NOVEMBER 2026

Partners in Proliferation

Mapping a Decade of Iranian-Russian Military Cooperation

Delaney Soliday



CNAS

About the Author



Delaney Soliday is a research assistant for the Defense Program at the Center for a New American Security (CNAS). Prior to joining the Defense Program, she served as a research assistant for CNAS's Middle East Security Program. Before CNAS, Soliday was a research assistant for the counterterrorism and intelligence program at the Washington Institute for Near East Policy, where her work largely focused on mapping the illicit activities of Iranian proxy groups and tracking Hezbollah plots around the globe. She has experience working on three of the Washington Institute's interactive mapping projects on the Islamic State, Hezbollah, and Iranian external operations. Soliday holds a BA in global affairs from George Mason University.

About the CNAS Defense Program

Over the past 19 years, CNAS has defined the future of U.S. defense strategy. Building on this legacy, the CNAS Defense Program team continues to develop high-level concepts and concrete recommendations to ensure U.S. military preeminence into the future and to reverse the erosion of U.S. military advantages vis-à-vis China and, to a lesser extent, Russia. Specific areas of study include concentrating on great power competition, developing a force structure and innovative operational concepts adapted for this more challenging era, and making hard choices to effect necessary change.

Acknowledgments

The author wishes to thank Dr. Stacie Pettyjohn, Dr. Nicole Grajewski, Grant Rumley, Maura McCarthy, and Emma Swislow for their helpful feedback and comments on several drafts of this report. In addition to their editorial feedback, their input on research design and data visualization helped ensure that this report would be methodologically sound while clearly communicating research findings to both the policymaking community and a broader general audience. The author also wishes to thank her fellow Defense Program colleagues, whose support was crucial throughout the writing and editing process. This report was made possible through general support to CNAS.

As a research and policy institution committed to the highest standards of organizational, intellectual, and personal integrity, CNAS maintains strict intellectual independence and sole editorial direction and control over its ideas, projects, publications, events, and other research activities. CNAS does not take institutional positions on policy issues, and the content of CNAS publications reflects the views of their authors alone. In keeping with its mission and values, CNAS does not engage in lobbying activity and complies fully with all applicable federal, state, and local laws. CNAS will not engage in any representational activities or advocacy on behalf of any entities or interests and, to the extent that the Center accepts funding from non-U.S. sources, its activities will be limited to bona fide scholastic, academic, and research-related activities, consistent with applicable federal law. The Center publicly acknowledges on its website annually all donors who contribute.

Executive Summary

Direct military cooperation between Iran and Russia—two major American adversaries—represents a new strategic challenge to the West. This problem is further complicated by wars in Ukraine and the Middle East, which are driving demand for the rapid evolution of military technologies and production at a wartime pace. To better understand the challenge posed by the exchange of weapons and expertise between Moscow and Tehran, as well as the diversion of those resources to proxies across the Middle East, this report examines how the Iran-Russia relationship has changed over time, diversified geographically, and significantly expanded in both scope and scale. This report finds that knowledge transfer can be just as important to proliferation as weapons sales; this is what now allows Russia to produce thousands of Shahed drones per month—and what will likely allow Iran to reverse-engineer the improvements made to the systems it sold Moscow at the beginning of the war in Ukraine. The partnership between Moscow and Tehran has strengthened significantly in recent years and is likely to continue to do so as Iran begins to implement Russian battlefield tactics in the Middle East and Russia iterates on the base Shahed model in real time.

Overall recommendations for the United States:

1. Use diplomatic and economic tools to restrict Chinese support to Iranian and Russian weapon programs. Focus on securing American and partner supply chains and preventing dual-use Chinese items from fueling the Russian-Iranian defense industrial base.

2. Strengthen U.S. ties with the Caspian Sea littoral states and help American allies develop strategies that deter and interdict weapon smuggling efforts.

3. Prepare to defend the U.S. homeland, American military assets abroad, and partners and allies against a proliferated, low-cost drone threat.

Introduction

Sixteen months after Ukraine first confirmed it had shot down an Iranian-manufactured kamikaze drone launched by Russia, Kyiv's military intelligence directorate released a statement alleging that the Iran-backed, Lebanese Shia militia Hezbollah had begun to play a role in training Russian drone pilots.[1] Combat training run by senior Hezbollah commanders and members of the Islamic Revolutionary Guard Corps (IRGC) Aerospace Force took place at an Assad-era military base south of Homs, Syria—as well as Iran's Kashan airfield—and focused on training the Russian pilots on Iranian systems like the Shahed-136 and Ababil-3.[2] Combat proficiency on the Shahed systems was critical at the time; Moscow partnered directly with Tehran a year prior to build a joint Shahed drone production facility located 1,000 km east of Moscow, in a riverside industrial park known as the Alabuga Special Economic Zone (Alabuga SEZ).[3] September 2026 estimates from the Institute for Science and International Security indicate that Alabuga is likely producing upward of 6,000 one-way attack (OWA) drones per month.[4] This recent exponential growth in

The partnership between Moscow and Tehran has strengthened significantly in recent years.

Russian drone manufacturing capacity would not have been possible without direct assistance from Iran in the early days of the 2022 invasion of Ukraine and the exchange of technical expertise with key vectors of Iranian influence like Hezbollah and the IRGC.

While direct military assistance between two major American adversaries represents a new strategic challenge to the West, this degree of military cooperation between Iran and Russia did not begin in 2022. Its modern roots can be traced back to the Syrian civil war, when at Tehran's behest, Russian President Vladimir Putin agreed to intervene on the side of former Syrian President Bashar al-Assad to prevent his Iran-backed regime from collapsing.[5] Not only did Moscow deploy thousands of private military contractors and special operations troops to prop up Assad, but it also briefly received permission from Tehran to launch airstrikes on Jabhat al-Nusra and the Islamic State from a military base on Iranian soil—the only time in the Islamic Republic's existence such permission was granted.[6] Many policy experts and researchers agree that without this critical life support from Moscow, Assad would likely have lost his grip on power long before December 2024.[7]

Since the end of the Syrian civil war in 2024, Moscow and Tehran have continued to expand their bilateral cooperation in new and creative ways—signing a formal "comprehensive strategic partnership treaty," evading international financial sanctions via joint smuggling schemes, sourcing dual-use tech, and sharing proprietary technical information on deadly weapons technology.[8] This relationship revolves primarily around mutual self-interest. It enables Moscow to secure access to Iranian weapon systems like the Shahed-136 for use against Ukrainian forces, while Tehran receives technical assistance, a partner in sanctions evasion schemes, and access to upgraded, bespoke versions of its own weapon systems. This report explores the evolution and geographic proliferation of Iran and Russia's military cooperation, and what these findings could mean for future conflicts in which American adversaries work closely together.

Much of the existing work on this topic focuses on the geopolitical machinations that led these two states to grow closer.[9] While an understanding of the political motivators driving this behavior is essential, it is also important to analyze the relationship from a geographic perspective. Doing so reveals patterns of activity and highlights the impact that smuggling networks, ghost fleets, and sanctions evasion schemes are having on global weapons proliferation, especially in the context of Operation Epic Fury and Putin's persistent assault on Ukraine. When some of the United States' most significant adversaries are actively sharing weapons technology—and even producing it together—Washington should be worried about how that cooperation could negatively impact American interests in future conflicts that will inevitably feature more exquisite weapons systems and surveillance capabilities on all sides of the battlefield.

This report uses a clear and concise timeline to show the development of the modern Iran-Russia defense partnership based on open-source intelligence and a wide variety of news sources. Using a dataset on Iranian-Russian military cooperation maintained by the Center for a New American Security (CNAS) Defense Program, the author analyzes trends in the data and provides policy recommendations to the U.S. government to address issues including weapons smuggling, sanctions enforcement, and proliferation. These issues are especially

relevant given the recent uptick in conflict across the Middle East and the increasing reliance of nonstate actors on modified versions of Russian or legacy Soviet weapon systems. For example, Hezbollah began converting Soviet-era Tu-143 jet reconnaissance drones into makeshift cruise missiles it calls the DR-3 following the start of Operation Northern Arrows—the September 2024 Israeli air campaign against Hezbollah targets in Lebanon.[10]

Existing scholarship on Iranian-Russian defense cooperation also often fails to effectively identify enforcement gaps and vulnerabilities. Research on the Iran-Russia relationship should focus on identifying strategic and geographic vulnerabilities—like the Caspian Sea—that can be exploited to decrease Tehran's and Moscow's incentives to work together and encourage novel problem-solving approaches to the weapons proliferation problem.

This report first summarizes the history of the relationship (beginning with Russian intervention in the Syrian civil war), then explains how Tehran and Moscow began working together in new ways and in new theaters—most notably on drone production for Putin's recent war of aggression in Ukraine and then again in the Middle East during Operation Epic Fury. Finally, this report highlights several key enforcement gaps, identifies potential opportunities to close them, and examines implications for U.S. policy.

Methodology

The analysis contained in this report is based on the Tracking Russian-Iranian Armed Drone Exchanges (TRADE) dataset—an open-source data collection and geospatial project designed and maintained by the Defense Program at CNAS. The TRADE dataset tracks instances of military cooperation between Moscow and Tehran on drone proliferation, black market weapon sales, component parts smuggling, and sanctions evasion schemes beginning in the early 2010s and continuing to the present day. The author analyzed more than 190 entries coded according to 17 variables—tracking information like specific weapon models, coordinates, involvement of proxies or key figures, and more. Each entry is supported by at least two sources, which may include newspaper articles, think tank or government reports, declassified intelligence, historical or real-time satellite imagery, and/or social media posts. While the TRADE dataset provides a comprehensive overview of Russia and Iran's joint military activities, like all datasets, it is not exhaustive. Therefore, this report approaches the data from a qualitative rather than a quantitative perspective. Though there is no shortage of information available in the unclassified space about Russia and Iran's defense industrial cooperation, it is likely that publicly available information on this subject represents just a fraction of the military interactions between Iran and Russia and excludes other (e.g., classified) sources.

Based on a preliminary analysis of the TRADE dataset, the author identified three distinct phases that resulted in the Iran-Russia relationship that exists today:

1. **The Syrian Civil War Years (2011–2022):** Beginning in the early 2010s, Moscow began to form relationships with Syrian militants and senior Iranian officials based in Syria, who eventually convinced Russia to intervene on Assad's behalf in 2015. During this period, Wagner militants and

members of the Russian armed forces worked closely with members of Hezbollah and the IRGC on the ground, while senior Russian and Iranian officials began to outline the beginnings of a "long-term and multifaceted" military cooperation agreement.[11]

2. **The Shahed Years (2022–2024):** While Iran and Russia continued to play a limited role on the ground in Syria, Russia's full-scale invasion of Ukraine in 2022 prompted the locus of this relationship to shift to a new theater. In an attempt to defeat a surprisingly resilient and resourceful Ukrainian army, Moscow turned to Iran for assistance acquiring low-cost drones and high-tech missiles.[12] This led to a partnership in which Iran became a source of institutional defense industrial knowledge for Russia, and the two established a coproduction facility to manufacture Shahed drones in Alabuga, Russia.[13]

3. **The Global Years (2024–present):** As combat operations in Ukraine progressed and Russia became a more capable manufacturer, it fully indigenized the drone production process, developed its own bespoke Shahed models (known as the Geran series), and began exporting those more advanced models back to Iran. According to the *Financial Times,* Moscow may have sent a shipment of upgraded Geran drones to Tehran during Operation Epic Fury, presumably for use against U.S. forces.[14] In addition to producing many components itself, Russia now acquires dual-use and commercial parts for its Shahed production machine from companies across the globe, including both from allies like China and adversaries like the United States.[15] This trend is likely to continue, and researchers could expect the proliferation of Russian-Iranian hybrid drone models to third countries in the near future. Notably during this period, Moscow also began developing a secondary production site in Izhevsk for a different drone model known as the *Garpiya* (or "harpy" in English) that is based on the shape of the Shahed airframe but relies mainly on Chinese parts.[16] This may indicate that while Russia acknowledges the benefit of a close relationship with Iran, it also recognizes the geopolitical and strategic risks of aligning too closely with Tehran or relying entirely on its supply chains and technical knowledge.

The following sections provide a brief historical overview of the Iran-Russia relationship, then discuss the development of Russia's Shahed industry and the involvement of Iranian proxies. Finally, the report concludes with a preliminary analysis of the TRADE dataset, suggests areas for future study based on notable patterns in the data, and identifies implications for U.S. policy and strategic decision-making.

Russia, Iran, and the Syrian Civil War: Military Cooperation in Damascus (2011–2022)

Prior to the outbreak of the Syrian civil war in March 2011, Syria had well-established relationships with both Iran and Russia. Bashar al-Assad was a long-standing member of the axis of resistance—a network of Iranian allies and proxies spanning the Middle East that includes terrorist groups like Hamas and Lebanese Hezbollah.[17] Tehran has maintained close ties with Damascus since

Moscow also benefited from Tehran's breadth and depth of knowledge on sanction evasion tactics, especially those that interfaced with its web of proxies across the region.

the 1970s, bonding over a mutual rivalry with neighboring Iraq.[18] The country also served as a crucial land bridge to Lebanon, providing Iranian agents with easy access to Hezbollah and passage through the region on key weapon smuggling routes.[19] The Soviet Union began selling weapons to Syria during Hafez al-Assad's rule (1971–2000) and maintained close ties with the country after his son Bashar became president in 2000 following Hafez's death. In the early days of the 2011 Arab Uprising, Putin even tasked Russian personnel with operating and maintaining military equipment for Syria, fearing protesters or militants may attempt to topple Assad.[20]

The Syrian civil war brought Moscow and Tehran closer together as both parties formally deployed forces to support Assad. According to the Royal United Services Institute, there were 2,000 to 3,000 IRGC officers present in Syria before the civil war broke out.[21] As soon as the uprising and subsequent fighting began to threaten the stability of the country, Tehran equipped Damascus with the resources it needed to push back against crowds of unarmed protesters and the quickly multiplying number of militias that sprang up across the country.[22] As the Islamic State became a major threat to the stability of the Assad regime, Tehran began to significantly scale up its support to Syria and provided greater numbers of Iranian troops, weapons, and financial assistance.[23]

Senior Iranian leaders began lobbying Moscow to intervene in Syria to save Assad in late 2014, when Damascus controlled just 10 to 20 percent of the country.[24] During a January 2015 visit to Tehran, then–Russian Defence Minister Sergei Shoigu signed an agreement with his Iranian counterpart, Hossein Dehghan, that would develop into a bilateral "long-term and multifaceted" military partnership between Moscow and Tehran.[25] A week later, Ali Akbar Velayati, then–foreign policy advisor to former Supreme Leader Ayatollah Khamenei, visited Moscow to discuss direct military assistance to Syria. Qasem Soleimani—former head of the Islamic Revolutionary Guard Corps—also traveled to Russia during the summer of 2015 to meet with Putin and Shoigu and negotiate the delivery of Russian weapons and air defense systems to Iran and Syria.[26] This meeting was followed less than a month later by a secret basing agreement that gave the Russian air force access to Syria's regime-held Khmeimim Air Base, south of Latakia, "for an indefinite period."[27] At the time this agreement was signed, Russian news outlets reported that Moscow had already deployed 70 military jets to Syria and flown upward of 5,500 sorties against Islamic State and antiregime targets.[28]

By the spring of 2016, both Russian and Iranian drones were a common sight in the skies above Syrian battlefields. According to the Russian Ministry of Defence, Moscow's deployment of its spy drones "around the clock" in Syria was the first real-world test for this state-of-the-art technology.[29] Iran deployed the Shahed-129—capable of both combat and reconnaissance missions—to assist the Syrian government in its fight against both the Islamic State and the Syrian opposition.[30]

In addition to operating in close proximity, a burgeoning arms and defense technological exchange began. According to a leaked email archive, beginning in 2016, a fake subsidiary of the Iranian Ministry of Defence and Armed Forces Logistics called Sahara Thunder began brokering Iran's cooperation with Russian and Chinese military manufacturing companies, forming the beginnings of the network that would revolutionize Russia's modern-day drone

industry.[31] This early partnership allowed Iran to purchase and import Russian surveillance equipment and aerospace components, and would eventually grow to encompass major missile and air defense technology transfers, see Moscow bet billions on Iranian drone tech, and allow relations between both countries to totally reshape the way the world's most heavily sanctioned economies do business.

While Iran's proxy groups currently do not have ready access to many Western weapon systems, Soviet and Russian systems are a different story. Tehran worked through Moscow to supply systems to its axis of resistance across the Middle East—and often employed creative measures to do so. In May 2021, for example, the U.S. Navy shared photos of a massive shipment of arms seized in the north Arabian Sea likely bound for the Houthis; the weaponry aboard the dhow included advanced Russian-made antitank guided missiles, thousands of Chinese-made Type 56 assault rifles, and hundreds of various rifles and rocket-propelled grenades launchers.[33]

In addition to witnessing firsthand the value of Iran's cheap drone systems on the ground in Syria, Moscow also benefited from Tehran's breadth and depth of knowledge on sanction evasion tactics, especially those that interfaced with its web of proxies across the region.[34] Moscow and Tehran are two of the most heavily sanctioned countries in the world.[35] Therefore, if they wish to transport dual-use items or oil, they have to do so creatively to avoid detection and potential interdiction. Working together helps, especially when schemes involve the use of Iran's proxy actors, many of whom are already skilled in the arts of smuggling, forgery, and fraud. For example, beginning in the early- to mid-2010s, Syrian national Mohammad Amer Alchwiki used his Russia-based company Global Vision—and its ties to a key subsidy of the Russian Ministry of Energy—to facilitate a smuggling scheme that enabled the shipment of millions of barrels of Iranian oil to the Assad regime in Syria.[36] Payment for the oil was processed through a bank in Iran and profits were then passed on to Hezbollah and Hamas via the Central Bank of Syria.

A 2018 U.S. Department of the Treasury designation revealed another major scheme in which Russian and Iranian leaders worked with the IRGC Quds Force and Promsyrioimport, a subsidiary of the Russian Ministry of Energy, to smuggle Iranian oil to the Syrian government.[37] Senior Hezbollah officials in charge of transfers of weapons and technology between Syria and Lebanon then funneled the profits to Hezbollah and Hamas. Following the 2022 Russian invasion of Ukraine, similarly intricate and effective schemes were used to exchange Russian and Iranian oil profits for weapon systems, despite the fact that Tehran was still subject to the Joint Comprehensive Plan of Action "snapback" sanctions (including Security Council Resolution 1929, which limits Tehran's ability to acquire ballistic missile components) and the fact that Russia was under a near-global arms embargo due to its war of aggression in Ukraine.[38]

Moscow and Tehran continued to learn from the successes and failures of these operations over time, iterating on previous schemes to produce bigger and more profitable enterprises that funded weapon acquisitions and technology smuggling operations. For example, beginning in April 2021, Rostam Ghasemi, a former IRGC Quds Force officer, ran a smuggling ring that used companies based in Russia and the United Arab Emirates—in addition to Russian state-owned energy company Rosneft—to export Iranian oil to Europe.[39] Funds from

Figure 1: Russian Military Sites in Syria During the Syrian Civil War[32]

This graphic maps five key centers of Russian military influence in Syria, established following the Russian intervention to prop up Bashar al-Assad in the mid-2010s.



Key

1. Shayrat Airfield
2. Tartus Naval Base
3. Tiyas Air Base
4. Khmeimim Air Base
5. Qamishli Airport

this operation made their way back to Hezbollah and likely the IRGC. Though Iran and Russia can no longer rely on many of the smuggling routes they used during the Syrian civil war, cooperation during these years impressed upon both countries the value of presenting a united front against the West and laid the foundation for deepening military, technical, and operational cooperation.

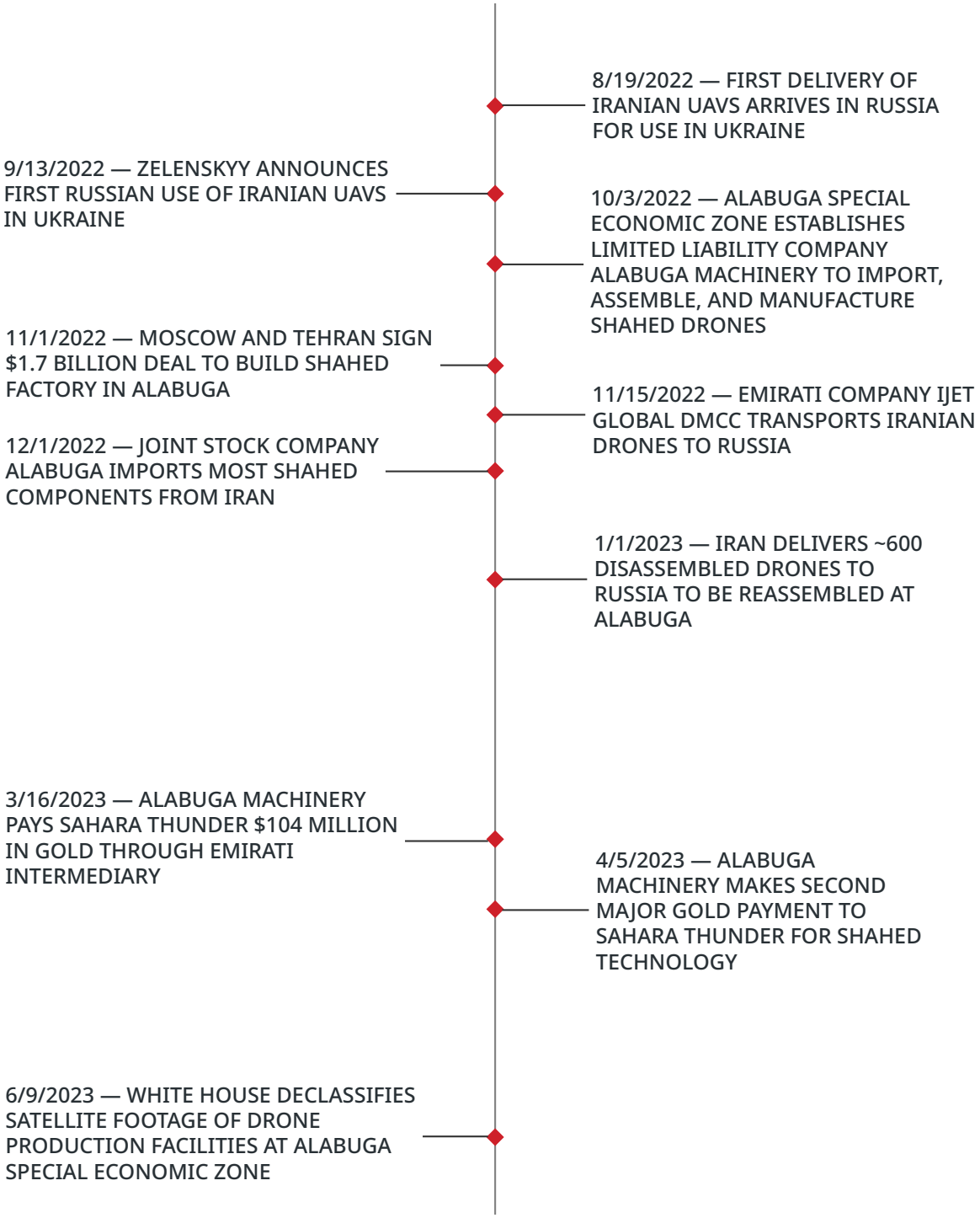
The Shahed Pipeline: War in Ukraine Fuels Iranian Drone Proliferation (2022–2024)

In July 2022, former National Security Advisor Jake Sullivan announced at a White House press conference that Iran had imminent plans to send "hundreds" of armed combat drones to Russia for use in Ukraine.[40] Declassified information later published by the Defense Intelligence Agency indicated that these systems were likely Shahed-131s—a smaller, less advanced version of the more common Shahed-136.[41] This announcement was followed by a flurry of Iranian support for Russia; over the next several weeks, Tehran sent additional drone models to Moscow, including the armed Shahed-129 and Shahed-191 systems and the Mohajer-6, an intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) system unveiled in 2017.[42] Ukrainian President Volodymyr Zelenskyy announced that Mohajers were used on the battlefield less than a month after their delivery to the Russians, who became even more competent drone pilots after receiving training from the IRGC in occupied Crimea and neighboring Belarus.[43] In exchange for these high-end Iranian systems, a Russian military plane delivered $144 million and a cache of Western weapons captured in Ukraine to the Iranians, likely for study and later replication.[44]

As Putin showed no intention of backing down in Ukraine and Russia's stockpile of long-range missiles ran low, both states quickly realized the potential benefit of deeper industrial cooperation.

Figure 2: Key Events of the Alabuga Shahed Deal[45]

While the Shahed factory in Alabuga was a joint venture between the Iranian and Russian militaries, both countries also used state-owned enterprises to purchase land, acquire assets, and ship uncrewed aerial vehicle (UAV) components or finished components like airframes.



As Putin showed no intention of backing down in Ukraine and Russia's stockpile of long-range missiles ran low, both states quickly realized the potential benefit of deeper industrial cooperation. Seyed Hojatollah Ghoreishi, chairman of the board of directors of Qods Aviation Industries and head of supply, research, and industry affairs at the Iranian Ministry of Defence and Armed Forces Logistics (MODAFL), negotiated a $1.7 billion deal that smuggled thousands of Shaheds to Russia and helped Alabuga SEZ establish the domestic capability to produce these systems.[46] Satellite imagery and building plans analyzed by the Institute for Science and International Security show Alabuga's transformation over the course of less than two years from an empty plot of land to a sprawling campus of factory floors, employee dormitories, and weapon assembly lines.[47]

This joint endeavor—nicknamed "Project Boat" in confidential memorandums designed to conceal the weapons production effort—moved in three stages, increasing in speed and size over time.[48] The deal initially began as a coproduction agreement in which Iran delivered disassembled Shaheds to Russia, which Russian workers then reassembled in Alabuga. As Russian engineers became more competent and moved to stage two, Alabuga began producing Shahed airframes on site and completed each unit's construction with engines and microelectronics imported from Iran (though these parts were not necessarily of Iranian origin). In early 2024, the Alabuga team moved to stage three and began independently manufacturing most of the drones' major component parts domestically—including the engines—and shipping hundreds of completed units per month to the Russian Ministry of Defence and the front line in Ukraine.[49]

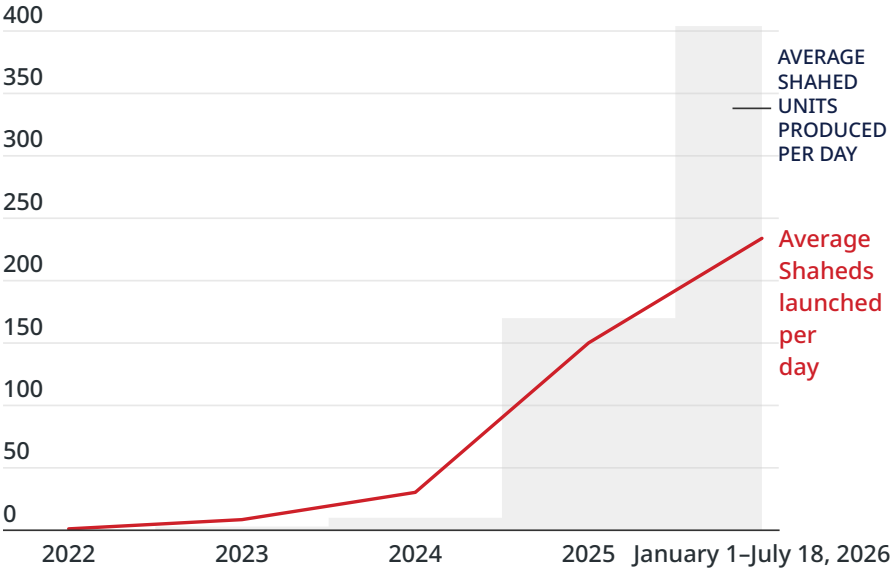
Since beginning to assemble and produce Iranian drones in 2022, Moscow has succeeded in indigenizing much of the Shahed production line, though it still relies on a significant number of imported components for many of its systems.

Project Boat's initial goal was to produce 6,000 total Shahed-136s by the middle of 2025. Alabuga's manufacturing capacity has far surpassed this goal; the facility is now churning out in excess of 6,000 *every month*—most of which are Gerans, Moscow's much-improved version of the Shahed-136.[50] These days, Russia's production lines are primarily manufacturing experimental, jet-powered Geran variants and, according to a September 2026 report by the Center for

Strategic and International Studies, were able to innovate on Tehran's original design so quickly because they treat the system as a "continuously evolving platform."[51] The variation in Geran designs in such a short period of time reveals that Russia is employing a "model of wartime innovation built around speed, adaptation, and continuous feedback from the battlefield" to inform future production efforts.[52]

Figure 3: Russia's Shahed Drone Production and Use Against Ukraine, 2022–July 2026[53]

As Russia ramped up production of Shahed/Geran drones in 2025 and 2026, its use of the systems increased dramatically. Since setting its original goal in 2022 of 6,000 units, Moscow now produces more than 6,000 units per month, allowing it to sustain a regular cadence of high-volume salvos against Ukraine.



Despite this revolution in defense industrial cooperation, most Russian and Iranian drone and missile systems rely (at least in part) on imported dual-use components—meaning those that are used for both civilian and military purposes.[54] Because these parts (for example, microchips) are available off the shelf, they are easier to acquire in significant quantities while avoiding setting off sanctions-related alarm bells. It can also be very difficult to trace the origins of foreign components that end up in Russian or Iranian weapons because they are often purchased from Western sellers through one or several intermediary companies.[55] Since beginning to assemble and produce Iranian drones in 2022, Moscow has succeeded in indigenizing much of the Shahed production line, though it still relies on a significant number of imported components for many of its systems.[56] According to Zelenskyy, Russian weapons used in a massive attack against Ukraine on October 5, 2025, contained more than 100,000 Western-made components from countries including the United States, the United Kingdom, Germany, Switzerland, and the Netherlands, as well as parts from China, Japan, South Korea, and Taiwan.[57]

An increasingly large share of Russia's imported weapon components are coming from China, rather than the United States or Europe. According to a report published in Ukraine's national news agency, Moscow is shifting away from these Western-made components toward Chinese ones they can acquire with greater ease.[58] Despite efforts to limit the proliferation and export of Chinese drone technologies, Beijing bills itself as a neutral party willing to sell to any actor with the ability to pay—including Iran, Russia, *and* Ukraine.[59] Its sales pitches are often highly effective, as China does not recognize many of the Western sanctions its exports are subject to, allowing buyers to skirt scrupulous end-user verification and licensing processes that often take months or years to complete.[60] As a result, Russia has been able to limit the exposure its defense industrial supply chains have to the West while simultaneously maximizing the benefit of its low-cost, high-reward Shahed/Geran manufacturing program.

The Shahed Goes Global: Russian-Made Iranian Weapons in Present-Day Conflicts (2024–Present)

This revolution in cheap mass production provides Russia with the magazine depth to constantly bombard its Ukrainian neighbors with large salvos of drones. Moscow even took the Shahed-136 technology it licensed from Tehran and innovated on it to create the more advanced jet-powered variants known as the Geran-3, 4, and 5.[61]

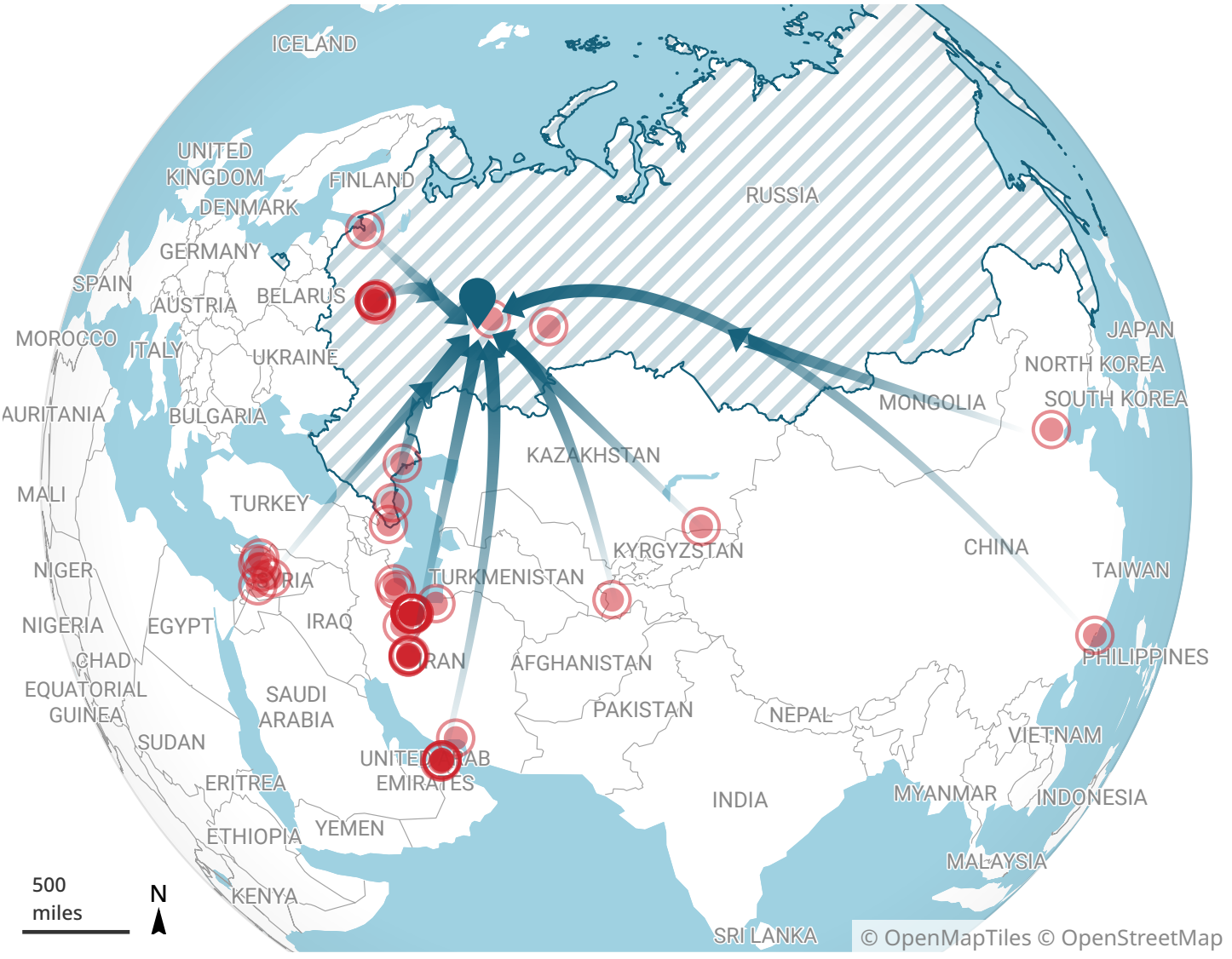
All three variants are now far more technologically advanced and capable than any of the models Iran sent to Moscow in 2022. In fact, some intelligence indicates that the Russian Ministry of Defence began exporting Gerans back to Iran in early 2026 following the start of Operation Epic Fury.[62] As a direct result of this mutually beneficial partnership, these Iranian-origin, Russian-manufactured weapon systems full of black market Western technology may even have been launched against American and NATO troops across the U.S. Central Command theater—serving as an indication of how quickly this illicit defense industrial ecosystem can innovate and advance when Tehran and Moscow work together.[63]

While Russia did not intervene on the ground in Iran the way it did in Syria, Moscow was willing to devote resources to the Iranian war effort. According to open-source reporting, Russia provided Iran with targeting data and real-time satellite imagery throughout the war, providing Iranian troops with the locations of American military personnel and assets deployed across the Middle East.[64] Russia also advised Iran on best practices based on the tactics it refined in Ukraine: for example, using salvos of drones to overwhelm ground- or air-based radars prior to a missile strike—similar to Tehran's approach to strikes on Israel in April and October 2024.[65] Intelligence and tactical advice like this may have helped Tehran accomplish some of its most impactful strikes of the war, including the one that destroyed a Terminal High Altitude Area Defense (THAAD) battery at Muwaffaq al-Salti Air Base in Jordan.[66] A Russian proposal drafted early in the conflict and obtained by *The Economist* also indicated that Moscow offered to provide Iran with 5,000 fiber-optic drones and training on how to use them effectively—again based on experience acquired in Ukraine.[67]

Russia also advised Iran on best practices based on the tactics it refined in Ukraine: for example, using salvos of drones to overwhelm ground- or air-based radars prior to a missile strike.

Figure 4: The Iranian-Russian Defense Industrial Ecosystem[68]

Each point on this map represents a company, entity, or key military installation that actively provides the technology, component parts, or shipping services that allow Russia's Shahed manufacturing facility in Alabuga to produce UAVs for the war in Ukraine. While Russia's Shahed airframes, bodies, and key electronics originally came almost exclusively from Iran, Alabuga has diversified its supply chains significantly over time. This allows the Russian defense industrial base to transition away from a reliance on Western parts—which, while often higher quality, are often more easily traceable—and strengthen relationships with neighboring partners like China.



Alabuga Special Economic Zone

Russia

Flow of component parts, technology, or shipping services to Alabuga

Company, entity, or key military installation of interest

Russia has also provided support to Iran by routing information and weapons through Tehran's proxies. While Moscow may not maintain regular communication channels with these groups—especially now that the Syrian civil war is over—it does on occasion reach out to provide assistance. For example, in early 2024, Russia began providing the Houthis with satellite targeting data to assist with their attacks on global shipping.[69] Later that year, U.S. intelligence sources stated that operatives of the Russian intelligence service known as the GRU were likely operating on the ground in Yemen, advising the Houthis and providing them with training.[70] Many experts interpret this intervention as an attempt to work with unconventional allies to undermine the U.S. presence in the Middle East—and potentially distract the world from the war in Ukraine.[71] During Operation Northern Arrows in November 2024, the Israeli Defense Forces discovered a cache of Kornet missiles in a Hezbollah base in southern Lebanon packaged in boxes labeled "Rosoboroneksport," Russia's state arms exporter.[72] In this context, Iranian proxies serve as the middlemen in the Iran-Russia relationship—partners willing to work with both countries to facilitate the flow of resources, weapons, or information, so long as it benefits Iran, as well.

Now that Tehran and Moscow have both seen the battlefield advantages of cooperation in the defense space, they are likely to double down on their commitment to work with one another. Since Shoigu and Dehghan signed a bilateral military partnership agreement in 2015, the relationship between these two countries has evolved from a limited marriage of convenience to one of deep economic and military partnership that provides significant benefits to both parties. Neither state is likely to abandon this partnership so long as it allows them access to illicit funding streams, advanced weapon systems, and dual-use and emerging technologies.

Trends from the Data

The TRADE dataset reveals several key trends, chief among them that over the past 10 years, the Iran-Russia relationship has shifted dramatically from one of convenience and short-term mutual benefit to one based on long-term strategic outcomes. The relationship has deepened significantly, and both states are more likely now than they were a decade ago to take on increasing levels of risk on one another's behalf—for example, by providing shipments of advanced weapons in violation of international nonproliferation norms, engaging in joint weapon production ventures, providing valuable intelligence on mutual enemies during a conflict, or taking increasingly bold steps to sabotage the United States.

Since the Russian intervention in Syria that delayed the collapse of the Assad regime by more than a decade, Moscow's relationship with Tehran has solidified considerably. Their cooperation in Syria allowed them the opportunity to conduct joint combat operations, exchange military expertise, and observe one another's battlefield technology in action. Following the 2022 Russian invasion of Ukraine, the two states have also transitioned the focus of their defense industrial cooperation away from small arms, tanks, and aircraft to missiles, drones, and technology. As Russia becomes increasingly self-sufficient on the Geran production line, Tehran and Moscow are beginning to cooperate on more advanced technologies like surveillance satellites and fiber-optic drones, as well

The Iran-Russia relationship has shifted dramatically from one of convenience and short-term mutual benefit to one based on long-term strategic outcomes.

as sanction evasion schemes that allow them access to and funding to purchase these new platforms. A preliminary analysis of the TRADE dataset reveals several other trends.

1. **Knowledge transfer and the movement of people can be just as valuable as the smuggling routes that transport physical weapon systems.** For example, visits made by senior Russian officials to Tehran in the mid-2010s facilitated the Shahed/Geran program that now produces several thousand drones per month for the Russian Ministry of Defence. Talks that originally focused on developing a strategy to keep Bashar al-Assad in power also served the dual purpose of forging ties between senior leaders like IRGC Quds Force General Soleimani and Russian Minister of Defence Shoigu.[73] In 2022, several delegations of Russian and Iranian officials visited air shows and defense production sites in one another's countries, trading corporate and defense intelligence prior to beginning Shahed coproduction in Alabuga.[74] Additional high-level visits by Iranian nuclear scientists to Russia in August 2025 indicate that both countries are committed to expanding their cooperation beyond the drone and missile space and sharing expertise on nuclear technology.[75]

2. **Iran is likely to reverse engineer Russian improvements to its Shahed technology,** rendering some of its older/original models like the Shahed-101 and 131 obsolete. Iranian scientists have been known to successfully reverse engineer systems in the past; for example, the Shahed-171 is a direct copy of an American RQ-170 reconnaissance drone that was intercepted by the Iranians over Afghanistan in 2011.[76] As a result of its ability to deconstruct and rebuild technologies, it is likely to replace its Shahed-136 with an improved Geran variant, and potentially make these high-end drones more widely available to its proxies in the near future.

3. **Tactically speaking, Iran is beginning to act more like Russia and replicating Russia's tactics in Ukraine.** When combined with military technologies, the knowledge Tehran has gained from high-level interactions with Russian military officials is resulting in greater success on the battlefield. The IRGC has become particularly adept at using large numbers of low-cost, relatively low-tech systems to attrite the United States in the Middle East during Operation Epic Fury, forcing it to fire interceptors that cost tens of millions of dollars to defeat systems that cost an estimated $20,000–70,000 to build, depending on the system.[77] Iran's smarter, more cost-effective strategies are likely to be even more effective when paired with advanced, jet-powered Shahed variants like the Geran-4 or 5, which, if Iran does not already possess, it will soon.

4. **The Caspian Sea is a major—and largely ignored—hub for smuggling between Iran and Russia.** The Caspian is not legally considered a "sea," meaning that it technically contains no international waters. According to the Convention on the Legal Status of the Caspian Sea, the five littoral states—Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan—are each supposed to claim 15 nautical miles of territorial waters plus 10 nautical

miles of "[exclusive] fishery zone," then consider the rest of the sea to be "common maritime space."[78] While Iran does not agree with this even division, Tehran and Moscow are aligned on their determination to keep foreign powers out.[79] Because no portion of the Caspian Sea is easily accessible by nonlittoral states, monitoring shipping and smuggling activity is very difficult. Both Iran and Russia make regular use of Caspian ports to smuggle component parts, oil, and fully assembled weapons directly from one country to another without entering international waters where other countries can easily interdict or police maritime traffic.[80]

5. **The partnership between Moscow and Tehran has strengthened significantly in recent years and is likely to continue to do so moving forward.** Both states have shown a consistent willingness to come to each other's aid during crises—for example, following the start of Iran's war with the United States. Russia and Iran have both benefited immensely from their partnership—Moscow can now produce upward of 70,000 Shahed-136/Geran-2s per year at its current production pace, while Tehran now possesses the next-generation version of the original drone models it sent to Moscow in August 2022. Both countries have developed robust black market supply chains and smuggling rings that help all involved skirt regulations, export sanctioned goods, and make money. While the two countries have not yet signed a mutual defense pact, their senior leadership continues to indicate that maintaining and growing their relationship is a priority.

6. **Iranian proxies now act as facilitators of the Iran-Russia relationship.** During the Syrian civil war, the IRGC, Russian militants, and proxy groups like Hezbollah fought side by side. Today, these groups occupy a middle ground where they play key roles in weapon smuggling operations and sanction evasion schemes to help both Moscow and Tehran avoid international financial sanctions and travel restrictions. Their activities help military technology—and the people who know how to build and improve upon it—pass across porous borders.

Recommendations for U.S. Policy

In addition to maintaining active awareness of Russia and Iran's ongoing malign activity, the U.S. government should use legislation and diplomatic tools to prevent this behavior from occurring whenever possible—and limit its effects when not.

Washington needs a stronger policy on China when it comes to the Iran-Russia relationship.

On August 24, 2026, the U.S. Department of the Treasury launched Operation Economic Outcast, billed as an "unprecedented, whole-of-government, economic campaign against the Islamic Republic of Iran and its enablers."[81] This sanctions package could have been the U.S. government's first real hardline stance on China's relationship with Iran—a model that could potentially be replicated in the Russia context as well. However, Operation Economic Outcast

fell far short of inflicting the "unprecedented" levels of economic warfare on Tehran that President Donald Trump promised. It also failed to prevent China from enabling, funding, and facilitating Iran's missile and drone rearmament.[82] A policy that constrains Beijing's ability to do this is the only way to place major financial limitations on Moscow and Tehran's ability to cooperate on weapons trade and production; however, doing so would require Washington to accept a certain level of risk, as Beijing would be likely to retaliate economically.

The U.S. government should develop closer working relationships with the Caspian Sea littoral states.
The U.S. Navy has never had access to or conducted a military exercise in the Caspian Sea, so it must rely on its Central Asian partners if it wants to counter smuggling between Russian and Iranian ports. Azerbaijan's relationship with both Russia and Iran is especially tense at the moment due to fallout over wars in Israel and Iran, as well as a December 2024 incident in which the Russian military shot down Azerbaijan Airlines Flight 8243.[83] This political strain could make Baku a more willing partner to Washington in the mission to prevent Tehran and Moscow from using its backyard to smuggle dual-use and drone technology.

The United States needs to prepare to defend against the proliferating drone threat in Europe and the Middle East.
Given Russia's production rates and Iran's willingness to sell its technology to the highest bidder, the Pentagon and the U.S. defense industrial base need to work together to increase production rates, replace depleted stockpiles, and field effective low-cost technologies in tandem with higher-end systems.[84] Both Tehran and Moscow are approaching innovation with a "refine as you go" mindset; if Washington wants to keep up and maintain the ability to counter threats effectively, it will need to learn to adapt and do the same to some extent.

Conclusion

While the Iran-Russia relationship has existed for decades, it has evolved and expanded significantly in recent years—largely prompted by Russia's involvement in the Syrian civil war and Iran's decision to supply Moscow with the drones and the technical skills required to produce drones independently, at scale, and for very cheap. Overall, these two countries are continuing to work together in new and creative ways, especially as their military partnership expands beyond drones, pushes physical borders, and challenges Western restrictions on adversary cooperation.

A preliminary analysis of the TRADE dataset identified key trends in today's Iran-Russia relationship that extend beyond the coproduction and trade of drones, including: the value of information exchange and technical expertise, the importance of the Caspian Sea as a vector for sanctions evasion and smuggling, and the significance of reverse engineering in the Iranian-Russian weapons proliferation industry. In addition to these two states increasingly working closer together, other Western adversaries like China are getting

involved and playing major roles in illicit supply chains. The United States should be worried about how partnerships like this are likely to negatively impact its interests and the performance of its assets, especially in the event of a future conflict with a reconstituted Iran, a war with China, or a confrontation with Russia on the European continent.

While Moscow and Tehran have yet to sign a mutual defense pact, war is driving them closer together regardless of any commitments made on paper. Despite previously held conventions at the beginning of the current war in Ukraine, Iran remains a key partner of Russia's, and Moscow has since returned many of the favors Tehran provided it in the form of intelligence and low-cost weapons. Conflicts in Europe and the Middle East may not have drawn these states to the other's direct aid on the battlefield, but they continue to use their own self-contained shadow economy to innovate and proliferate new weapons technology.

1. "На сирійському аеродромі Шайрат готують операторів БПЛА для війни проти України [UAV Operators Are Being Trained at the Syrian Shayrat Airfield for the War Against Ukraine]," Ukrainian General Intelligence Directorate, February 12, 2024, https://gur.gov.ua/content/na-syriis-komu-aerodromi-shairat-hotuiut-operatoriv-bpla-dlia-vi-iny-proty-ukrainy.html; "Ukraine Shoots Down Iranian-Made Drone Used by Russia—Defence Ministry," Reuters, September 13, 2022, https://www.reuters.com/world/europe/ukraine-shoots-down-iranian-made-drone-used-by-russia-defence-ministry-2022-09-13/.

2. "Hezbollah Training Russian Drone Operators in Syria—Ukrainian Intel Says," *Kyiv Post,* February 12, 2024, https://www.kyivpost.com/post/27955; Nicole Grajewski, "Arms from the Ayatollahs," in *Russia and Iran: Partners in Defiance from Syria to Ukraine* (C. Hurst & Co. Ltd., 2026), 240.

3. Dion Nissenbaum and Warren P. Strobel, "Moscow, Tehran Advance Plans for Iranian-Designed Drone Facility in Russia," *The Wall Street Journal,* February 5, 2023, https://www.wsj.com/world/moscow-tehran-advance-plans-for-iranian-designed-drone-facility-in-russia-11675609087.

4. Igor Anokhin, "Monthly Analysis of Russian Shahed 136 Deployment Against Ukraine—Updated," Institute for Science and International Security, October 13, 2026, https://isis-online.org/isis-reports/monthly-analysis-of-russian-shahed-136-deployment-against-ukraine-updated.

5. Michael Birnbaum, "The Secret Pact Between Russia and Syria That Gives Moscow Carte Blanche," *The Washington Post,* January 15, 2016, https://www.washingtonpost.com/news/worldviews/wp/2016/01/15/the-secret-pact-between-russia-and-syria-that-gives-moscow-carte-blanche/.

6. Brian Katz et al., "Moscow's Mercenary Wars," Center for Strategic and International Studies, 2020, https://russianpmcs.csis.org/; Paul Armstrong, "Russia Launches Syria Airstrikes from Iranian Base," CNN, August 16, 2016, https://www.cnn.com/2016/08/16/middleeast/russia-iran-syria-airstrikes.

7. Marsin Alshamary et al., "The Assad Regime Falls. What Happens Now?," Brookings Institution, December 9, 2024, https://www.brookings.edu/articles/the-assad-regime-falls-what-happens-now/.

8. Vladimir Isachenkov, "Russia and Iran Sign a Partnership Treaty to Deepen Their Ties in the Face of Western Sanctions," Associated Press, January 17, 2025, https://apnews.com/article/russia-putin-iran-pezeshkian-treaty-partnership-71a20990373851741d1fe76a81699036.

9. Alexander Palmer and Sofiia Syzonenko, "The Limits of Russia's Friendship: How Moscow Sees the Iran Crisis," Center for Strategic and International Studies, July 8, 2025, https://www.csis.org/analysis/limits-russias-friendship-how-moscow-sees-iran-crisis.

10. Howard Altman and Tyler Rogoway, "Hezbollah Converted Soviet Tu-143 Jet Recon Drone into Cruise Missile Says IDF, Just Like Ukraine," The War Zone, September 23, 2024, https://www.twz.com/news-features/hezbollah-converted-soviet-tu-143-jet-drone-into-cruise-missile-says-idf-just-like-ukraine.

11. Franz-Stefan Gady, "Russia and Iran Sign Military Cooperation Agreement," *The Diplomat,* January 21, 2015, https://thediplomat.com/2015/01/russia-and-iran-sign-military-cooperation-agreement/.

12. Hanna Notte and Jim Lamson, "The Uncomfortable Reality of Russia and Iran's New Defense Relationship," War on the Rocks, July 24, 2024, https://warontherocks.com/the-uncomfortable-reality-of-russia-and-irans-new-defense-relationship/.

13. Clare Sebastian et al., "Russia Is Intensifying Its Air War in Ukraine. A Secretive Factory Is Ramping Up Drone Production to Fuel the Offensive," CNN, December 27, 2024, https://www.cnn.com/2024/12/27/europe/russia-ukraine-war-drones-alabuga-factory-intl-invs.

14. Jacob Judah et al., "Russia Sending Drones to Iran, Western Intelligence Says," *Financial Times,* March 25, 2026, https://www.ft.com/content/d5d7291b-8a53-42cd-b10a-4e02fb-cf9047?syn-25a6b1a6=1.

15. Graham Lanktree, Phelim Kine, and Sophia Yan, "China's Secret Lifeline to Russia's Killer Drone Producer," *Politico,* September 4, 2026, https://www.politico.eu/article/china-state-firm-supplies-russia-materials-kamikaze-drones/; Natasha Bertrand, "CNN Exclusive: A Single Iranian Attack Drone Found to Contain Parts From More Than a Dozen U.S. Companies," CNN, January 4, 2023, https://www.cnn.com/2023/01/04/politics/iranian-drone-parts-13-us-companies-ukraine-russia.

16. Anthony Deutsch and Tom Balmforth, "Exclusive: Russia Produces Kamikaze Drone with Chinese Engine," Reuters, September 13, 2024, https://www.reuters.com/world/europe/russia-produces-new-kamikaze-drone-with-chinese-engine-say-european-intel-2024-09-13/; Kateryna Bondar and Nicole Errera, *From Shahed to Geran: How Russia Continues to Reinvent the One-Way Attack Drone* (Center for Strategic and International Studies, September 4, 2026), 2, https://www.csis.org/analysis/shahed-geran-how-russia-continues-reinvent-one-way-attack-drone.

17. "Backgrounder: The Axis of Resistance," Middle East Institute, January 6, 2026, https://mei.edu/wp-content/uploads/2026/01/Axis-of-Resistance_Backgrounder_2025.pdf.

18. Vali Nasr, *Iran's Grand Strategy: A Political History* (Princeton University Press, 2025), 190.

19. Nakissa Jahanbani and Suzanne Weedon Levy, "Iran Entangled: Iran and Hezbollah's Support to Proxies Operating in

Syria," Combatting Terrorism Center at West Point, April 2022, 2, https://ctc.westpoint.edu/wp-content/uploads/2022/04/Iran-Entangled.pdf.

20. "Fighting Rages in Syria Amid Conflicting Reports over Deployment of Russian Forces," *Al Arabiya,* March 20, 2012, https://english.alarabiya.net/articles/2012%2F03%2F20%2F201853.

21. Aniseh Bassiri Tabrizi et al., "Understanding Iran's Role in the Syrian Conflict," Royal United Services Institute, August 1, 2016, https://www.rusi.org/explore-our-research/publications/occasional-papers/understanding-irans-role-syrian-conflict.

22. Joby Warrick, "Iran Reportedly Aiding Syrian Crackdown," *The Washington Post,* May 27, 2011, https://www.washingtonpost.com/world/national-security/iran-reportedly-aiding-syrian-crackdown/2011/05/27/AGUJe0CH_story.html.

23. "Iran Military Power: Ensuring Regime Survival and Security Regional Dominance," Defense Intelligence Agency, 2019, 34, https://www.dia.mil/portals/110/images/news/military_powers_publications/iran_military_power_lr.pdf.

24. "Syria Crisis: Where Key Countries Stand," BBC, October 30, 2015, https://www.bbc.com/news/world-middle-east-23849587.

25. Nasser Karim, "Russia and Iran Sign Military Cooperation Deal," Associated Press, January 20, 2015, https://apnews.com/article/52c8dc515bf54ebb9831a6848b8e23e1.

26. "Meeting with Special Representative of the President of Iran and International Affairs Advisor Ali Akbar Velayati," The Kremlin, January 28, 2015, http://www.en.kremlin.ru/catalog/countries/IR/events/47536; Miriam Berger, "Qasem Soleimani Helped Shape the Brutality of the Syrian War," *The Washington Post,* January 3, 2020, https://www.washingtonpost.com/world/2020/01/03/qasem-soleimani-helped-shape-brutality-syrian-war/.

27. Michael Birnbaum, "The Secret Pact Between Russia and Syria That Gives Moscow Carte Blanche," *The Washington Post,* January 15, 2016, https://www.washingtonpost.com/news/worldviews/wp/2016/01/15/the-secret-pact-between-russia-and-syria-that-gives-moscow-carte-blanche/.

28. Birnbaum, "The Secret Pact Between Russia and Syria That Gives Moscow Carte Blanche."

29. Sirwan Kajjo and Mehdi Jedinia, "Military Drones Flood War Skies over Syria, Iraq," Voice of America, May 15, 2016, https://www.voanews.com/a/military-drones-flood-war-skies-over-syria-and-iraq/3330150.html.

30. David Cenciotti, "Iranian Shahed 129 Drone Appears over Damascus," *The Aviationist,* April 10, 2014, https://theaviationist.com/2014/04/10/shahed-drone-over-syria/; "Shahed-129 Iranian Medium-Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV)," OE Data Integration Network, updated November 13, 2024, https://odin.t2com.army.mil/WEG/Asset/Shahed-129_Iranian_Medium-Altitude_Long_Endurance_(MALE)_Unmanned_Aerial_Vehicle_(UAV).

31. Omar al-Ghusbi and Conrad Rousseau, "Airborne Axis: Inside the Deal That Brought Iranian Drone Production to Russia," C4ADS, May 29, 2025, https://c4ads.org/reports/airborne-axis/.

32. Visual created by the author using open-source reporting on Russian military sites in Syria. See also: Nicole Grajewski, "The Evolution of Russian and Iranian Cooperation in Syria," Center for Strategic and International Studies, November 17, 2021, https://www.csis.org/analysis/evolution-russian-and-iranian-cooperation-syria.

33. Adam Taylor, "U.S. Navy Shares Photos of Enormous Arabian Sea Weapons Seizure," *The Washington Post,* May 10, 2021, https://www.washingtonpost.com/world/2021/05/10/navy-arabian-sea-weapons-seizure/.

34. Nicole Grajewski, "The Evolution of Russian and Iranian Cooperation in Syria," Center for Strategic and International Studies, November 17, 2021, https://www.csis.org/analysis/evolution-russian-and-iranian-cooperation-syria.

35. Eleanor Hume and Kyle Rutter, *Sanctions by the Numbers: 2025 Year in Review* (Center for a New American Security, January 29, 2026), https://www.cnas.org/publications/reports/sanctions-by-the-numbers-2025-year-in-review.

36. "Treasury Designates Illicit Russia-Iran Oil Network Supporting the Assad Regime, Hizballah, and Hamas," U.S. Department of the Treasury, November 20, 2018, https://home.treasury.gov/news/press-releases/sm553.

37. "Treasury Designates Illicit Russia-Iran Oil Network Supporting the Assad Regime, Hizballah, and Hamas."

38. "Treasury Takes Massive Action Against High-Profile Iranian Network," U.S. Department of the Treasury, July 30, 2025, https://home.treasury.gov/news/press-releases/sb0215; "Treasury Targets Oil Smuggling Network Generating Hundreds of Millions of Dollars for Qods Force and Hizballah," U.S. Department of the Treasury, May 25, 2022, https://home.treasury.gov/news/press-releases/jy0799; and S.C. Res. 1929, U.N. Doc. S/RES/1929 (June 9, 2010), https://docs.un.org/en/S/RES/1929(2010).

39. "Treasury Targets Oil Smuggling Network Generating Hundreds of Millions of Dollars for Qods Force and Hizballah," U.S. Department of the Treasury, May 25, 2022, https://home.treasury.gov/news/press-releases/jy0799.

40. Zeke Miller and Josh Boak, "White House: Iran Set

to Deliver Armed Drones to Russia," Associated Press, July 11, 2022, https://apnews.com/article/russia-ukraine-biden-iran-jake-sullivan-4a9f1b2749893d8f1ed9f039869cf119.

41. "Iranian UAVs in Ukraine: A Visual Comparison," Defense Intelligence Agency, August 2023, https://www.dia.mil/Portals/110/Documents/News/Military_Power_Publications/UAV_Book.pdf.

42. Ellen Nakashima and Joby Warrick, "Iran Sends First Shipment of Drones to Russia for Use in Ukraine," *The Washington Post,* August 29, 2022, https://www.washingtonpost.com/national-security/2022/08/29/iran-drones-russia-ukraine-war/; "Mohajer-6 Iranian ISTAR Unmanned Aerial Vehicle (UAV)," OE Data Integration Network, November 13, 2024, https://odin.t2com.army.mil/WEG/Asset/Mohajer-6_Iranian_Unmanned_Aerial_Vehicle_(UAV).

43. Hanna Notte and Jim Lamson, "Iran-Russia Defense Cooperation: Current Realities and Future Horizons," Center for Nonproliferation Studies (CNS), Middlebury Institute for International Studies at Monterey, *CNA Occasional Paper* No. 61, August 2024, 12, https://nonproliferation.org/wp-content/uploads/2024/08/op61-RSI_Russia-Iran_Notte-Lamson_CNS-Occasional-Paper.pdf.

44. Deborah Haynes, "Russia Flew €140m in Cash and Captured Western Weapons to Iran in Return for Deadly Drones, Source Claims," Sky News, November 9, 2022, https://news.sky.com/story/russia-gave-eur140m-and-captured-western-weapons-to-iran-in-return-for-deadly-drones-source-claims-12741742; "Sky News: Russia Sent to Iran 140 Million Euros, Western Weapons Seized in Ukraine in Exchange for Kamikaze Drones," *The Kyiv Independent*, November 8, 2022, https://kyivindependent.com/sky-news-russia-sent-to-iran-140-million-euros-in-cash-western-weapons-seized-in-ukraine-in-exchange-for-kamikaze-drones/.

45. Delaney Soliday, "Tracking Russian-Iranian Armed Drone Exchanges," unpublished dataset, Center for a New American Security, accessed October 30, 2026.

46. "Treasury Sanctions Suppliers of Iranian UAVs Used to Target Ukraine's Civilian Infrastructure," U.S. Department of the Treasury, January 6, 2023, https://home.treasury.gov/news/press-releases/jy1182; David Albright et al., "Alabuga's Greatly Expanded Production Rate of Shahed 136 Drones," Institute for Science and International Security," May 10, 2024, https://isis-online.org/isis-reports/alabugas-greatly-expanded-production-rate-of-shahed-136-drones/.

47. David Albright, Sarah Burkhard, and Spencer Faragasso, "Highlights of Institute Assessment of Alabuga Drone Documents," Institute for Science and International Security, August 17, 2023, https://isis-online.org/isis-reports/highlights-of-institute-assessment-of-alabuga-drone-documents; Joseph S. Bermudez Jr., Victor Cha, and Jennifer Jun, "A Closer Look at the Yelabuga UAV Factory," Beyond Parallel, Center for Strategic and International Studies, March 9, 2026, https://beyondparallel.csis.org/a-closer-look-at-the-yelabuga-uav-factory/.

48. Dalton Bennett and Mary Ilyushina, "Inside the Russian Effort to Build 6,000 Attack Drones with Iran's Help," *The Washington Post,* August 17, 2023, https://www.washingtonpost.com/investigations/2023/08/17/russia-iran-drone-shahed-alabuga/.

49. David Albright, Sarah Burkhard, and Spencer Faragasso, "Highlights of Institute Assessment of Alabuga Drone Documents," Institute for Science and International Security, August 17, 2023, 2, https://isis-online.org/isis-reports/highlights-of-institute-assessment-of-alabuga-drone-documents.

50. Bennett and Ilyushina, "Inside the Russian Effort to Build 6,000 Attack Drones with Iran's Help"; Fabian Hinz, "Russia's New Jet-Powered Gerans," International Institute for Strategic Studies, January 28, 2026, https://www.iiss.org/online-analysis/missile-dialogue-initiative/2026/01/russias-new-jet-powered-gerans/; Bondar and Errera, *From Shahed to Geran: How Russia Continues to Reinvent the One-Way Attack Drone,* 1.

51. Bondar and Errera, *From Shahed to Geran: How Russia Continues to Reinvent the One-Way Attack Drone,* 1.

52. Bondar and Errera, *From Shahed to Geran: How Russia Continues to Reinvent the One-Way Attack Drone,* 1–2.

53. Visual created by the author using open-source reporting on Russia's domestic drone production and use of Shahed UAVs against Ukraine. See: Igor Anokhin, "Monthly Analysis of Russian Shahed 136 Deployment Against Ukraine (August 2025–June 2026)," Institute for Science and International Security, July 7, 2026, https://isis-online.org/isis-reports/monthly-analysis-of-russian-shahed-136-deployment-against-ukraine; Dalton Bennett and Mary Ilyushina, "Inside the Russian Effort to Build 6,000 Attack Drones with Iran's Help," *The Washington Post,* August 17, 2023, https://www.washingtonpost.com/investigations/2023/08/17/russia-iran-drone-shahed-alabuga/; and "Shahed-136 and the Geran Family: Variants, Production, Guidance, and Employment," Drone Warfare, updated August 23, 2026, https://drone-warfare.com/research/shahed-136/.

54. Kimberly Donovan and Emily Ezratty, "From Drones to Rocket Fuel, China and Russia Are Helping Iran Through Supply Chains," Atlantic Council, March 25, 2026, https://www.atlanticcouncil.org/dispatches/from-drones-to-rocket-fuel-china-and-russia-are-helping-iran-through-supply-chains/.

55. Kate Koren et al., "Preventing Iran's Military Reconstitution: What Tehran Lost, What It Will Need, and Opportunities to Disrupt Procurement," Center for Strategic and International Studies, June 2026, 20, https://csis-website-prod.s3.amazonaws.com/s3fs-public/2026-06/260622_Koren_Iran_Mil-

itary.pdf?VersionId=Sge5.2RxaSGWGEFPpVkAL8UTNUv-51Rai.

56. "Adversary Entente Cooperation at Russia's Shahed Factory Threatens Global Security," Institute for the Study of War, November 21, 2025, https://understandingwar.org/research/adversary-entente/adversary-entente-cooperation-at-russias-shahed-factory-threatens-global-security/.

57. Volodymyr Zelensky, "На четвертому році повномасштабної війни Росія продовжує отримувати компоненти для виготовлення зброї . . . [In its fourth year of full-scale war, Russia continues to receive components for weapons . . .]," Telegram, October 6, 2025, https://t.me/V_Zelenskiy_official/16405; Kateryna Denisova, "Over 100,000 Western-Made Parts Found in Drones, Missiles Used in Russian Recent Mass Attack, Zelensky Says," *The Kyiv Independent,* October 6, 2025, https://kyivindependent.com/over-100-000-western-made-parts-found-in-drones-missiles-used-in-russian-recent-attack/.

58. "Russia Replacing American Components in Shahed Drones with Chinese Ones—Ukrainian Intel," *Ukrinform*, July 4, 2025, https://www.ukrinform.net/rubric-ato/3979284-russia-replacing-american-components-in-shahed-drones-with-chinese-ones-ukraine-intel.html; Alberto Nardello, "Russian Drone Documents Draw Line from China to Ukraine's Skies," Bloomberg, July 8, 2025, https://www.bloomberg.com/news/articles/2025-07-08/china-s-suppliers-key-for-russian-drones-in-war-against-ukraine-documents-show.

59. Charles Clover, William Langley, Chris Cook, and Christopher Miller, "Russia, Ukraine, and the Race for Chinese Drone Components," *Financial Times,* January 21, 2026, https://www.ft.com/content/58416bf8-97d0-4d99-8152-cff9ec2dd3ef?syn-25a6b1a6=1.

60. Graham Ayres and Lyndi Tsering, "China's Facilitation of Sanctions and Export Control Evasion," U.S.-China Economic and Security Review Commission, Staff Research Report, November 14, 2025, 10, https://www.uscc.gov/sites/default/files/2025-11/Chinas_Facilitation_of_Sanctions_and_Export_Control_Evasion.pdf.

61. Fabian Hinz, "Russia's New Jet-Powered Gerans," International Institute for Strategic Studies, January 28, 2026, https://www.iiss.org/online-analysis/missile-dialogue-initiative/2026/01/russias-new-jet-powered-gerans/.

62. Jacob Jidah et al., "Russia Sending Drones to Iran, Western Intelligence Says," *Financial Times,* March 25, 2026, https://www.ft.com/content/d5d7291b-8a53-42cd-b10a-4e02fb-cf9047?syn-25a6b1a6=1.

63. Oleksandr Moiseienko, "Sanctions Ignored? Western Tech Found in Iranian Shahed Drones That Reached Cyprus, Dubai, and Beyond," United24 Media, March 5, 2026, https://united-24media.com/investigations/western-components-helped-iranian-shahed-drones-reach-cyprus-dubai-and-beyond-16514; Dominic Hauschild and Vika Sybir, "Russian Tech Found in Drone That Hit RAF Base in Cyprus," *The Times,* March 7, 2026, https://www.thetimes.com/article/a4a46bf8-6f0c-429d-8e8c-854dc0fd4392; and Judah et al., "Russia Sending Drones to Iran, Western Intelligence Says."

64. Thomas Grove, Milàn Czerny, and Benoit Faucon, "Russia Is Sharing Satellite Imagery and Drone Technology with Iran," *The Wall Street Journal,* March 17, 2026, https://www.wsj.com/world/russia-is-sharing-satellite-imagery-and-drone-technology-with-iran-0dd95e49?mod=WSJ_home_mediumtopper_pos_2.

65. Josef Federman and Jon Gambrell, "Israel Says Iran Launched More Than 300 Drones and Missiles, 99% of Which Were Intercepted," Associated Press, April 14, 2024, https://apnews.com/article/strait-of-hormuz-vessel-33fcffde2d867380e-98c89403776a8ac; Gerry Doyle, "Iranian Missile Strike on Israel Shows Capability for Greater Scale, Complexity," Reuters, October 2, 2024, https://www.reuters.com/world/middle-east/iranian-missile-strike-israel-shows-capability-greater-scale-complexity-2024-10-02/.

66. Thomas Bordeaux and Gianluca Mezzofiore, "Radar Bases Housing Key U.S. Missile Interceptor Hit in Jordan, Saudi Arabia, and UAE, Satellite Images Show," CNN World, March 6, 2026, https://www.cnn.com/2026/03/05/middleeast/radar-bases-us-missile-defense-iran-war-intl-invs.

67. "Secret Document Reveals Russia's Plans to Aid Iran," *The Economist,* May 7, 2026, https://www.economist.com/europe/2026/05/07/secret-document-reveals-russias-plans-to-aid-iran.

68. Delaney Soliday, "Tracking Russian-Iranian Armed Drone Exchanges," unpublished dataset, Center for a New American Security, accessed October 30, 2026.

69. Benoit Faucon and Thomas Grove, "Russia Provided Targeting Data for Houthi Assault on Global Shipping," *The Wall Street Journal,* October 24, 2024, https://www.wsj.com/world/russia-provided-targeting-data-for-houthi-assault-on-global-shipping-eabc2c2b?mod=article_inline.

70. Sean Matthews, "Exclusive: U.S. Intelligence Suggests Russian Military Is Advising Houthis Inside Yemen," *Middle East Eye,* August 2, 2024, https://www.middleeasteye.net/news/exclusive-russian-military-advising-houthis-inside-yemen-us-intelligence-suggests.

71. Katherine Spencer, "Trump Should Not Forget the Russian Hand Behind the Houthis," *New Atlanticist,* Atlantic Council, April 2, 2025, https://www.atlanticcouncil.org/blogs/new-atlanticist/trump-should-not-forget-the-russian-hand-behind-the-houthis/.

72. Anat Peled, Summer Said, and Benoit Faucon, "Israel Finds

Large Troves of Russian Arms in Hezbollah's Hands," *The Wall Street Journal,* November 19, 2024, https://www.wsj.com/world/middle-east/israel-finds-large-troves-of-russian-arms-in-hezbollahs-hands-eeed9445.

73. "Iran Quds Chief Visited Russia Despite UN Travel Ban: Iran Official," Reuters, August 7, 2015, https://www.reuters.com/article/us-russia-iran-soleimani-idUSKCN0QC1KM20150807/.

74. Dion Nissenbaum and Warren P. Strobel, "Moscow Tehran Advance Plans for Iranian-Designed Drone Facility in Russia," *The Wall Street Journal,* February 3, 2023, https://www.wsj.com/world/moscow-tehran-advance-plans-for-iranian-designed-drone-facility-in-russia-11675609087.

75. Miles Johnson and Max Seddon, "The Covert Trip by Iranian Nuclear Experts to Russia," *Financial Times,* August 5, 2025, https://www.ft.com/content/00f6f94c-d584-430c-b6d7-cc85933fc3e6?syn-25a6b1a6=1.

76. "U.S. Destroys Iran's Shahed-171, Reverse-Engineered Copy of Secret RQ-170 Stolen with Alleged Russian EW Help in 2011," Defense Express, April 5, 2026, https://en.defence-ua.com/weapon_and_tech/us_destroys_irans_shahed_171_reverse_engineered_copy_of_secret_rq_170_stolen_with_alleged_russian_ew_help_in_2011-18066.html.

77. Adolfo Arranz et al., "Cheap Drones Are Reshaping the War in the Sky: How the U.S. is Fighting a War Without Sending Ground Troops to Iran—and the Inexpensive Drones Making It Harder," Reuters, March 17, 2026, https://www.reuters.com/graphics/IRAN-CRISIS/DRONES/dwpkyamxqpm/; Benjamin Jensen and Yasir Atalan, "Drone Saturation: Russia's Shahed Campaign," Center for Strategic and International Studies, May 13, 2025, https://www.csis.org/analysis/drone-saturation-russias-shahed-campaign; and Rachel Wilson et al., "How Russia's Drone Attacks Have Reshaped the War in Ukraine: An Illustrated Guide," CNN, updated September 2, 2025, https://edition.cnn.com/world/russia-drone-attacks-ukraine-war-intl-vis.

78. "Convention on the Legal Status of the Caspian Sea," The Kremlin, August 12, 2018, http://www.en.kremlin.ru/supplement/5328.

79. Richard Weitz Weitz, "Tehran and Moscow: Alignment and Divergence in the Caspian," Middle East Institute, June 9, 2021, https://mei.edu/publication/tehran-and-moscow-alignment-and-divergence-caspian/.

80. Nicholas Kulish, Neil MacFarquhar, and Julian E. Barnes, "Long Overlooked, Caspian Sea Provides Strategic Trade Route for Iran," *The New York Times,* May 9, 2026, https://www.nytimes.com/2026/05/09/world/middleeast/caspian-sea-iran-russia.html.

81. U.S. Department of the Treasury, "Treasury Launches Unprecedented Campaign Against Iranian Regime on Economic D-Day," August 24, 2026, https://home.treasury.gov/news/press-releases/sb0613/.

82. Farnoush Amiri, "Trump Warns of 'Economic D-Day Against Iran, but Tehran Is Well Acquainted with Sanctions," Associated Press, August 21, 2026, https://apnews.com/article/iran-war-trump-sanctions-economic-fury-oil-d28206ea288a3d-4a9b82260ab44ce460.

83. Könül Khalilova, "Azerbaijan Furious with Iran as War Spills over Its Border," BBC, March 6, 2026, https://www.bbc.com/news/articles/c1e9qpy90g3o and Emil Avdaliani, "Russia-Azerbaijan: Relations Back on the Rocks," Center for European Policy Analysis, February 5, 2026, https://cepa.org/article/russia-azerbaijan-relations-back-on-the-rocks/.

84. Philip Sheers and Stacie Pettyjohn, *Drones, Missiles, and the U.S. Munitions Shortage: The Role of Affordable Mass in a Taiwan Conflict* (Center for a New American Security, September 18, 2026), https://www.cnas.org/publications/reports/drones-missiles-and-the-u-s-munitions-shortage; Carlton Haelig, *Munitions Procurement and the Fiscal Year 2027 Defense Budget: Three Conditions for Munitions Acceleration* (Center for a New American Security, October 7, 2027), https://www.cnas.org/publications/reports/munitions-procurement-and-the-fiscal-year-2027-defense-budget.

About the Center for a New American Security

The mission of the Center for a New American Security (CNAS) is to develop strong, pragmatic, and principled national security and defense policies. Building on the expertise and experience of its staff and advisors, CNAS engages policymakers, experts, and the public with innovative, fact-based research, ideas, and analysis to shape and elevate the national security debate. A key part of our mission is to inform and prepare the national security leaders of today and tomorrow.

CNAS is located in Washington, D.C., and was established in February 2007 by cofounders Kurt M. Campbell and Michèle A. Flournoy. CNAS is a 501(c)3 tax-exempt nonprofit organization. Its research is independent and nonpartisan.

©2026 Center for a New American Security

All rights reserved.

CNAS Editorial

VICE PRESIDENT OF STUDIES
Katherine L. Kuzminski

PUBLICATIONS & EDITORIAL DIRECTOR
Maura McCarthy

ASSOCIATE EDITOR
Caroline Steel

ASSOCIATE EDITOR
Colleen Kristy

CREATIVE DIRECTOR
Melody Cook

ART DIRECTOR
Christian Font

Cover Art & Production Notes

COVER PHOTO
Getty Images

Center for a New American Security
1701 Pennsylvania Ave NW
Suite 700
Washington, D.C. 20006

CNAS.org
@CNASdc

CEO
Richard Fontaine

Executive Vice President
Paul Scharre

Senior Vice President of Development
Anna Saito Carson

Vice President of Strategy and Communications
David McKenzie

Vice President of Studies
Katherine L. Kuzminski

Chief Financial Officer
Allison Francis

Contact Us
202.457.9400
info@cnas.org



Center for a
New American
Security