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Hard Fighting In The Caucasus: The Azerbaijani Armed Forces' Combat Performance and Military Strategy In The 2020 Nagorno-Karabakh War

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Hard Fighting In The Caucasus: The Azerbaijani Armed Forces' Combat Performance and Military Strategy In The 2020 Nagorno-Karabakh War

Dr. Can Kasapoglu¹

Executive Summary

The 2020 Nagorno-Karabakh clashes marked more than a bonanza between two belligerents. In essence, the war was fought between two strategic paradigms, one belonging to the 21st century and the other the remnant of 20th century military thinking.

On the one hand, the Azerbaijani Armed Forces showcased the *zeitgeist* through the systematic use of unmanned systems, network-centric operational art and information superiority on the battleground. On the other hand, the Armenian formations relied on heavily fortified defensive positions along a tough landscape, ballistic missiles to escalate the conflict, as well as Soviet-Russian doctrines prioritizing overwhelming fire-power through echeloned defenses. Eventually, Azerbaijan scored an undeniable victory and the Azerbaijani campaign recaptured a large portion of the occupied territories.

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Drone warfare was one of the key enablers of Baku's military achievements. Azerbaijani military planners employed their unmanned aerial systems, chiefly procured from Turkey and Israel, against a broad target set including Armenian mobile air defenses, strategic surface-to-air missile (SAM) systems, troop concentrations, armored platforms, and even ballistic missile TELARs (transporter-erector-launcher). The 'dronization' trend in the Nagorno-Karabakh War, without a doubt, goes well beyond regional strategic affairs in the Caucasus, and pertains to global lessons learned for modern warfare.

Introduction

In late 1991, following the dissolution of the Soviet Union, the newly independent states, including Armenia and Azerbaijan, signed the Alma-Ata Protocols, which openly stated that each party is firmly committed to recognizing and respecting each other's territorial integrity and existing borders. This political-geographic expression undisputedly included the Karabakh region as Azerbaijani territory.¹

By 1992, Armenian forces had occupied Nagorno-Karabakh, along with Agdam, Jibrayil, Fizuli, Lachin, Kelbajar, Zangelan and Qubati. Later on, the United Nations Security Council adopted four resolutions on the issue, calling for the full withdrawal of the Armenian occupation forces and confirming the territorial unity

of Azerbaijan to include Nagorno-Karabakh and the seven surrounding districts.²

The Armenian occupation brought with it many atrocities and war crimes, such as the Khojaly massacre of 1992. And while the international community, in particular the West, has been vigilant and sensitive to territorial change through the use of force—for example, in the case of the Saddam Hussein-led Iraqi invasion of Kuwait and Russia’s illegal annexation of Crimea—Baku had to face a deadlock when it came to reclaiming its occupied national territory. This very deadlock, and the inability, or unwillingness, of the international community, left the Azerbaijani administration with little choice but to pursue a decisive military solution on the principle of self-defense.

Back in the 1990s, Azerbaijani forces had underperformed against the Armenian offensive for many reasons, ranging from inadequate equipment to ill-prepared officer corps and lack of military know-how. Starting from the 2010s, however, the Azerbaijani Armed Forces have displayed a different capacity. Baku dwarfs Armenia in terms of defense economics. Moreover, the Azerbaijani military showcases advanced concepts and the technological upper-hand, as one can observe in the 2020 clashes.

The 2020 war has exacerbated crucial developments in the Caucasus. First and foremost, Azerbaijan has re-captured an important portion of its occupied territories through a carefully executed offensive. From a military standpoint, the critical role of drone war-

fare and unmanned systems on 21st century battlegrounds was, once more, highlighted by the Azerbaijani campaign. Second, the drastic military outcome has led to a tectonic political collapse in Yerevan. Armenia's Defense Minister, David Edgari Tonoyan, had to resign upon the fiasco of Armenian forces in the face of the Azerbaijani advances. Then Armenian Foreign Minister Zohrab Mnatsakyan had to follow suit. Another big reshuffle in the Armenian military ranks was the resignation of General Movses Hako-byan, Chief Inspector of the Armenian Armed Forces and former Chief of Staff.³ More sensationally than all these top figures having lost their posts, Prime Minister Nikol Pashinyan has possibly become the most unpopular leader in contemporary politics, facing tough protests from all corners of the Armenian public due to the Azerbaijani victory.⁴ Overall, Armenia, in a bitter fashion, has lost the war.

The third and final angle remains the diplomatic and international legal aspects of the Russia-brokered peace deal of November 10, 2020 that ended the war. While Baku has managed to re-capture a substantial proportion of its national territory and secure a strategic corridor connecting the Nakhchivan enclave to Azerbaijan proper, not all the occupied lands, including the city of Xankendi, have been returned to Azerbaijani control. Besides, the Russian peacekeeping contingent in the hot zone will equip Moscow with a stronger signature in the region by stationing a 2,000-strong forward-deployed force for at least five years.⁵ At this stage, Turkey looms large as a game-changer through its firm military alliance

with Azerbaijan and strong strategic capacity in the Caucasus, along with its planned participation in the joint monitoring efforts with Russia.

Although there is a significant political agenda to address, this report's primary scope remains the military-strategic assessment of the Azerbaijani combat performance during the war. The paper, therefore, revolves around defense analyses rather than diplomatic considerations. To this end, the report will first have a glance at the Armenian defensive positioning in Nagorno-Karabakh and the adjacent frontier. Second, the Azerbaijani concepts of operations, along with the effective dronization of the Azerbaijani military, will be explained through three consecutive sections. Finally, the report will conclude its findings as to the military trends observed through the war and what they tell about the future of modern warfare.



The Armenian Build-Up in the Occupied Azerbaijani Territories

Overcoming the Armenian build-up was not an easy task to accomplish. The Armenian defenses had been built over decades to deter the Azerbaijani leadership from launching a decisive push. Yerevan's approach to the occupied territories visibly showed the influence of Soviet military thinking and doctrines. The defense was prepared in-depth with echelons, fire-sacks (kill-zones in the Anglo-American lexicon), strongpoints linked to each other along the key terrain to form hardy 'defensive belts' and, finally, minefields to halt the adversary's advance.⁶ In fact, the harsh topography of Nagorno-Karabakh and the adjacent territories favored the defensive side to a considerable extent.

The Armenian occupation formations in Nagorno-Karabakh were

organically integrated with the Armenian Armed Forces. For decades, Yerevan had systematically transferred population, military and paramilitary personnel and weaponry from Armenia proper to the occupied territories of Azerbaijan.

Armenia is a heavily-militarized state with 24-month conscription and up to 15-year mobilization services for male citizens. Although it predominantly relies on Soviet-era weaponry and doctrine, the Armenian military can field a robust warfighting force with a large number of multiple-launch rocket systems (122mm Grad, 273mm WM-80 [China-manufactured], and 300mm Smerch rockets), heavy armor (including T-72 variant main battle tanks) and hundreds of artillery pieces.⁷ Additionally, many of the Azerbaijani military's possible advancement routes had been mined by the Armenian forces. At the time of writing, for example, Azerbaijani troops have been busy with de-mining efforts in Kalbajar.⁸ Likewise, the Russian peacekeeping contingent has been carrying out de-mining efforts in the city of Shusha, which had been occupied for decades.⁹

Open-source intelligence suggests that the Armenian defenses in Nagorno-Karabakh were heavily fortified and supported with complex tunnel/trench networks built in the mountainous terrain.¹⁰ From a military standpoint, the Armenian positions were dangerous for any offensive belligerent, posing the risk of inflicting severe casualties and disrupting the operational tempo of the offensive party. Armenia also fielded dangerous sniper capabilities. Weaponry captured by the Azerbaijani units revealed that in

addition to traditional Dragunovs (SVD) with an effective range of some 800 meters, the Armenian defensive enjoyed more potent Russian arms, including the Orsis T-5000 rifle with an effective range of 1.5km. Given the Soviet-Russian sniper school's concepts, these long-range assets could be deployed to halt and direct the adversary into the artillery fire zone, setting a combined arms ambush scene.¹¹ The Armenian side had also combat-deployed a large number of air defense systems to the area of operations to cripple Azerbaijan's close air-support aircraft. In other words, the Armenian military planners opted for preventing any blitz advances by the Azerbaijani Armed Forces.

The Armenians also enjoyed a notable strategic weapon systems arsenal in both offensive (SS-26 Iskander, Scud-B, and Tochka ballistic missiles) and defensive segments (S-300 strategic SAM systems) that could serve as an effective means of intra-war deterrence, namely the deterrence concept of controlling escalatory patterns within an ongoing conflict.¹² In fact, in the course of the war, the Armenian forces launched ballistic missile salvos several times, hitting Azerbaijan's major population centers like Ganja.



Armenian Tochka ballistic missile TELAR (transporter-erector-launcher) preparing for launch during the 2020 war. Being overwhelmed by Azerbaijan's defense technological edge, the Armenian side resorted to strategic weapons use on Azerbaijani population centers.



Ballistic missile blast site in the city of Ganja, Azerbaijan, October 17, 2020. The attack claimed the lives of at least 13 Azerbaijani civilians.¹³

Overall, the Armenian side had prepared its lines for decades. Significantly, following the April 2016 clashes, Yerevan had four critical years to augment its military posture in the occupied Azerbaijani territories. Russian arms, including high-end systems

such as the SS-26, kept pouring into the Armenian arsenal, and mobilization was maintained at the level of highest-alert since the outset of the war. The Azerbaijani Armed Forces had to overcome tough obstacles.

Into Hard Fighting: Assessing the Azerbaijani Armed Forces' Combat Performance

During the 2020 Nagorno-Karabakh clashes, the Azerbaijani side dominated the battle-space with a sophisticated technological edge in weaponry married to advanced concepts of operations (CONOPS). Before going into the details, one has to revisit two precedents to better grasp the Azerbaijani Armed Forces' new combat capabilities and doctrinal outlook.

The first analytical precedent is the April 2016 clashes, or the Four-Day War, between Azerbaijani and Armenian forces along the Nagorno-Karabakh front. At the time, the Azerbaijani military caught many analysts off guard by demonstrating an offensive posture and making tactical gains along the line of contact. We have two major take-aways from the Four-Day War. Above all, although it was marginal compared to the entire Armenian-occupied territories of Azerbaijan, “*changes in the pattern of territorial control took place for the first time since 1994.*”¹⁴ Furthermore, the Azerbaijani campaign introduced some defense-technology novelties to the Nagorno-Karabakh front, such as Israeli-made

Harop loitering munitions (kamikaze drones) and *Spike* fire-and-forget anti-tank missiles, which hinted at Baku's diligent military modernization efforts.¹⁵

The second analytical precedent remains, perhaps interestingly to many readers, Turkey's Operation Spring Shield in northern Syria, which took place in late February and early March, 2020. Spring Shield, in essence, was a punitive cross-border campaign to respond to the deliberate targeting of a Turkish contingent in Idlib by the Syrian Arab Air Force—in coordination with Russian Aerospace Forces—that claimed the lives of 36 soldiers.¹⁶

The military planning for Spring Shield centered on a simple but innovative CONOPS. The idea was to run an overwhelming war of attrition to wear down the northwestern buildup of the Syrian Arab Army. The operational art prioritized high tempo, minimal casualty, integration between land-based fire-support capabilities and drones,¹⁷ as well as systematic surgical strikes to overwhelm the adversary. The Turkish military used two principle unmanned aerial systems in its Idlib campaign: the Bayraktar TB-2 and the ANKA-S. Both systems enjoy 24-hour endurance in their missions, which remains a good standard for the Medium Altitude/Long Endurance (MALE) class. The long-endurance factor offered enough loitering time over possible target areas to keep the Turkish military's pressure sustainable.

The Turkish drones had a very large target set in northwestern Syria. The Syrian Arab Army and its accompanying paramilitaries

had a dense concentration of main battle tanks, armored vehicles, mobile low-to-medium altitude SAM systems, as well as artillery and multiple-launch rocket systems situated along the Idlib front.

Roketsan, the primary manufacturer of Turkey's rocket and missile systems, also played an important role in Spring Shield's success. During the campaign, Turkish drones used Roketsan's MAM-L and MAM-C smart munitions,¹⁸ weighing 22 and 6.5 kilograms, respectively. The primary munition of choice, MAM-L, offers versatile solutions against a broad target set through a variety of warhead configurations. Of the MAM-L warhead options, the tandem charge is designed to destroy land warfare platforms equipped with reactive armor, while the thermobaric variant is particularly effective against closed-settings and bunkers, and the high-explosive blast warhead is optimized for striking troop concentrations and light-armored platforms.¹⁹

Taking Out Armenia's Mobile Air Defenses: How Azerbaijani Drone Concepts Dominated the Campaign

In many ways, the Azerbaijani performance in the 2020 Nagorno-Karabakh clashes was a replication of Turkey's Operation Spring Shield in terms of its pronounced drone warfare aspects, and a continuation of the Four-Day War of April 2016 in terms of showcasing the defense-technology and CONOPS gap between the Armenian and Azerbaijani militaries, favoring the latter.

The first CONOPS aspect, through which the Azerbaijani Armed Forces mimicked the Turkish military's Syrian expeditions, was the systematic use of UAS against the adversary's low-to-mid altitude air defenses. In fact, during Operation Spring Shield, Turkey's unmanned platforms deliberately targeted the Syrian Arab Army's mobile surface-to-air missile (SAM) systems, most notably the Russian-manufactured modern Pantsirs, at the outset of the conflict.

During the offensive, the Azerbaijani military destroyed a large number of Armenian 9K33 OSA and 9K35 Strela-10 SAMs (SA-8 and SA-13s in NATO's designation) by using UASs, primarily the Turkish-made Bayraktar TB-2 and the Israeli-manufactured Harop/Harpy kamikaze drones. More importantly, the Azerbaijani military did so with a high operational tempo. In the very beginning of the conflict, at least nine mobile air defense systems were destroyed,²⁰ resembling the Turkish hunt for the Syrian Pantsirs. By October 7th, 2020, the Azerbaijani offensive had destroyed 60 SAM systems in total.²¹



The Azerbaijani Armed Forces targeting an Armenian mobile SAM (appears to be an OSA) by armed drones.²²

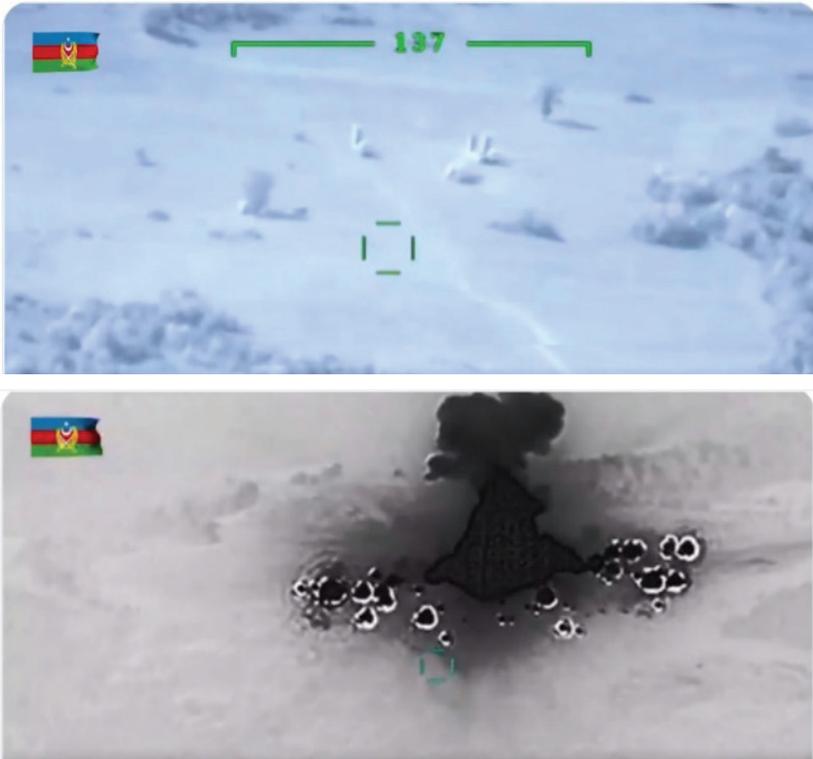
The Azerbaijani Military's Hunt for 'Bigger Fish:' Armenian Strategic SAM Systems and Ballistic Missile TELARs

In addition to its tactical air defense systems, the Azerbaijani campaign also scored more sensational hits. On September 30, an Armenian S-300 Russian-made strategic SAM system, which had been brought to the Nagorno-Karabakh front by Yerevan following the outbreak of the conflict, was destroyed by the Azerbaijani military, probably by using loitering munitions (kamikaze drones).²³ By mid-October, news sources claimed another S-300 hit, confirmed by the Azerbaijani Ministry of Defense.²⁴

Given below, the visuals from the S-300 strikes showcase the Armenian SAM-site configurations. The video upload suggests that the first strike was most likely carried out by loitering munitions with anti-radiation features. Interestingly, some sources claimed²⁵ that the blast-radius from the second strike hints at a bigger warhead, possibly an Israeli-made LORA quasi-ballistic missile with up to a 600 kilogram warhead, which would show the close coordination between Azerbaijani rocket & missile units and unmanned aerial platforms used for target acquisition and battle damage assessment,²⁶ although some other components (S-300 interceptors, fuel, rocket motors, etc.) could be the cause of the bigger blast radius.



Visuals from Azerbaijan's S-300 hit in late September, 2020. The open-source visuals demonstrate the Armenian SAM site configuration.



Visuals from Azerbaijan's second S-300 hit in mid-October, 2020. The blast radius, on the right, is larger than usual tactical armed drone munitions or Israeli-made loitering munitions.

Fast elimination of the mobile SAM systems at the very outset of the conflict partially deprived Armenian mechanized and motorized units of mobile short-range air defenses (M-SHORAD). This rapid shortfall gave Azerbaijan's UAS a window of opportunity to

extend their target set to the Armenian mechanized and motorized formations, as well as fire-support weaponry, more freely. A similar target acquisition pattern was also seen in Turkey's Operation Spring Shield.

On a separate note, the fighting in Nagorno-Karabakh also witnessed something exotic for the future of drone warfare. In October 2020, the Azerbaijani unmanned systems intercepted at least one Armenian Scud-B ballistic missile launcher.²⁷ The incident marked probably the first time in military history that UAS were used as 'mobile TELAR-hunters' on the battleground.



The wreckage of an Armenian Scud-B road-mobile launcher from an Azerbaijani drone strike.

Dronization of the Azerbaijani Military: A Closer Look into the Conventional Warfighting Performance of Unmanned Systems

In many engagements, Azerbaijani formations used the Bayraktar TB-2s and Israeli-made loitering munitions (kamikaze drones) to destroy the Armenian military's land warfare platforms. Resembling the Syrian Arab Army's almost helpless situation against Turkey's drone warfare campaign back in early 2020, the Armenian formations in the battleground lacked a meaningful counter-UAS capacity. Thus, just like Assad's forces confronting Turkey, the Armenian units could do little against Azerbaijan's UAS capabilities.

In the overture of the clashes, Azerbaijan's pressing drone warfare operational tempo eliminated more than 40 Armenian main battle tanks (T-72 variants), more than 15 infantry fighting vehicles (IFV) and armored personnel carriers (APC) and more than 30 pieces of artillery and multiple-launch rocket systems in total.²⁸ By mid-October, 2020, according to the official declarations, the Azerbaijani offensive had destroyed more than 190 main battle tanks and armored vehicles in total.²⁹ Open-source monitoring reported total Armenian losses in the main battle tank and armored vehicles segments at around 110 platforms during the same period.³⁰ By the end of the war, the same open-source intelligence outlets confirmed 190 main battle tank losses for the Armenians in total, along with some 100 armored personnel carriers and in-

fantry fighting vehicles,³¹ while Azerbaijan's official estimates suggested some 366 main battle tank kills.³² In any case, the numbers marked an impressive record for Baku.



The Azerbaijani military targeting an Armenian T-72 main battle tank with loitering munitions (kamikaze drones).³³



Azerbaijani drone (probably a Turkey-manufactured Bayraktar TB-2), targeting an Armenian multiple-launch rocket system (probably BM-21 Grad) on the Nagorno-Karabakh frontier, September 30, 2020.³⁴

In league with the driving concepts in Turkey's Operation Spring Shield, heavy land-based fire-support salvos, consisting of artillery and MLRS, accompanied drone warfare efforts in the Azerbaijani campaign.³⁵ More importantly, the Azerbaijani military demonstrated some advanced concepts such as night-time artillery salvos supported by target acquisition and reconnaissance activity conducted by unmanned systems.³⁶

The lethal combination of surgical strikes via drones and the overwhelming fire-power of intensive shelling had paid off by the second week of October, 2020. Various Armenian defensive positions were abandoned, leaving a vast number of arms to the Azerbaijani offensive.³⁷ In an effort to respond in the information warfare sphere, the Armenian Ministry of Defense explained that their units had conducted a 'tactical retreat' to lure the Azerbaijani troops into a follow-on artillery barrage trap.³⁸

The Armenian version of the story was amateurish in its explanation. First, while the Azerbaijani Ministry of Defense released various videos and pictures of the captured equipment and defensive positions following the Armenian retreat, Armenian official sources could not share any tangible evidence showcasing the professed deceptive maneuver. Second, from a military standpoint, expecting such an advanced maneuver, under heavy shelling, from units manned by conscripts and reservists would be very unrealistic. As a matter of fact, on October 7, 2020, the Armenian artillery hit their own tanks moving from Xankendi to the front-line, showing the lack of coordination between Armenian land-based fire-support and mobile units.³⁹



An Azerbaijani MLRS pounding the Armenian defensive line in Nagorno-Karabakh, September 30, 2020.⁴⁰

Baku's effective 'dronization' efforts resulted in major differences between the Armenian and Azerbaijani militaries' ways of warfighting. Anti-armor hits offer valuable conclusions in this respect. While the Azerbaijani Armed Forces used drones extensively for executing either direct strikes or ISTAR tasks (intelligence, surveillance, target acquisition and reconnaissance) on Armenian tanks,⁴¹ the Armenian units' primary weapons of choice against Azerbaijani platforms (tanks and other vehicles) were anti-tank guided missiles (ATGM).⁴² At the time of writing, this asymmetry between the two warring armies, as well as the sophistication of the Azerbaijani military, were noted in experts' writings, suggesting that "the density of sensors on the modern battlefield is changing the balance in combined arms warfare."⁴³

The last pillar of Azerbaijan's dronization was the UASs' role in information warfare. Resembling Turkey's social media activity during Spring Shield, as well as other Syrian and Libyan campaigns, the Azerbaijani Ministry of Defense systematically released drone footage from the battleground, dominating the 'infosphere.'

Key Findings

- ✓ The Azerbaijani military's combat performance has successfully demonstrated a good mix of information superiority, advanced combined-arms warfare skills, the technological edge of drone warfare and firm political leadership backing all of these features. Baku has successfully translated its defense economics into sustainable warfighting capability and, to a large extent, has managed to meet its objectives in the war.
- ✓ Probably the turning point of the war was the Aliyev Presidency's response to Armenia's intra-war deterrence escalatory strategy with ballistic missiles targeting Azerbaijani population centers. Instead of responding in kind, Azerbaijan opted to keep its efforts in the battleground.
- ✓ The Armenian defensive along the Nagorno-Karabakh front collapsed for a number of reasons. Among them, obsolescent conscription and mobilization patterns, chronic reliance on Soviet doctrines and, more importantly, the Armenian leadership's lack of modern warfare understanding loom large. While the Armenian build-up was robust, it was outclassed by Azerbaijan's defense technological edge married to its upper-hand in concepts of operations.
- ✓ Armenia's armor losses marked another important trend for the future of warfare. While the era of tanks still has some way to go, the era of tank formations without adequate counter-drone and organic, networked air defenses is definitely over, especially when facing advanced belligerents.
- ✓ Drone warfare played an essential role in Azerbaijan's overall warfighting capacity and military effectiveness in Nagorno-Karabakh. The Azerbaijani Armed Forces systematically used UAS against a rich target set that included Armenian mobile, short-to-medium range air defenses, land warfare weaponry and motorized troop

concentrations. Furthermore, Azerbaijan's Ministry of Defense extensively used drone footage in its information warfare campaign on social media.

- ✓ Turkey's defense technological and industrial base has reached a critical mass in its UAS design and production capacity. Capitalizing on their success in tactical and medium-altitude and long-endurance segments, Turkey's leading drone makers now produce higher-end systems with larger payloads, better sensors and a more advanced design philosophy, such as Akıncı and Aksungur. While Azerbaijan offers a very lucrative market for Turkey's next-generation drone warfare assets, these systems can give an unprecedented boost to the Azerbaijani military, marking a win-win procurement potential for both countries.

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About SAM

Center for Strategic Research of the Ministry of Foreign Affairs of the Republic of Turkey (SAM) is a think-tank and a research center which is chartered by law and has been active since May 1995. SAM was established as a consultative body to provide Turkish Foreign Policy decision makers with scholarly and scientific assessments of relevant issues, and reviews Turkish foreign policy with a futuristic perspective.

SAM conducts research, organizes scholarly events relevant to the ever expanding spectrum of Turkish Foreign Policy in cooperation with both Turkish and foreign academicians, its counterparts from around the world as well as various universities and government agencies. SAM provides consultancy to the foreign ministry departments as well as some other state institutions in foreign policy issues while also establishing regional think-tank networks.

In addition to its role of generating up-to-date information, reliable data and insightful analysis as a think-tank, SAM functions as a forum for candid debate and discussion for anyone who is interested in both local and global foreign policy issues. Increasingly, SAM has become a center of attraction since it successfully brings scholars and policy makers together for exchange of ideas in panels, in-house meetings, seminars and training programs for young diplomats.

SAM has a widening range of publications. Along with its traditional publication, Perceptions, which is a quarterly English language journal that hosts distinguished Turkish and international scholars within its pages, SAM has initiated Vision Papers which expresses the views of the Minister of Foreign Affairs of the Republic of Turkey, and SAM Papers that covers the current debates of foreign policy by various scholars.

With its commitment to contribution to the body of knowledge and constructive debate particularly in Turkish Foreign Policy, SAM will continue to serve as an indispensable think-tank and research center given its role promoting interaction and mutual benefits among the MFA, NGOs, other think-tanks and the broader scientific community and hence strengthen the human and intellectual capital of Turkey.



stratejik arařtırmalar merkezi
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