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Russia Begins Using Iranian Drones Against Ukraine

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Iran is supplying Russia with unmanned aerial vehicles (UAVs). Despite some early difficulties, Russia is now using the Iranian platforms for effective short-range air-to-ground attacks against frontline Ukrainian forces. This is in an effort to slow Ukraine's counter-offensive while evading Ukrainian air defenses and without committing additional Russian forces. U.S. sanctions limiting Russia's ability to buy Western components, particularly electronics, Iran's readily available UAV arsenal despite extensive U.S. sanctions, and the Joint Comprehensive Plan of Action's (JCPOA) elimination of the conventional arms embargo on Iran in 2020, have contributed to bringing these two pariah states and aggressors into closer cooperation.

What Happened?

- On August 9, U.S. officials revealed that Iran had started training Russians to use its UAVs and sent its first shipment with hundreds of Mohajer-6 and Shahed-129 and -191 UAVs to Russia at the end of August. Russia has since acquired Iran's Shahed-136 UAV.

- On September 13, Ukraine's defense ministry revealed that it shot down an Iranian-made Shahed-136 UAV that Russia's armed forces had used near Kubiansk in Kharkiv, Ukraine, the first time that Kyiv claimed to have neutralized one of the systems Iran recently had provided Russia.

- On September 17, the Wall Street Journal reported that Russia has rebranded and repainted the Iranian Shahed-136 as the Geran-2, meaning Geranium-2, and had recently been flying it over, and successfully attacking, Ukrainian armor and artillery positions.

Why Is It Important?

- Iranian UAVs bolster Russia's capabilities after it suffered massive losses of military hardware and as sanctions limit its defense industry's ability to restock its arsenal, as shown in the attached infographic. They also demonstrate the resources that Iran has devoted to advancing its drone capabilities, potentially even outpacing Russia's efforts. While Iran also provided weapons-capable UAVs that have shorter ranges than the Shahed-136, Russia's struggle to suppress or have its aircraft evade Ukrainian air defenses likely motivated it to use a loitering munition capable of overwhelming air defenses if launched in large numbers.

  » Despite U.S. sanctions on Iran's UAV program, it has continued to manufacture and proliferate its weaponry. On the other hand, sanctions on Russia are preventing Moscow from sourcing necessary components to build additional systems to replace the heavy losses it has incurred in Ukraine.

» Russia's UAVs have primarily been for reconnaissance, with some instances of ineffective loitering munitions. Russia's UAV program has been unable to replace the reconnaissance capabilities it has lost due to Ukrainian air defenses.

» The Iranian UAV that Russia has been using in recently reported attacks against frontline Ukrainian forces—the Shahed-136—is one of Iran's longest range drones and has the furthest range of any of the systems Iran reportedly provided to Russia. Russian aircraft have struggled with suppression/destruction of enemy air defenses (SEAD/DEAD), so Moscow may have chosen to use a loitering munition to overwhelm Ukraine' air defenses.

– Alternatively, this operational choice may indicate Russian forces may have had difficulties with the other UAVs or are choosing to launch them from further distances.

– Russia might be resorting to Iranian UAVs for launching air-to-ground attacks due to its loss of artillery in the region.

» Iranian UAVs have typically been launched at strategic targets from distance, not in tactical use at the frontlines of active operational engagements.

» Downed Russian UAVs have been full of Western components, particularly electronics. Sanctions on Russia have hampered its ability to source the parts necessary to produce its UAVs.

- The Iranian UAVs that Russia has acquired so far are similar to systems it has lost and expand its capabilities to conduct air-to-surface attacks, electronic warfare, and targeting.

Russian UAV Losses in Ukraine

UAV	TYPE	RANGE (km)	NUMBER LOST
Eleron-3	ISR	3	13
Eleron T28ME	ISR	3+	1
ZALA 421-16E2	ISR	15	5
Takhion	ISR	40	2
Lastochka-M	ISR	48	1
Merlin	ISR	70	1
Supercam	ISR	100	1
Orlan-10	ISR	150	84
Orlan-10	Jamming	150	3
"Orlan-20"*	ISR	Likely Near 150	8
Orlan-30	ISR	300	3
Forpost	ISR	400	3
Orion	Unmanned Combat Aerial Vehicle (UCAV)	700	1
Unknown	-	-	2

**Oryx's name for a modified Orlan-10*
Data as of 9/20/22

Source: Oryx

» The Mohajer-6 and Shahed-191 are weapons-capable UAVs that can also conduct short- to medium-range intelligence, surveillance, and reconnaissance (ISR) and airstrikes.

  - With a range of 200 km, the Mohajer-6 has similar range and capabilities to the Orlan-10 (range: 150 km) UAV.

  - With a range of 450 km, the Shahed-191 has a similar range and capabilities to Russia's the Forpost UAV (range: 500 km).

- The Shahed-129 is an armed UAV that can also provide air surveillance and air-to-ground operations from further ranges.

- The Shahed-136 is a long-range capable loitering munition that strikes its target by ramming into it. Shahed-136s are launched from a flatbed truck, making their launch sites highly mobile.

- The Shahed-136's 2,000 km and Shahed-129's 1,800 km ranges are significantly longer than any of the systems Russia has reportedly lost in Ukraine.

  - Various models of the Iranian Shahed-class have provocatively flow over a U.S. aircraft carrier in the Persian Gulf, been fired by the Iran-backed Houthi rebels in Yemen against Saudi Arabian oil infrastructure, and killed two sailors on an oil tanker offshore of Oman in 2021. Shahed-136s were likely repeatedly used to strike the Liberian-flagged, Israeli-operated MT Mercer Street on July 29, 2021, killing two crewmembers.

- Ukraine, meanwhile, has integrated a variety of drones into its arsenal from systems intended for military operations to converting small commercial racing drones into loitering munitions capable of dropping grenades or colliding with its target.

- After some initial difficulties, Russia appears to be learning how to use Iranian UAVs effectively.

  - According to a senior U.S. official who spoke with Reuters, Russia initially faced "numerous failures" with Iranian drones in late August.

  - By September 14, an intelligence updated tweeted by the U.K. Ministry of Defense indicated that Russia was using the Shahed-136 for tactical strikes along the front lines.

    - Russia has primarily flown the Shahed-136 in the Kharkiv region, where a recent Ukrainian offensive retook a large swatch of territory from Russia, presumably in an attempt to slow Ukraine's counter-offensive without committing additional troops or hardware to the area.

    - According to Col. Rodion Kulagin, commander of artillery of Ukraine's 92nd Mechanized Brigade, who spoke with The Wall Street Journal, "in his brigade's operational area alone, the Iranian drones—which usually fly in pairs and then slam into their targets—have destroyed two 152-mm self-propelled howitzers, two 122-mm self-propelled howitzers, as well as two BTR armored infantry vehicles."

  - Russia is purchasing additional artillery from North Korea, and, if it is able to deploy it in proximity to Kharkiv, could instead use Iranian UAVs for longer range operations into Ukraine. Even if Ukraine retakes more of its territory, these capabilities could enable Russia to routinely target Ukrainian forces.

- The United States has supplied Ukraine with Switchblade loitering munitions and the Ukrainian Armed Forces have made extensive use of Turkey's TB2 UAVs.

» Ukraine's TB2 airstrikes have dealt a blow to Russia's air defenses, vehicles, and artillery, which the Russian military had deployed in columns as it advanced into Ukraine.

- The United States has sanctioned Iranian UAV manufacturers and proliferators, including on October 29, 2021, but this has not stopped Tehran from providing components, systems, and training to its proxies and now Russia. The fact that Iran continues to proliferate, despite the sanctions, indicates that it likely feels capable of restocking its supply of UAVs.

» On September 8, the U.S. Treasury Department Office of Foreign Assets Control (OFAC) designated "three companies and one individual involved in the research, development, production, and procurement of Iranian UAVs and UAV components, including the Shahed series of drones, for Iran's Islamic Revolutionary Guard Corps (IRGC) and its Aerospace Force (IRGC ASF) and Navy."

» Pursuant to the JCPOA, a decade-long United Nations arms embargo on Iran expired in October 2020. This had banned Iran from purchasing weaponry like aircraft and tanks.

Iranian UAVs Transferred to Russia

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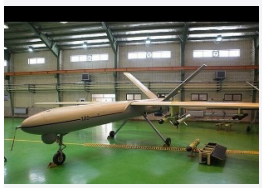
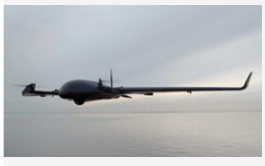
Russia has deployed Iranian unmanned aerial vehicles (UAVs) against the Ukrainian armed forces. These systems bolster Russia's capabilities by providing replacements after it suffered massive losses of military hardware as well as additional long-range aircraft and advanced loitering munition capabilities.

IRANIAN UAVs PROVIDED TO RUSSIA	CORRESPONDING LOST RUSSIAN UAVs
REPLACING LOST RUSSIAN UAVS	
 **Mohajer-6 (ISR/UCAV)** Range: 200 km	 **Orlan-10 (ISR)** Range: 150 km Cost: $87,000 - $120,000 Lost: 84 Reconnaissance and 3 Jamming
 **Shahed-191 (ISR/UCAV)** Range: 450 km	 **Forpost (ISR)** Range: 400 km Cost: $6 to $7 million Lost: 3
ADDITIONAL CAPABILITIES	
 **Shahed-129 (ISR/UCAV)** Range: 1,800 km	
 **Shahed-136 (Loitering Munition)** Range: 2,200 km	

Key:

= 10 Lost UAVs

ISR = Intelligence, Surveillance, Reconnaissance

UCAV = Unmanned Combat Aerial Vehicle