

Death by Algorithm: Autonomous Drones in the Russia-Ukraine War

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Introduction

Four and a half years into Russia's full-scale invasion into Ukraine, the modern battlefield has been revolutionized by remote warfare, rapid drone development and application of artificial intelligence in large- and small-scale systems. With technological advancement in drone operations providing the greatest advantage, the necessity of innovation has driven this war into a full-fledged technological arms race, with field-test feedback and development cycles being completed within weeks.² The greatest requirement in this regard is speed and precision: how fast can the kill chain be completed, how much can it be compressed, and how far it can be automated. Machine vision, the use of computer algorithms and technologies to interpret and understand images, has already been in active combat to identify objects and threats for years now. But with the increasing integration of AI model trained on years of military footage, the process of target identification, prioritization and engagement has become alarmingly automated. The development of cheap, commercially available small form-factor AI computers also contributes to the rising wave of autonomous drones, which require minimal human oversight in a near fly-and-forget solution.

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² Ribakova, Elina, and Lucas Risinger. "Europe's Untapped Arsenal." Foreign Affairs, April 2, 2026.
<https://www.foreignaffairs.com/europes-untapped-arsenal>.

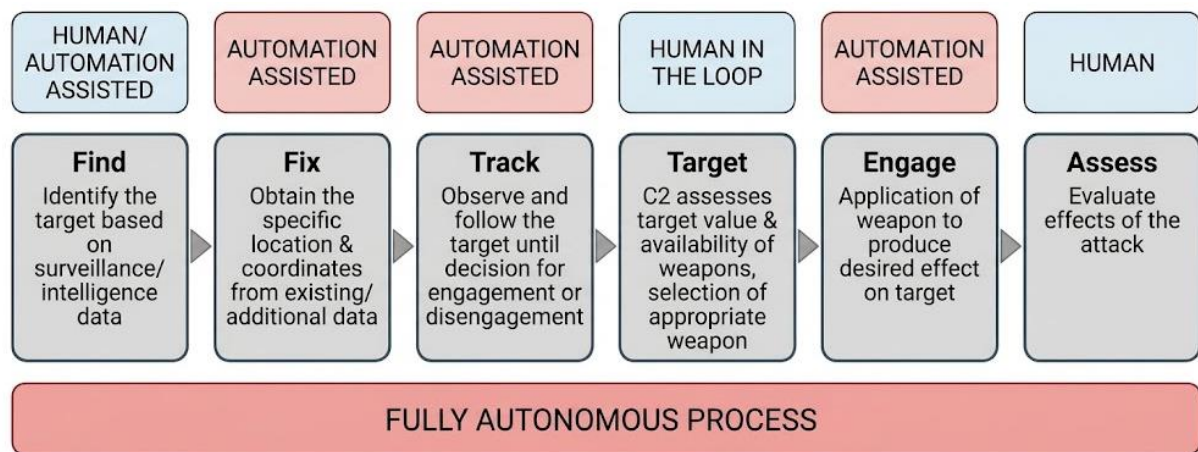


Fig. Current & Future State of Kill chain automation in the F2T2EA process

Source: Researchers own metric based on the F2E2TA model ³

Drones now account for nearly 75-85% of frontline casualties.⁴ And constant innovation and counter-innovation cycles leave no side with a definite sustainable advantage, rather raising the cost and complexity of war.

Evolution of Unmanned Warfare in the Russo-Ukrainian War

Drones have been in use in the Ukrainian theatre much before the full-scale conflict began. Russia put the Orlan-10 to use in Donbas mid-2014, albeit only for artillery targeting and electronic warfare (EW) measures.⁵ Ukraine also used DJI-type drones for reconnaissance until it shifted to the Bayraktar TB2 platform in 2019.⁶ The TB2's first confirmed combat use came in October 2021, against a separatist artillery position in Donetsk⁷ – indicating mainstream drone warfare even before Russia's 'Special Military Operation'.

After the invasion, the TB2 platform saw immediate success in the early months of 2022, partly because Russian air defense and electronic warfare was still disorganized. By autumn 2023 Ukrainian officers and Western analysts described it as increasingly obsolete for strike

³ Benitez, Mike. "It's About Time: The Pressing Need to Evolve the Kill Chain." War on the Rocks, May 17, 2017. <https://warontherocks.com/its-about-time-the-pressing-need-to-evolve-the-kill-chain/>.

⁴ Horowitz, Michael C, Erin D Dumbacher, and Lauren Kahn. "How Ukraine's Drone Innovation Reversed Russia's Momentum.", Council on Foreign Relations, June 12, 2026. <https://www.cfr.org/articles/how-ukraines-drone-innovation-reversed-russias-momentum>.

⁵ Medium. "Ukraine Downs Russian Drone Near Donetsk.", May 4, 2017. <https://medium.com/dfirlab/ukraine-downs-russian-drone-near-donetsk-2fb5c0789f63>.

⁶ Jeyhun Aliyev. "Ukraine Receives UAVs Purchased From Turkey: President.", Anadolu Ajansı, March 7, 2019. <https://www.aa.com.tr/en/turkey/ukraine-receives-uavs-purchased-from-turkey-president/1412104>.

⁷ Lapaiev, Yuri. "First Strike: The Political Consequences of Ukraine's Bayraktar Drone Attack on Russia-Backed Forces in Donbas." Jamestown, November 10, 2021. <https://jamestown.org/first-strike-the-political-consequences-of-ukraines-bayraktar-drone-attack-on-russia-backed-forces-in-donbas/>.

missions.⁸ Russia, on the other hand, increased the use of their Geran and Lancet platforms substantially, citing massive strikes on Ukrainian cities since 2024. Russian drone attacks and EW jamming pushed Ukrainian forces into a deepening asymmetry of aerial firepower, with 2023 Ukrainian figures claiming losses of nearly 10,000 drones a month to jamming.⁹

Aerial attacks on Ukraine

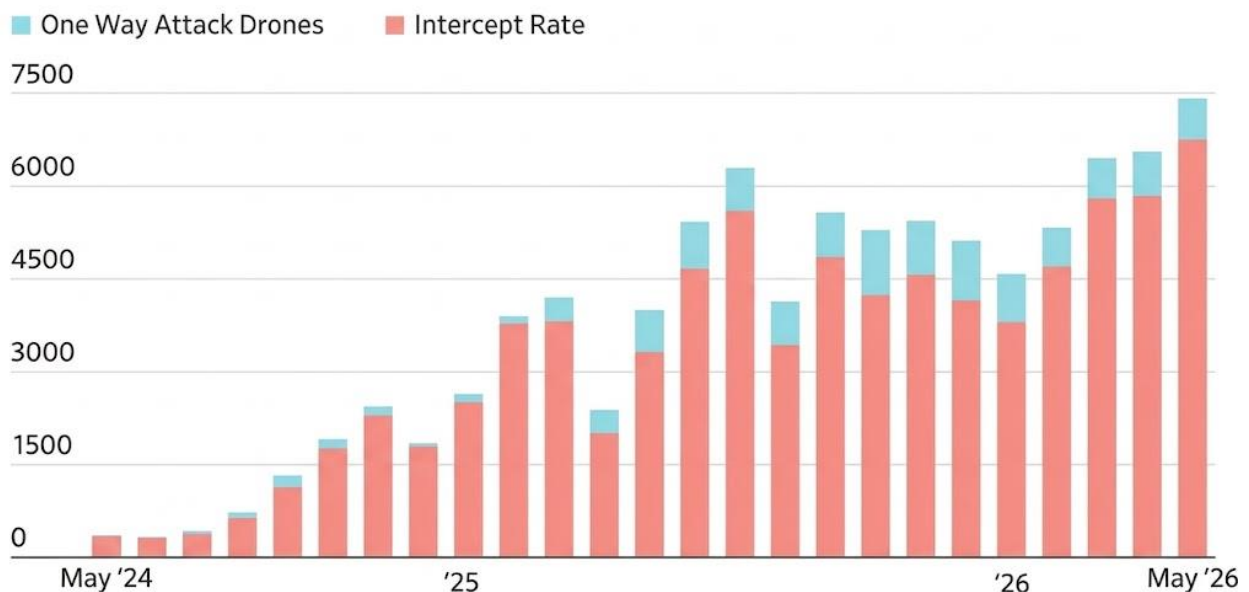


Fig. Increase of Aerial Drone Attacks in Ukraine 2024-2026

Source: Wall Street Journal (Data from Centre for Information Resilience)¹⁰

The EW jamming problem was innovatively handled into two ways. The first was the use of fiber-optic data cables to attach a physical connection, avoiding radio frequencies in total. This innovation is nothing new, as wire-guided missiles have been in use since the cold war era. Although highly effective in the short-range frontline kill zone, wire-guidance suffered from a hard altitude/range cap and well as reduced maneuverability. The second workaround utilized a much more technologically advanced solution than physical tethers, with on-board machine vision tracking and guiding the attack by itself in the last 500 to 100 meters. Low-cost autonomous terminal guidance modules such as the TFL-1 add only 10–20% to the total cost

⁸ Khomenko, Ivan. "Ukraine's Bayraktar TB2 Returns to Combat — Why Now, and Where Has It Been? The Full Story of a Wartime Legend." UNITED24 Media, June 26, 2025. <https://united24media.com/latest-news/ukraines-bayraktar-tb2-returns-to-combat-why-now-and-where-has-it-been-the-full-story-of-a-wartime-legend-9433>.

⁹ Jankowicz, Mia. "Ukraine Is Losing 10,000 Drones a Month to Russian Electronic-Warfare Systems That Send Fake Signals and Screw With Their Navigation, Researchers Say." Business Insider, May 22, 2023. <https://www.businessinsider.com/ukraine-losing-10000-drones-month-russia-electronic-warfare-rusi-report-2023-5>.

¹⁰ The Wall Street Journal. How Ukraine Is Stopping 90% of Russia's Drones (Exclusive). YouTube, 2026. Video. <https://www.youtube.com/watch?v=zARxLdZUa5I>.

of a standard FPV drone while increasing mission success rates by 2 to 5 times,¹¹ taking the first step towards autonomous warfare.



Image: TFL-1 equipped FPV Drone performing Terminal Guidance

Source: Yaroslav Azhnyuk on X¹²

The rising cost and over-reliance on foreign components pushed manufacturers and innovators into producing low-cost, disposable strike drones throughout 2023. The large-scale production of cheap kamikaze-style FPV (first person view) attack drones revolutionized the war for Ukraine. Off-the-shelf drones for hobbyist and cinematographers were retrofitted with grenades and explosives to become lethal weapons for personnel and armor alike. The Ukrainian MoD and foreign investment also proliferated this advancement, with the number of domestic drone manufacturers jumping from 7 to 500 in the last 4 years, with 90 percent of total FPV drone output coming from the private sector.¹³ Rapid innovation cycles (fielding precise mass systems faster than Russia can develop effective countermeasures) and a form of ‘Drone Keynesianism’ by procuring drones from competing private firms instead of central production has given Ukraine the significant upper hand in numbers game for drone warfare.

¹¹ Litnarovych, Vlad. “Ukrainian AI Drone Maker Reveals Game-Changing TFL-1 Autonomous Drone Already Hitting Russian Targets.” UNITED24 Media, July 15, 2025. <https://united24media.com/latest-news/ukrainian-ai-drone-maker-reveals-game-changing-tfl-1-autonomous-drone-already-hitting-russian-targets-9874>.

¹² Azhnyuk, Yaroslav. “This Is How Autonomy Works at Night.” X, July 28, 2026. Post. <https://x.com/YaroslavAzhnyuk/status/2082106873671532783>.

¹³ Bidochko, Lesia. “How Ukraine Became a Drone Superpower.” Just Security, June 2026. <https://www.justsecurity.org/138164/ukraine-drone-superpower/>.

Drone innovation has also spearheaded the defensive front, that too at a much lower cost. Ukraine's small-scale air defense doctrine (Mala PPO) incorporates interceptor drones with regular automated AA machine guns and mobile fire units,¹⁴ with low-cost FPV interceptors such as the P1-SUN accounting for 70% of Shahed intercepts over Kyiv in February alone.¹⁵ The Iran war has shown the perils of a high-end, slow production approach, with rapid stockpile depletion the main cause of vulnerability for the US's middle eastern allies. Ukrainian firms are producing over 1,000 interceptor drones a day, costing between \$1,000 to \$2,500, and doing the same job of a \$3 million US-made patriot interceptor missile, without the volatility of western agreements.¹⁶



Image: SkyFall's P1-SUN Interceptor Drone operated by an FPV Pilot

Source: Getty Images

Drones have also been used to strike into the heart of Russia's military prowess. In the past year, long range UAVs and cruise missiles have repeatedly targeted and damaged critical military & logistics infrastructure deep into Russian territory, with a proven range of more than

¹⁴ Rzhetska, Lilia. "Small Air Defense: What Is It and Can Ukraine Export Experience?" Dw.Com, Deutsche Welle, March 24, 2026. <https://www.dw.com/uk/mala-ppo-so-ce-take-i-ci-moze-ukraina-eksportuvati-dosvid/a-76514603>.

¹⁵ Bidochko, Lesia. "How Ukraine Became a Drone Superpower." Just Security, June 2026.

¹⁶ Ribakova, Elina, and Lucas Risinger. "Europe's Untapped Arsenal." Foreign Affairs, April 2, 2026.

3,000 km inside the border.¹⁷ More regular strikes behind the traditional drone kill zone requires Russia to redirect resources from the frontline to protect supply lines logistic bases at the rear.

However, the impact of autonomous warfare is not limited to skies. Unmanned Ground Vehicles (UGVs) have begun to assist and replace infantry on Ukraine's front lines, conducting 'fully robotic defensive operations'.¹⁸ Currently near 80% of front-line logistics is currently handled by remote-operated ground robots, handling ammo resupplies, CASEVAC, landmine placement as well as attacking Russian positions.¹⁹ The MoD plans to bring it up to 100%, contracting 25,000 new robots for the first half of 2026.²⁰ In the sea, Unmanned Surface Vehicles (USVs) and Autonomous Underwater Vehicles (AUVs) have destroyed or disabled one third of the Russian fleet in the Black Sea,²¹ keeping the rest confined at Novorossiysk port. Platforms such as the Magura V7, Lilia and Sea Baby equipped with gyro-stabilized machine guns, heatseeking missiles and drone deployment modules allow Ukraine to keep the Russian Navy out of open waters and protect its crucial grain exports. Russia has also followed suit to revamp its USV capabilities to counter Ukrainian dominance.²²



Image: DevDroid TW 12.7 UGV

Source: DevDroid



Image: Sea Baby USV

Source: AP Photos

¹⁷ Wolf, Marthe van der. "How Ukraine's Deepest Attack in Russia, on Arctic Gas, Signals New Reach." Al Jazeera, September 10, 2026. <https://www.aljazeera.com/news/2026/9/10/how-ukraines-deepest-attack-in-russia-on-arctic-gas-signals-new-reach>.

¹⁸ Tucker, Patrick. "A Ukrainian Ground Robot Defended a Position From Russian Assault for Six Weeks - Defense One." Defenseone.Com, 2026. <https://www.defenseone.com/technology/2026/05/ukrainian-ground-robot-defended-position-russian-assault-six-weeks/413642/>.

¹⁹ Ibid

²⁰ Baker, Sinéad. "Ukraine Is Buying 25,000 War Robots With a Focus on Front-Line Logistics." Business Insider, April 20, 2026. <https://www.businessinsider.com/ukraine-buying-war-robots-aims-to-automate-front-line-logistics-2026-4>.

²¹ AP News. "Ukrainian Navy Says a Third of Russian Warships in the Black Sea Have Been Destroyed or Disabled." March 26, 2024. <https://apnews.com/article/russia-ukraine-war-black-sea-navy-warships-8f614d856370a564ffec1e49f5313343>.

²² Manuel, Rojof. "Russia Builds Crimea Base to Launch Naval Drones at Scale." The Drone Front, September 4, 2026. <https://dronefront.com/russia-crimea-naval-drones/>.

The Rise of Fully Autonomous Weapons

Till date, the use of artificial intelligence, machine learning or neural networks in warfare have been designed in purpose to aid and assist the soldier in searching through extensive data or imagery, tracking selected objects or guidance support for warheads— all in order to compliment the actions of the human pilot or weapons controller. However, the race for innovation has always run the risk destructive powers beyond human controls, and now that power has very well been delegated from human to algorithm. On July 6th, a Russian Molniya drone attacked a gas station in Zaporizhzhia, killing 3 civilians in the process.²³ Analysis of the debris revealed that the drone had no communication antennas, and was operated solely by a Nvidia Jetson Orin module, a consumer-grade AI embedded minicomputer typically used by students and developers. Military officials and experts concluded that the drone was completely autonomous and executed the strike decision by its own, which was trained in virtual reality to track specific objects (in this case a propane tank). The Center for Strategic and International Studies is calling this the first documented case of civilian casualties by an autonomous AI system.²⁴



Fully Autonomous Version of the Russian ‘Molniya’ Drone

Source: Nicole Tung/New York Times

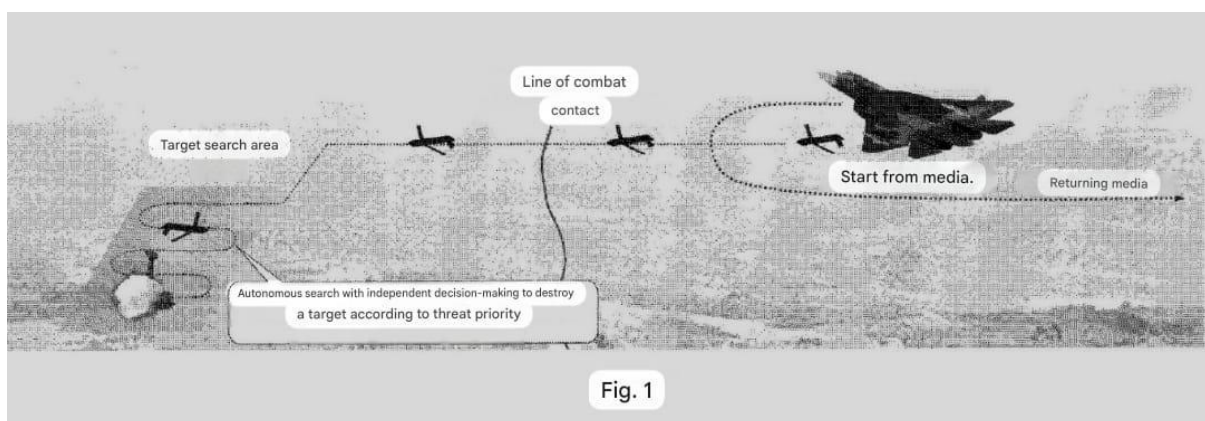
²³ Kramer, Andrew E. “A Drone Killed Three Ukrainians. It Was Guided Entirely by A.I.” The New York Times, August 24, 2026. <https://www.nytimes.com/2026/08/24/world/europe/russia-drones-autonomous-ai-kill-ukraine-war.html>.

²⁴ Ibid

Russia has been reported to be experimenting with AI modules since 2025 on their V2U drone platform, using western & Chinese hardware to train the YOLOv5 neural network,²⁵ which allows visual recognition of vehicles, infrastructure, and human activity based on contrast, shape, and motion rather than semantic classification.

More intriguing is the displayed capability of swarming – nearby drones communicating with each other to coordinate attacks through visual identification by markings and patterns on the drone's body.²⁶ These markings allow algorithms to detect and associate each drone as a separate node in a swarm, allowing coordinated targeting in EW-contested environments.

This same computer has also been found in Russia's S-71M monochrome, a low-observable cruise missile with a claimed range of 350 kilometers, designed as the first long-range strike weapon capable of “autonomously searching and independently deciding to destroy a target according to its threat priority”.²⁷ Although having very limited use in the war, it has already been publicly displayed by Russia's United Aircraft Corporation at the El Alamein International Airshow in Egypt last week.²⁸



Patent RU2816326C1, issued on 28/3/2024, to Russia's United Aircraft Corporation (Translated)

Source: Defense Express

²⁵ Iryna Levytska. “Russia Has Overtaken Ukraine in the Large-Scale Use of AI on Board Drones, Radio Tech Expert Says – Photo.” *Ukrainska Pravda*, September 4, 2026. <https://www.pravda.com.ua/eng/news/2026/09/04/8051922/>.

²⁶ Bondar, Kateryna. “How Russia Is Building a Sovereign Drone Ecosystem for AI-Driven Autonomy.” Center for Strategic & International Studies, 2026. <https://www.csis.org/analysis/how-russia-building-sovereign-drone-ecosystem-ai-driven-autonomy>.

²⁷ Defense Express. “What Is Russia's S-71M Monochrome Missile, Already Used Against Ukraine, Why Is It Threat No Less Serious Than Ballistic Missiles?” *Defence-Ua.Com*, 2020. https://en.defence-ua.com/weapon_and_tech/what_is_russias_s_71m_monochrome_missile_already_used_against_ukraine_why_is_it_threat_no_less_serious_than_ballistic_missiles-19436.html.

²⁸ Pavlo Bashynskyi. “Russia Presented the S-71M and S-71K Missiles in Egypt.” *Ukrainian National News (UNN)*, September 9, 2026. <https://unn.ua/en/news/russia-presented-the-s-71m-and-s-71k-missiles-in-egypt>.



Autonomous Cruise Missile S-71M 'Monokhrom' displayed at the El Alamein International Airshow

Source: Martin Rosenkranz/Militär Aktuell

Ukraine has also been testing self-targeting A.I for the past several months, reportedly targeting fuel storage sites and military equipment in Crimea using entirely autonomous systems.²⁹ But experts warn Russia has taken the lead in large-scale implementation of autonomous AI capabilities onboard drones,³⁰ pushing towards a uncertain future which blurs the distinction between human and algorithm-controlled warfare.

The Good, the Bad and the Uncertain

The greatest strength of autonomous systems has been its ability to reduce the time to act in any given scenario. Machine vision and AI targeting has transformed days and weeks of traditional reconnaissance into a matter of minutes. Also, automation-assisted command and control processes have brought unparalleled speed to warfare, with AI powered battlefield management systems closing the gap between high-level theater-wide strategic command and tactical ground implementations in real time.³¹

It also greatly reduces the human cost of war. Uncrewed vehicles and drones on the front lines have reduced human casualties for both sides of the war, with critical access to munitions,

²⁹ Kramer, Andrew E. "A Drone Killed Three Ukrainians. It Was Guided Entirely by A.I." The New York Times, August 24, 2026

³⁰ Iryna Levytska. "Russia Has Overtaken Ukraine in the Large-Scale Use of AI on Board Drones, Radio Tech Expert Says – Photo." Ukrainska Pravda, September 4, 2026

³¹ Kirichenko, David. "The Heart of War: Ukraine's Key Battlefield System." Center for European Policy Analysis, March 16, 2026. <https://cepa.org/article/the-heart-of-war-ukraines-key-battlefield-system/>.

rations, resupplies and evacuations done by UGVs instead of putting soldiers at greater risk.³² Ukrainian remote ground assault teams have also attacked and captured Russian positions, forcing Russian soldiers to surrender to robots.³³ Reports show that such assaults done by 164 operators have achieved comparable gains of 2300 infantrymen, half of whom would have been dead or injured in such operations.³⁴ At the same time, defense industrialists have championed autonomous drones' freedom from the physiological needs of human soldiers critical in a wartime scenario. The building fatigue of a protracted frontline battle causes greater human error, which will be minimized by a computerized kill chain, reducing the overall number of mistakes in the battlefield.³⁵

However, the growing use and race towards fully autonomous weapons create greater concern over how we control warfare and humanity as a whole. Although the compression of the kill chain is seen as an operational advantage to reduce the time to act, the pursuit of speed on the battlefield has come at the expense of human deliberation, subjecting the value of human life to an algorithmic function. This dehumanization is not restricted to soldiers on ground, but as seen in Zaporizhzhia, also marking civilian collateral deaths into mere data points.

AI will also inadvertently reduce the threshold for conflict in small- and large-scale scenarios alike. The human body bag has been the greatest deterrent for war for centuries, and in absence of such, the use of unmanned drones and robots will only make it easier to justify the political costs of war. At the same time, rapid innovation and mass production of highly-destructive yet affordable drones also reduce the cost of inflicting harm both financially and operationally, making it easier for armies to engage with unprecedented force projections.

A larger weapons base with faster targeting systems will also push towards faster execution, but such speeds may create a situation where targets are eliminated faster than threats are confirmed. AI models of today are built to recognize targets and, based on set parameters, decide whether to those are to be engaged or not. But the continuous search for threats often overlooks the actual assessment, turning it into a pipeline of threat production. Researchers

³² DW News. Ukraine-War: How Is AI Transforming the Battlefield? YouTube, 2026. Video. <https://www.youtube.com/watch?v=31GIHv5FZ3k>.

³³ Reynolds, James C. "Russian Soldiers Surrendered to Ukrainian Assault Using Only Unmanned Robots, Says Zelensky." The Independent, April 15, 2026. <https://www.independent.co.uk/news/world/europe/russia-ukraine-robot-soldiers-drone-army-zelensky-b2957813.html>.

³⁴ CNN. Russia Is Being Beaten by Robots in Ukraine. YouTube, 2026. Video. https://www.youtube.com/watch?v=_9GkUkIaOno.

³⁵ BBC World Service. Will AI Robots on the Frontline Mark the End of Human Soldiers? YouTube, 2026. Video. <https://www.youtube.com/watch?v=l-XpuKcIIv8>.

suggest that militaries try to sustain this pipeline and “not run out of targets”,³⁶ inherently subverting the concept of discriminatory warfare. Such instances have already been seen in Israel’s use of ‘Lavender’, an AI program used to generate targets for assassination in the Gaza strip, which was used to identify 37,000 potential targets based on their apparent links to Hamas. The indiscriminate killing of Palestinian civilians in the early months of the conflict has been directly linked to such software.³⁷

Even with such uncertainty, the speed at which great powers have incorporated AI into mainstream warfare is a matter of concern. The United States have been trying to bring AI capabilities to warfighters since 2017 with the inception of ‘Project Maven’, which has seen tremendous growth at the hands of Palantir and other frontier AI companies, reportedly used for operations in Venezuela and Iran.³⁸ China’s domestic AI advancements are equally concerning, built around a doctrine shifting from “informatized” (network-centric) to “intelligentized” (AI-led) warfare.³⁹ European states such as France, Germany and the UK have already invested heavily in military AI technology through direct investments and government contracts with Ukraine for technology and data-sharing.⁴⁰ This is a classical security dilemma supercharged by constant innovation in autonomous technology, where no state will likely hit the brakes for humanitarian concern when put above state interest.

The ‘robot-on-robot’ battlefield is already starkly visible, commonly in the air and more recently on the sea.⁴¹ The use of AI already raises the stakes for unwanted escalation, and full autonomy will only make it easier to start conflicts. Military commanders have to rely on the autonomous weapon’s predictability and reliability to avoid mistakes.⁴² A trained soldier with given instructions will advance to his objective exercising caution and conscience, the same level of confidence cannot be attributed to the technology of our time. Vasily Arkhipov prevented nuclear armageddon in 1962 by vetoing two other officers thanks to his critical

³⁶ DW News. Ukraine Is Now the World’s AI War Lab. YouTube, 2026. Video.

<https://www.youtube.com/watch?v=Gfqdf4JFErU>.

³⁷ Abraham, Yuval. “‘Lavender’: The AI Machine Directing Israel’s Bombing Spree in Gaza.” +972 Magazine, April 3, 2024. <https://www.972mag.com/lavender-ai-israeli-army-gaza/>.

³⁸ Mande, Matt, and Gregory C. Allen. “What Is Maven Smart System, and What Does It Do?” Center for Strategic and International Studies, June 9, 2026. <https://www.csis.org/analysis/what-maven-smart-system-and-what-does-it-do>.

³⁹ Zhang, Jiayu. “China’s Military Employment of Artificial Intelligence and Its Security Implications.” The International Affairs Review, August 16, 2024. <https://www.iar-gwu.org/print-archive/blog-post-title-four-xgtap>.

⁴⁰ Desmarais, Anna. “How Europe Is Bringing AI Into Military Operations.” Euronews, May 15, 2026.

<https://www.euronews.com/next/2026/05/15/europes-ai-defence-revolution-whos-leading-and-what-comes-next>.

⁴¹ Al Jazeera. “First Naval Battle Between Drones Takes Place in the Black Sea.” 2026.

<https://www.aljazeera.com/video/newsfeed/2026/9/12/first-naval-battle-between-drones-takes-place-in-the-black-sea>.

⁴² Davison, Neil. A Legal Perspective: Autonomous Weapon Systems Under International Humanitarian Law. International Committee of the Red Cross, 2018. <https://www.icrc.org/en/document/autonomous-weapon-systems-under-international-humanitarian-law>.

human judgement. In a similar scenario, could autonomous AI be trusted to exercise the same contextual evaluation in high-stakes decision making?

Even if we keep the ‘human in the loop’, such technologies are highly susceptible to automation bias, a tendency to excessively rely on automated systems and defer to system outputs by default, making human intervention more procedural than purposeful.⁴³ Human approval in the Lavender system took only 20 seconds per target, and the only criteria was whether the target was male or female.⁴⁴ Lack of meaningful human oversight also drastically increases the likeliness of catastrophic errors, prioritizing speed over control.⁴⁵ The use of AI-assisted systems in Operation Epic Fury allowed US forces to strike more than 1,000 Iranian targets within 24 hours, including the strike on Shajareh Tayyebah Primary School in Minab, killing over 150 schoolgirls and others, due to human oversight.⁴⁶ This raises the question whether speed of automated weapons have already outmatched the ability of human verification, and whether automated targeting system in that speed can ever be brought into accountability. President Trump has already said it may not ever be possible to determine fault,⁴⁷ raising a more serious question.

AI processing often works in ‘black boxes’ giving only outputs for a set system of inputs and parameters, with no explainable information as to how the program came to these conclusions due to the complexity of deep learning processes.⁴⁸ Thus, it is not possible to understand the intent of a software program taking an autonomous decision in the battlefield. In case of legal proceeding for catastrophic events or war crimes, the laws designed for humans cannot be applied due to ambiguity of who is to blame. The defense firm had only produced the technology, not implemented it, and the offensive state did not program the technology that caused the catastrophe. The autonomous algorithm had done it at its own volition, and laws cannot punish a program.

International Humanitarian Law cannot be implied on a combatant that has no moral reasoning and cannot objectively distinguish between military, civilians and hors de combat. The

⁴³ Emery, John R. “Algorithms, AI, and Ethics of War.” *Peace Review* 33, no. 2 (2021): 205–12.
<https://doi.org/10.1080/10402659.2021.1998749>.

⁴⁴ Abraham, Yuval. “‘Lavender’: The AI Machine Directing Israel’s Bombing Spree in Gaza.” *+972 Magazine*, April 3, 2024.

⁴⁵ Fung Kao, Tze. “Drones and AI in Modern Warfare: A Security Analysis.” *SIT Digital Collections*, 2024.
<https://digitalcollections.sit.edu/szg2/4>.

⁴⁶ Solmaz, Mehmet. “US Likely Used AI in Airstrike That Killed 160 Schoolgirls: Report.” *Anadolu*, March 11, 2026.
<https://www.aa.com.tr/en/americas/us-likely-used-ai-in-airstrike-that-killed-160-schoolgirls-report/3860240>.

⁴⁷ Manson, Katrina. “U.S. Analyst’s Missed Remark Surfaced in Iran School Strike Inquiry.” *Los Angeles Times*, June 28, 2026. <https://www.latimes.com/world-nation/story/2026-06-28/u-s-analysts-missed-remark-surfaced-in-iran-school-strike>.

⁴⁸ Kosinski, Matthew. “What Is Black Box Artificial Intelligence (AI)?” *IBM*, October 29, 2024.
<https://www.ibm.com/think/topics/black-box-ai>.

mechanisms to prevent humans from using drones to commit war crimes are insufficient by itself, and full autonomy will only complicate the matter. Even then, modern frontier LLM agents have shown tendencies to “strategically circumvent the intended rules of their environment to achieve objectives”,⁴⁹ raising doubts of whether compliance will be calculated as important against the state’s greater military objective. To advance without strict protocols and bindings frameworks is to deny teaching a greater intelligence to keep faith with all we value.

The UN has advocates for regulatory control over Lethal Autonomous Weapons Systems (LAWS) under the framework Convention on Certain Conventional Weapons (CCW), and its Group of Governmental Experts on Emerging Technologies have affirmed that human responsibility for decisions on the use of force cannot be transferred to machines.⁵⁰ The UNSC has been debating on the use of AI since 2023, and the Secretary General as well as the ICRC has pushed for a binding instrument to prohibit autonomous weapons operating without human control or oversight by the end of this year.⁵¹ The 7th Review Conference of the CCW, scheduled for November, is the clearest path available to regulation, but will likely face diplomatic stagnation if major powers such as US, China and Russia refuse to comply, as they have repeated done before⁵². European countries reverberate that it is the responsibility of the state to maintain its norms and ethics in countering their adversaries,⁵³ but a lack of cooperation may take us to a race into AI’s Chernobyl moment.

Asimov’s laws of robotics have broken down in front of our very eyes, and autonomous warfare may very soon become the norm of the battlefield. However, it must be kept in mind that war is only but a means for political control, and peace can only be established through a political process, which must invariably be done through human interaction, understanding and cooperation.

⁴⁹ Kuntz, Carol. Artificial Intelligence and War: How the Department of Defense Can Lead Responsibly. Strategic Technologies Program at Center for Strategic & International Studies, 2025. <https://www.csis.org/analysis/artificial-intelligence-and-war>.

⁵⁰ United Nations, Report of the 2019 Session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems, CCW/GGE.1/2019/3 (Geneva: United Nations, 2019), annex IV, pt. b, https://documents.unoda.org/wp-content/uploads/2020/09/CCW_GGE.1_2019_3_E.pdf

⁵¹ International Committee of the Red Cross. “Joint Call by the United Nations Secretary-General and the President of the International Committee of the Red Cross for States to Establish New Prohibitions and Restrictions on Autonomous Weapon Systems.” October 4, 2023. <https://www.icrc.org/en/document/joint-call-un-and-icrc-establish-prohibitions-and-restrictions-autonomous-weapons-systems>.

⁵² Waldersee, Victoria. “US, China Opt out of Joint Declaration on AI Use in Military.” Reuters, February 5, 2026. <https://www.reuters.com/business/aerospace-defense/us-china-opt-out-joint-declaration-ai-use-military-2026-02-05/>.

⁵³ DW News. Ukraine Is Now the World’s AI War Lab. YouTube, 2026. Video. <https://www.youtube.com/watch?v=Gfqdf4JFErU>.