes indefinitely through domestic production, even as Western missile stocks face inherent limitations. The cost for long-range drones creates asymmetric advantages against expensive Russian air defenses, enabling mass employment despite high attrition rates.

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The systematic re-engagement strategy, striking the same refineries multiple times to prevent recovery, proved particularly effective. This approach transformed temporary disruptions into sustained capacity reductions, exhausting Russia's ability to rapidly restore operations.

As December approaches, Ukraine has established conditions for winter intensification: proven indigenous weapons at scale, refined operational concepts for multi-system coordination, and measurable economic pressure on Russian domestic markets at the moment of peak winter fuel demand. The fundamental question is no longer whether Ukraine can execute deep strikes, but whether the cumulative economic pressure will compel Russian policy adjustments before Western political dynamics potentially shift support parameters in 2025-2026.
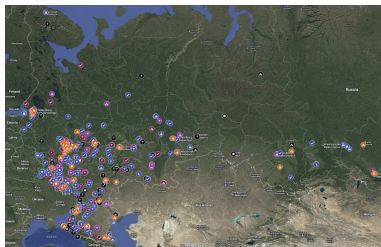
Deep Strike Operations Inside Russia In 2025. Source: Google Maps

A New Threat Layer: Russia Deploys the Shahed-107 in Ukraine

Russian forces have begun deploying the Iranian-made Shahed-107 loitering munition over Ukrainian territory, a **lighter platform specifically engineered for strikes against mid-depth** logistics infrastructure. First publicly unveiled by Iran's Islamic Revolutionary Guard Corps in June 2024, **the system appeared in Ukrainian airspace in November**.

The Shahed-107 employs a high-wing monoplane configuration with approximately three-meter wingspan and X-shaped tail stabilizers. Its carbon fiber fuselage incorporates aluminum structural reinforcements, achieving an optimal strength-to-weight ratio for extended-range operations. Ukrainian analysis reveals a 15-kilogram fragmentation warhead paired with a Chinese DLE 111 two-stroke gasoline engine previously documented in Russian reconnaissance drones.

Remains Of Shahed-101 Drone. Source: Defence Blog

Component analysis confirms multinational supply chains, incorporating electronics from the United States, Switzerland, China, Japan, Taiwan, the Netherlands, and Ireland, demonstrating Iran's continued reliance on Western and Asian technology despite international sanctions.

	Shahed-107	Shahed-136 (Geran-2)
Primary Role	Middle-strike operations (100-300 km behind front lines). Logistics and rear infrastructure	Long-range strikes Saturation attacks
Length	1.6 meters (per latest data) / 2.5 meters (earlier reports)	3.5 meters
Wingspan	3 meters	2.5 meters
Launch weight	~26 kg	~240 kg
Design	High-wing aircraft with X-shaped tail fins	Delta-wing with wingtip rudders
Warhead	8-9 kg high-explosive fragmentation 15 kg (earlier reports)	30-50 kg 90 kg
Speed	~120 km/h (cruise speed)	>185 km/h
Launch Method	Catapult/rail system	Catapult/rail system
Guidance	GPS + Inertial navigation Possibly the CRPA anti-jamming system	GPS + Inertial navigation
First Unveiled	June 2024 (Iran)	September 2022

Table: Comparison Shahed-107 vs Shahed-136

The Shahed-107 occupies a distinct operational niche between tactical FPV drones and strategic strike platforms. Its role centers on targeting supply depots, transit hubs, and ammunition stockpiles positioned 100-300 kilometers behind front lines, addressing a critical gap where the Geran-2's larger signature invites excessive attrition, yet tactical quadcopters lack sufficient range.

The system's reduced radar cross-section and acoustic signature enhance survivability in Ukraine's air defense environment. As defense-industrial cooperation deepens, Ukraine's forces must adapt air defense postures to address an increasingly diverse threat spectrum spanning multiple size classes, speed envelopes, and signature profiles across the operational theater.

# Ukraine Deploys Underwater Torpedo Drones in Black Sea Strike

This month, **The Times revealed details of a covert Ukrainian operation** that took place on September 21, 2025, in which Ukraine introduced a significant new capability in naval warfare by deploying **submersible drone-torpedoes against Russian-controlled gas platforms** in the Black Sea. This marked the first operational use of underwater kamikaze drones equipped with 80-kilogram warheads and long-range navigation systems by Ukrainian forces.

The "Black Sea Legion" unit launched the Katran X1 and X3 surface vessels, which carry FPV drones, loitering munitions, and the new torpedo drones.

The tactical innovation lies in coordinated multi-domain operations. Ukrainian operators launched decoy drones to draw Russian Su-27 and Su-35 fighters away from the actual strike zone. While surface Katran drones circled 100 kilometers to approach from an unexpected vector, underwater torpedoes waited dormant 15 kilometers from targets. A drone-based signal relay maintained command links across extended ranges. The synchronized assault combined torpedo strikes on platform supports, FPV drone attacks on personnel, and loitering munitions destroying radar installations, all controlled through portable command stations using VR headsets and satellite uplinks.

The operation is an example of Ukraine's ability to combine surface, aerial, and underwater drones in coordinated strikes. By introducing submersible torpedo capabilities, Ukraine expanded its reach against hardened offshore

targets and created new challenges for Russian Black Sea defenses, which must now counter threats from above and below the waterline.
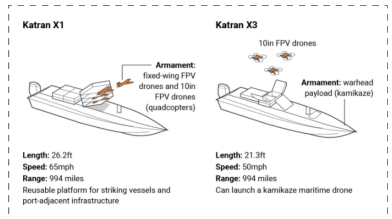
Katran X1 And Katran X3 Naval Drones. Source: United24
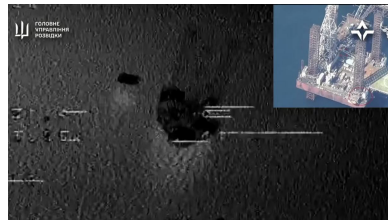
Russian-Controlled Gas Platform In The Black Sea. Source: Ukrainian Military YouTube

# Russia's New Shahed-Launching Sea Drone: Noise for Europe, Warning for U.S.

Russian media report that the **Far Eastern Branch of the Russian Academy of Sciences is developing a new unmanned sea platform capable of launching UAVs**, **most likely Shahed-type drones, directly from the water.** The concept is straightforward: a small surface drone carrying a four-cell sealed launcher for Shahed-

type UAVs, topped with a lightweight canopy hosting antennas, cameras, and navigation gear. Each Shahed would require a solid-fuel booster, allowing launch without a catapult. The remote weapon station, equipped with a 7.62 mm machine gun, complements the system's self-protection suite.

Developers claim the platform is partially stealth-treated with a radar-absorbent mesh and equipped with an autonomous acoustic analysis system that selects when and where to surface. An inertial navigation unit, Doppler log, forward-looking sonar, GNSS receiver, and radio suite located on the drone suggest ambitions for long-duration, low-signature transits. The platform acts similarly to "mothership" drones, enabling Shaheds to appear only a few kilometers from a target coastline, compressing defenders' reaction time.

Against Ukraine or European NATO states, however, the platform adds little. Shaheds, launched from Russian territory or Crimea, already possess sufficient range to reach nearly any European target. A maritime launcher positioned 100–150 km closer does not pose a significant threat. However, the system becomes strategically meaningful in the Pacific Ocean. From Kamchatka, Russia, to the U.S. West Coast is around 7,000 km, which is far beyond the reach of Russia's long-range drones.

A survivable unmanned launch vessel could bridge that gap, quietly transporting UAVs into strike range.
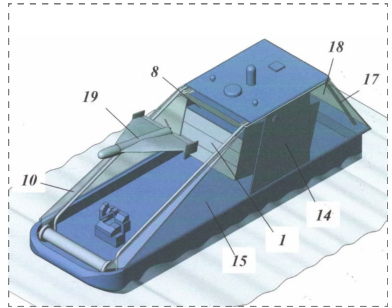
Maritime Drone Carrier Project. Source: Defense Express

Germany Faces Growing Russian and Chinese Intrusions as Space Becomes a Combat Domain

Germany is unveiling its **first-ever space security strategy** this month amid **a dramatic surge in hostile satellite activities**. New investigations reveal far more military interference attempts in space by Russia and China than previously disclosed, with the **Bundeswehr confirming an overall increase in such incidents**.

Russian satellites have been observed repositioning to surveil Bundeswehr facilities training Ukrainian troops, prompting Germany to move exercises indoors. Since April 2023, foreign satellites have repeatedly approached German military satellites, some within 120-140 kilometers, close enough to intercept signals. This summer, **Russia allegedly jammed a German satellite from the ground, causing hours-long communication loss**.

Defense Minister Boris Pistorius confirmed that two German satellites are currently being pursued by Russian reconnaissance satellites.

Germany plans to **invest €35 billion in space projects by 2035** as part of its new strategy. With only a handful of military satellites compared to Russia's ~100 and China's ~150, Germany faces a significant capability gap. The strategy aims to build deterrence and enable Germany to respond to attacks in space, reflecting a broader recognition that space has evolved into a contested military domain requiring urgent investment and vigilance.

From Theory to Threat: China Tests Drone-Based Strategy to Disable Starlink Over Taiwan

A new Chinese study outlines **how Beijing could degrade or fully deny Starlink connectivity over Taiwan using a distributed swarm of electronic-warfare drones**. Researchers from Zhejiang University and the Beijing Institute of Technology simulated Starlink's dynamic satellite mesh over a 12-hour period, concluding that between 1,000 and 2,000 EW-equipped UAVs would be required to form an "electromagnetic shield" dense enough to suppress uplinks across the island.

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Under ideal conditions, the scientists found that **935 synchronized drones, flying at roughly 19 km altitude and spaced 4.8–9.6 km apart, could generate continuous interference even against a constellation of more than 10,000 satellites.** When using cheaper, lower-power jammers, the requirement grows to approximately 2,000 platforms. The study notes that the same architecture could be fielded using high-altitude balloons or manned aircraft, offering a rapidly deployable and relatively inexpensive option for theater-level denial. While the concept remains theoretical, **the research highlights China's intention to expand its toolkit for countering Western technological dominance** in any future conflict.

Russian Forces Roll Out Upgraded 'Shtora' Against Drones

Russian forces have upgraded **the "Shtora" electronic-warfare system to suppress FPV-drone video channels operating in the 6.2–7.2 GHz range**. The system **hijacks an incoming drone's video feed and replaces it with heavily delayed imagery or severe distortion**, effectively blinding the pilot and disabling the platform mid-mission.

According to Serhii Flash, Russian crews monitor unidentified FPV video streams in real time, confirm whether the drone is hostile, and assess its remaining battery before deciding when to activate jamming for maximum operational impact. The method allows them to **time the interference precisely**, disrupting the drone at the point where the operator has minimal room to recover.

Israeli Rada Company Rapidly Updates Radar Systems Based on Ukrainian Military Feedback

Israeli defense manufacturer Rada (now part of Leonardo DRS) is conducting real-time operational updates to **its radar systems based on direct feedback from Ukraine's Defense Forces**, representing an innovative defense cooperation model where combat experience directly shapes technology development.

The primary model in use is the ieMHR (Improved Multi-Mission Hemispheric Radar), which uses an **Active Electronically Scanned Array (AESA)** antenna with advanced signal processing. Despite its compact 58 kg form factor, it offers impressive detection performance: up to 10 km for nano-drones, 45 km for medium drones and helicopters, and up to 100 km for heavy transport aircraft. It is also built for harsh environments, operating reliably in temperatures from −40°C to +55°C.

Although the ieMHR has demonstrated significant value in combat, its cost sits at the premium end of the market compared to emerging Ukrainian alternatives.

It remains to be seen whether Ukraine can strike the right balance between acquiring proven foreign systems and scaling more affordable domestic solutions.

Rada Radar System. Source: Militarnyi

# Leaked Documents Expose Russia's Defense Production Vulnerabilities

InformNapalm and Fenix cyber analytics have breached Russia's Experimental Design Bureau of Motor Engineering (OKBM), revealing **classified documentation on advanced weapons programs and critical manufacturing weaknesses**.

The leaked files expose technical specifications for components in Russia's Tupolev PAK DA next-generation stealth bomber and Sukhoi Su-57 fifth-generation fighter. OKBM develops specialized geared hinges (80RSh-115 and RSh-65) that control weapons bay hydraulic systems in both aircraft, with production timelines classified as state secrets extending through 2027.

OKBM's internal documents confirm **that Russia cannot independently produce parts for advanced aviation systems** and must import high-precision CNC machines, specifically Taiwan-made Hartford and Johnford machines, as well as Serbia-made Grindex grinding equipment. Internal audits explicitly state that aircraft deadlines are being missed due to machine tool shortages resulting from global manufacturers leaving the Russian market.

The breach proves Western sanctions are degrading Russian military production, but also reveals ongoing supply chain vulnerabilities. OKBM was sanctioned by the EU on October 23, 2025; however, the documents show **that Asian and European companies continue to supply critical equipment through third countries**. These revelations provide actionable intelligence for strengthening secondary sanctions to further constrain Russia's advanced weapons manufacturing capabilities.
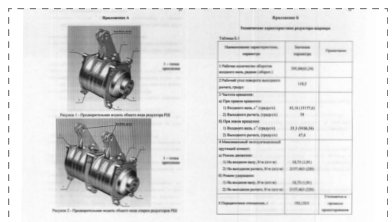
RSh Geared Hinge With Technical Specifications. Source: Inform Napalm

Chinese Target Russian IT Infrastructure in Years-Long Espionage Campaign

Chinese state-linked hackers from APT31 **spent months infiltrating Russian IT companies that serve government agencies** between 2024 and 2025, as Beijing prioritizes intelligence gathering, even against its supposed geopolitical partner. In one case, hackers maintained access since late 2022, patiently extracting confidential information while remaining undetected.

APT31 utilized Russian cloud services, such as Yandex Cloud, to blend their operations with legitimate traffic, hide commands in social media profiles, and strategically target attacks during holidays, when security monitoring was weakened. Custom tools, such as OneDriveDoor and

YaLeak, continuously exfiltrated data through cloud storage, mimicking normal business activities to avoid detection for years.

The APT31 operation against Russian infrastructure ultimately shows that **China operates according to its own strategic calculus**, not partnership obligations. While Beijing and Moscow present a united front on the international stage, this campaign reveals that China treats Russia as it would any other intelligence target, systematically compromising government contractors to extract political, economic, and military insights that serve Chinese interests.

When Russia Exports Its War: What Venezuela's Military Shift Means for Ukraine's Allies

Russia's Military Support to Venezuela

As tensions escalate in the Caribbean, Russia has significantly expanded its military cooperation with Venezuela, providing advanced weaponry, technical expertise, and strategic support to the embattled Maduro regime. This deepening partnership comes amid unprecedented pressure from the United States, which has deployed substantial naval forces to the region and openly discussed potential military action against Caracas.

In early November 2025, **Russia delivered advanced air defense systems to Venezuela**, a significant upgrade to the country's defensive capabilities. According to Alexei Zhuravlev, First Deputy Chairman of Russia's State Duma Defense Committee, Pantsir-S1 and Buk-M2E surface-to-air missile systems were transported to Caracas **aboard Il-76 military transport aircraft**. This represents the first major Russian military shipment to Venezuela in over a decade.

The aircraft is operated by Aviacon Zitotrans, a company with six transport aircraft. The company is **subject to sanctions** from the United States, Canada, and Ukraine due to its ties to Russian military structures. The company has **repeatedly supplied** military equipment to regions where Russian mercenaries, including the Wagner group, were operating.

The Pantsir-S1 is a mobile point-defense system designed to protect key sites from drones, cruise missiles, and low-flying aircraft, with an engagement range of around 20 kilometers. In contrast, the Buk-M2E provides medium-range coverage, offering engagement envelopes of up to 45 kilometers in range and 25 kilometers in altitude. These systems complement Venezuela's existing Russian-made S-300VM air defense batteries and Su-30MK2 fighter jets, which form the backbone of the Venezuelan Air Force.

Ukraine's Defense Intelligence Directorate chief, Lt. Gen. Kyrylo Budanov, confirmed receiving intelligence about the Buk-M2 systems but expressed uncertainty about the Pantsir deliveries. The **timing of these shipments coincides with a dramatic increase in U.S. military presence in the Caribbean**, including the deployment of the aircraft carrier USS Gerald R. Ford.

Buk-M2E Air Defense System In Venezuela. Source: Militarnyi

Russian Military Advisory Mission

Beyond equipment deliveries, Russia maintains a military presence on the ground in Venezuela. Colonel General Oleg Leontievich Makarevich commands the Russian Ministry of Defense's Equator Task Force, consisting of more than **120 troops who are training Venezuelan forces in a wide range of military** disciplines. Their mission encompasses **infantry, unmanned aerial vehicle (UAV), and special forces training,** as well as providing signals intelligence capabilities to Venezuelan forces.

Makarevich's appointment to lead this mission is notable given his controversial history. Putin dismissed him as commander of the Dnipro Group of troops in October 2023, following Ukraine's successful counteroffensive in Kherson. **Ukraine also accuses him of ordering the destruction of the Nova Kakhovka dam in June 2023**, which caused massive flooding and environmental damage.

Intelligence reports suggest that Russia has also deployed elite drone specialists from the **Rubicon special unit to teach Venezuelan force**s how to operate first-person view (FPV) drones, technology that has proven highly effective in the Ukraine conflict.

Destroyed Khakovska Dam, Kherson region, Ukraine 2023. Source: [TWZ](#)

Russian Tanker Seahorse's Erratic Routing Source: [Windward](#)

Energy Sector Cooperation

Russia's support for Venezuela extends beyond military aid to crucial economic partnerships, particularly in the energy sector. In November 2025, Venezuela's National Assembly approved a **[15-year extension of joint ventures](#)** between the state-owned company PDVSA and Roszarubezhneft's unit, Petromost, to operate the Boqueron and Perija oilfields through 2041.

The partnerships **aim to produce approximately 91 million barrels of crude oil, with total investment estimated at $616 million**. Roszarubezhneft, owned by a unit of the Russian Ministry of Economic Development, was established in 2020 and subsequently acquired Venezuelan assets from Rosneft after the United States sanctioned two of Rosneft's units for trading Venezuelan oil.

This energy cooperation has become increasingly critical as **[Venezuela turned to Russia for naphtha diluent after U.S. shipments ceased](#)**. According to commodities-tracking firm Vortexa, **Venezuela imported three times as much Russian naphtha in 2025 as it did in the entire year of 2024**. This diluent is essential for thinning Venezuela's highly viscous Orinoco crude for export.

Maritime Support and Strategic Logistics

Russia has also provided crucial maritime support to Venezuela despite U.S. pressure. In November 2025, the **[Russian-flagged tanker Vasily Lanovoy, sanctioned by the U.S., EU, and UK](#)**, berthed at Venezuela's Jose terminal, carrying approximately 300,000 barrels of Russian naphtha from Ust-Luga.

This delivery came days after another incident involving the **[Russian tanker Seahorse](#)**, which reportedly had its route disrupted by the U.S. destroyer USS Stockdale as it sailed from Cuba back to Venezuela. The destroyer positioned itself in the vessel's path, forcing the tanker to make multiple abrupt course changes. This unprecedented move raised questions about potential future U.S. interdiction of Russia-Venezuela maritime commerce.

Threats of Further Escalation

Russian officials have suggested that **military support could expand significantly if tensions continue to escalate**. Zhuravlev stated that **Russia reserves the right to supply Venezuela with advanced weapons, including [Kalibr cruise missiles or even Oreshnik medium-range ballistic missiles](#)**. Such a delivery would represent an unprecedented escalation not seen since the Cuban Missile Crisis.

The Oreshnik Missile Range Source: [Army Recognition](#)

The Oreshnik system, which Putin claims entered full service in 2025, is reportedly capable of carrying both conventional and nuclear warheads, with a range estimated at **4,000 kilometers, sufficient to strike targets throughout most of the continental United States if deployed in Venezuela**. While such a transfer appears unlikely, the threat itself serves as a powerful deterrent signal to Washington.

Strategic Vulnerabilities

Despite this military support, analysts question Russia's ability to substantially protect Venezuela from U.S. pressure. **With Russian forces stretched thin by the war in Ukraine, Moscow's capacity for meaningful intervention in Latin America is limited.** As James Story, a former U.S. ambassador to Venezuela, explained, Russia views Venezuela as **"an economy of force mission,"** an opportunistic relationship that requires minimal resources but "bedevils the United States."

A Venezuelan Soldier Holding A Russian-Made Igla-S Portable Surface-To-Air Missile. Source: PressTV

The condition of Venezuela's Russian-supplied military equipment also remains uncertain. A former U.S. official noted that while Venezuela acquired sophisticated anti-aircraft systems over the years, "it's not known what the status of those systems is or how they've been maintained", a critical factor in assessing their actual combat readiness.

Venezuela Learning from Russian Military Experience

The Russia-Venezuela military partnership is an example of how **Moscow transfers battlefield knowledge from Ukraine to allied regimes worldwide**. Venezuela directly benefits from Russia's combat experience through Rubicon drone unit specialists teaching FPV operations and Makarevich's team providing training that incorporates real-world adaptations from the ongoing war. This shows Russia's willingness to export destabilizing capabilities to adversaries of Ukraine-supporting nations, with potential deliveries of cruise missiles or Oreshnik systems serving as strategic leverage. At the same time, 15-year oil joint ventures cement long-term influence. **Combat-proven technologies from Ukraine will spread to other theaters through Russian missions, and Ukrainian allies should be prepared to counter them, learning from Ukraine's experience. For the United States, maintaining Ukraine's strength is the most effective way to contain Russia's global ambitions**. Every Russian tactic exported is enabled by Moscow's ability to sustain its war effort in Ukraine. Preventing Russia from projecting military power into the Caribbean begins with **ensuring its forces remain constrained, overextended, and weakened on the Ukrainian front**. Supporting Kyiv is therefore not only an investment in European security but a direct safeguard against Russian escalation in the Western Hemisphere.

- Army Inform. "Трьох поранених за ніч врятували наземними дронами «Хартія» на Харківщині". Army Inform, 2025. Link

- Army Recognition. "Russia Fields Courier UGV Armed With Shmel Thermobaric Rocket Module on the Ukraine Front". Army Recognition, 2025. Link

- Army Recognition. "Venezuela Turns to Russia for Ballistic Missiles Able to Target U.S. Assets If Crisis Grows". Army Recognition, 2025. Link

- Army Technology. "Growing Role of UGVs". Army Technology, 2025. Link

- Aviospace. "Russian Il-76 Cargo Plane Lands in Caracas as US–Venezuela Tensions Escalate". Aviospace, 2025. Link

- Breaking Defence. "France Announces Almost $5B in New Military Space Funding". Breaking Defence, 2025. Link

- Business Insider. "A Senior Russian Lawmaker Says Moscow Just Delivered New Air Defense Systems to Venezuela". Business Insider, 2025. Link

- Daily Mail. "Putin 'sends top general to Venezuela along with troops tasked with training up President Maduro's forces' as US considers attacking South American country". Daily Mail, 2025. Link

- Defence Blog. "New Iranian Drone Used by Russia Against Ukrainian Troops." Defence Blog, 2025. Link

- Defence Blog. "Ukraine Blew Up Rare Arctic Tor-M2DT in Crimea". Defence Blog, 2025. Link

- Defence Express. "Armed Forces of Ukraine Deploy Israeli-Made Radar to Detect Drones and Aircraft: Details of the RADA ieMHR Capabilities". Defence Express, 2025. Link

- Defence Express. "The Russians Want to Launch Shaheds From Naval Drones." Defence Express, 2025. Link

- Defence News. "Ukraine to Deploy 30,000 Unmanned Ground Vehicles by 2026". Army Technology, 2025. Link

- Dev.UA. "НРК MAUL із бронекапсулою успішно евакуював пораненого українського військового". Dev.UA, 2025. Link

- Euromaidan Press. "Command Center, Drone Depot, Three Air Defense Systems – Ukraine's Navy Guts Saky Airfield in Joint Strike (VIDEO, MAP)". Euromaidan Press, 2025. Link

- Google Cloud. "NATO and Google Cloud Sign Multi-Million Dollar Deal for AI-Enabled Sovereign Cloud". Google Cloud, 2025. Link

- HUR. "Майстри ГУР знищили чергові об'єкти ППО загарбників у Криму — ексклюзивне відео та деталі операції". HUR, 2025. Link

- Inform Napalm. "OKBMLeaks: Classified Documents From a Russian Components Manufacturer for Su-57 Fighter and PAK DA Poslannik Next-Gen Bomber". Inform Napalm, 2025. Link

- Instagram @Ukrainciaga.com. "Footage Reportedly Shows Russian Forces Employing Thermite-Equipped Drones to Burn Through the Anti-Drone Nets". Instagram, 2025. Link

- Israel Hayom. "Report: Russia Destroys Israeli-Made Radar in Ukraine". Israel Hayom, 2025. Link

- Leonardo DRS. "Improved & Enhanced Multi-Mission Hemispheric Radar (ieMHR)". Leonardo DRS, 2025. Link

- Mediavector. "Hacking an Il-76 pilot revealed weapons supply schemes to Russia from Iran and Africa". Mediavector, 2025. Link

- Militarnyi. "Flight Range of 300 km and Warhead of 15 kg: GUR Revealed the Components of the Iranian Shahed-107 Drone". Militarnyi, 2025. Link

- Militarnyi. "Shotgun Drone of Black Arrow Unit Destroys Enemy FPV Drone". Militarnyi, 2025. Link

- Militarnyi. "Спецоперація у Криму: українські розвідники ліквідували Ка-27 та кілька РЛС". Militarnyi, 2025. Link

- Militarnyi. "Ukrainian Forces Launch Combined Strike in Crimea: Air Defense and UAV Depots Attacked". Militarnyi, 2025. Link

- Militarnyi. "Venezuela Got Russia's Pantsir-S1 System – But Who's Operating Them". Militarnyi, 2025. Link

- Norwegian Helsinki Committee. "The man who blew up the Kakhovka dam in Ukraine". NHC, 2025. Link

- Office of Foreign Assets Control. "Sanctions List Search". OFAC, 2025. Link

- Pravda. "Defence Intelligence of Ukraine Hits More Russian Air Defences in Occupied Crimea". Pravda, 2025. Link

- PressTV. "Venezuela Launches Massive Military Mobilization as US Aircraft Carrier Enters Caribbean". PressTV, 2025. Link

- Reuters. "Venezuela Approves 15-Year Extension of Russia-Linked Oil Joint Ventures". Reuters, 2025. Link

- Sandhills Express. "Robot Rescues Ukrainian Soldier Trapped 33 Days Behind Enemy Lines". Sandhills Express, 2025. Link

- SLDinfo. "Ukraine's Robot Army: The Rise of Unmanned Ground Vehicles in Modern Warfare". SLDinfo, 2025. Link

- Tom's Hardware. "China Simulated a Starlink Blockade Over Taiwan That Uses Around 2,000 Drones With Jammers to Create an Electromagnetic Shield". Tom's Hardware, 2025. Link

- The Defence Post. "Frontline Insight Drives Israel's RADA Radar Upgrades for Ukraine". The Defence Post, 2025. **Link**

- The Guardian. "Russia Increasingly Targeting Trains as Attacks on Ukraine's Rail Network Intensify". The Guardian, 2025. **Link**

- The Hackers News. "China-Linked APT31 Launches Stealthy Cyberattacks on Russian IT Using Cloud Services". The Hackers News, 2025. **Link**

- The Maritime Executive. "Sanctioned Tanker Reaches Venezuela After Being Tracked by US Destroyer". The Maritime Executive, 2025. **Link**

- The Moscow Times. "Moscow Risks Losing a Key Ally in Latin America as Trump Ramps Up Pressure on Venezuela's Maduro". The Moscow Times, 2025. **Link**

- The Moscow Times. "Ulyanovsk Region Imposes First Permanent Mobile Internet Blackout". The Moscow Times, 2025. **Link**

- The Times. "First They Blind, Then They Burn: The Drones Thwarting Russia in Black Sea". The Times, 2025. **Link**

- TWZ. "Russian General in Venezuela Leading Advisory Mission: Ukraine's Intel Chief". TWZ, 2025. **Link**

- Telegram @serhii_flash. "All checkpoints are closed with nets" Telegram, 2025. **Link**

- Windward. "Russia Tanker Reaches Venezuela After Earlier Ship's Encounter With U.S. Warship". Windward, 2025. **Link**

- Ukrainian Navy. "Військово-Морські Сили ЗС України невпинно зменшують боєздатність ворога". Ukrainian Navy, 2025. **Link**

- UNITED24 Media. "Inside Ukraine's Daring Rescue: Robot Saves Soldier After 33 Days Behind Enemy Lines". UNITED24 Media, 2025. **Link**

- UNITED24 Media. "Russia Deploys Ultra-Light Shahed-107 Drones Built for Deep Logistics Strikes". UNITED24 Media, 2025. **Link**

- UNITED24 Media. "Russia Imposes Indefinite Mobile Internet Blackout in Ulyanovsk Region Until End of War". UNITED24 Media, 2025. **Link**

- UNITED24 Media. "Ukraine's Gun-Wielding Robot Holds Frontline Solo for Over a Month". UNITED24 Media, 2025. **Link**

- UNITED24 Media. "Ukraine Hits Russian Black Sea Gas Platforms With Underwater Torpedo Drones". UNITED24 Media, 2025. **Link**

- Volna Media. "An Underwater Drone was Created in Russia, Capable of Delivering and Launching UAVs". Volna Media, 2025. **Link**

- YouTube. "A Ukrainian Remote Controlled .50 Cal Unmanned Ground Vehicle." YouTube, 2025. **Link**

- The Defender. "Black Mirror #32. Micro-drones for urban environments, UGVs for minelaying, a new EW system and other Russian miltech innovations". The Defender, 2025. **Link**

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○ **Analytics:** Advancing understanding of modern warfare and doctrine

○ **Advocacy:** Aligning Ukrainian, U.S., and international decision-makers

○ **Defense Tech:** Enabling integration of critical technologies into combat operations

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