

The Role of Turkish Drones in Azerbaijan's Increasing Military Effectiveness: An Assessment of the Second Nagorno-Karabakh War

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ABSTRACT *This study focuses on Turkey as a rising drone power in the international arena in recent years. In this context, the article will scrutinize the case of the Second Nagorno-Karabakh War, which broke out on September 27, 2020. The Nagorno-Karabakh conflict, one of the frozen problems in the Caucasus region, was ended in favor of Azerbaijan less than two months later. Turkey took on a game-changing role in the region by supplying its ally Azerbaijan with unmanned aerial vehicles (UAVs) for use in the conflict, and significantly contributed to Azerbaijan's victory. Turkey's political, diplomatic, and military contributions to Azerbaijan will likely be discussed on the global agenda for years to come; this study will contribute to the literature on the role and impact of Turkey's military support, especially its drones, on Azerbaijan's Nagorno-Karabakh victory.*

Keywords: The Second Nagorno-Karabakh War, Azerbaijan, Armenia, Turkey, UAVs

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Introduction

The Second Nagorno-Karabakh War broke out on September 27, 2020, following short-term clashes between Armenia and Azerbaijan around Tovuz in July 2020. The war resulted in significant gains for Azerbaijan in the occupied Nagorno-Karabakh region and serious losses for the Armenian army. Turkey, which lent military and diplomatic support to Azerbaijan, played a major role in the retaking of Baku's occupied territories in the 44-day operation. Especially after Armenia's attack on Tovuz, Turkey clearly supported Baku, and there was a transition from rhetoric to action in the Nagorno-Karabakh conflict. Many different inventories were made available to Azerbaijan from among the Turkish defense industry's Unmanned Aerial Vehicles (UAVs). As a result, the *status quo* established by Russia in the region changed, and Armenia, which Moscow had supported for many years, lost to Azerbaijan in the field.

Turkish Bayraktar TB2 UAVs, which Turkey had used effectively in operations in Syria and Libya, caused heavy losses in the conflict, especially to air defense systems and mechanized troops. MAM-L-type laser-guided bombs produced by Roketsan, which these UAVs carried, also played a leading role in the Nagorno-Karabakh War. Turkey strengthened its ties with Baku by providing strong support to its ally and strategic partner, especially in the military and political spheres. By supporting Azerbaijan in solving its most significant problem, Turkey's success in the defense industry, which had already increased its credibility in the eyes of its allies and countries in the region, has once again been registered.

The recent conflict between Azerbaijan and Armenia over the disputed territory of Nagorno-Karabakh brought Turkey's unmanned aerial vehicles program to the forefront of the global agenda. Before going into detail on Turkish UAVs' leading role in the fighting, the first part of this article will give a brief background of the dispute and the process leading up to the Second Nagorno-Karabakh War. The second section will examine the factors behind Azerbaijan's decisive victory on national, regional, and international levels. Finally, the study will analyze how Turkish-made UAVs played a multifaceted role in determining the winner of the war and how these vehicles reflect credit on Turkey's status both regionally and internationally.

The Nagorno-Karabakh Conflict

Since the disintegration of the Soviet Union, Nagorno-Karabakh has been a disputed territory between the Azerbaijani and Armenian governments. The Nagorno-Karabakh conflict, like many other territorial disputes, has a

multi-faceted nature. Both nationalist and religious claims have been reported to be the causes of the conflict.² In some studies, ethnicity is also referred to as an excuse used by both parties for ethnic cleansing and forced migration.³ Religious beliefs, ethnicity, and factors associated with the Soviet past (borders, institutions, etc.) increase the complexity of the conflict. Both the Azerbaijani and Armenian sides construct their arguments on different grounds and, as a result, communicate a different narrative about the conflict.

Neither the Armenians nor the Azerbaijanis accepted the proposals of the Minsk Group, and the Four-day war brought no change to the status-quo

Many alternatives have been put forward to find a solution to the conflict over the years. These include a step-by-step solution, a package solution, a common state, incorporation of Nagorno-Karabakh within Azerbaijan with the highest level of autonomy and delaying efforts to settle its legal status until after finding a solution to all the other issues. Despite these efforts, no peace settlement had been achieved between the conflicting parties.⁴ A key barrier to resolving the conflict is the fact that both sides consider the problem absolutely in terms of territory; however, there is no universally recognized definition of the territory in question. Both parties define the physical territory differently based on political and historical associations and even future meanings.⁵

After the armistice reached in 1994, the most intensive clashes took place in April 2016, also known as the 'Four-Day War,' which was the most serious escalation in the conflict not only in terms of deaths but also in terms of military hardware. The escalation brought Azerbaijani and Armenian forces the closest to an all-out war in Nagorno-Karabakh since the 1994 armistice.⁶ The Minsk Group of the Organization for Security and Cooperation in Europe (OSCE), co-chaired by the U.S., France, and Russia, had launched some mediation initiatives in 1994, but it was not successful in finding a lasting solution. Neither the Armenians nor the Azerbaijanis accepted the proposals of the Minsk Group,⁷ and the Four-day war brought no change to the status-quo. The conflicting parties kept on investing in military hardware, longing for a change in the status-quo by means of an inter-state war. Finally, with overt support provided by Turkey, its strategic ally, Azerbaijan launched a large-scale war in Nagorno-Karabakh on September 27, 2020.

The clashes that arose due to the dispute over the control of Nagorno-Karabakh led to thousands of casualties on both sides and lasted about one and a half months; the conflict ended with the agreement announced on November 10, 2020. After Azerbaijan captured the strategically important city of Shusha, the Yerevan Administration had to admit defeat and withdraw

Turkey and Azerbaijan have a special bilateral relationship, inspired by ethnic, cultural, religious, and linguistic affinities, and often echoed by the slogan ‘one nation, two states’

had prevailed in the South Caucasus for 28 years was disrupted and a new process has begun.⁸ Within the framework of the agreement, Azerbaijan not only protected Fuzuli, Jabrayil, Zangilan, and Kubatli, which it liberated from occupation, but made Armenia agree to withdraw from the cities of Aghdam, Lachin, and Kelbajar, and a withdrawal schedule was determined accordingly. Thus, Azerbaijan liberated seven regions apart from Nagorno-Karabakh from occupation and managed to reclaim some of the territories it had lost in the first conflict through both war and diplomacy.⁹

Several factors help explain Azerbaijan’s military victory, but two of them are considered by observers to be ‘magic bullets:’ the substantial role of the UAVs supplied by Turkey and Israel, and Turkish senior military personnel’s advisory role in Azerbaijan’s operational plans and command.¹⁰ The point to be emphasized is that while the first war was between two armies built on a Soviet military legacy, the second occurred between an army still living in the previous century versus a modern army with western standards.¹¹ The second conflict was different, according to several analysts and former diplomats, because Turkey offered more direct support to Azerbaijan, and because of the scale of the fighting.¹²

Turkey and Azerbaijan have a special bilateral relationship, inspired by ethnic, cultural, religious, and linguistic affinities, and often echoed by the slogan ‘one nation, two states.’ Turkey provided its strategic partner with all of its resources after the first Armenian attack on the important energy center, Tovuz; Turkey’s support is one of the most significant factors that contributed to the resolution of the dispute with a military victory.¹³ Based on the Agreement on Strategic Partnership and Mutual Assistance of 2010, signed between Azerbaijan and Turkey, the two countries have pledged that they will support each other ‘by all possible means in case of ‘aggression’ by a third party, and have decided to hold joint military exercises.¹⁴ In keeping with that agreement, Turkey provided political, military, and diplomatic support to Azerbaijan throughout the conflict. The Turkish defense industry’s UAVs, as well as many other products, were made available to Azerbaijan, turning the course of the war significantly in the

from Karabakh completely. Armenian Prime Minister Nikol Pashinyan stated that the agreement was painful for Armenian citizens, but because of the course of the war and the insistence of the army, he took this decision. With a Moscow-brokered peace deal signed between Russian President Vladimir Putin, Azerbaijani President Ilham Aliyev, and Armenian Prime Minister Nikol Pashinyan, the status quo that

latter's favor and providing Azerbaijan with a military superiority difficult to match in the field.¹⁵

Factors behind Azerbaijan's Decisive Victory

Although the conflict had been simmering for thirty-two years, as of September 27, 2020, Azerbaijan had found very favorable ground for an operation to take its occupied territories back. The reasons behind the implementation of the operation and its conclusion in favor of Azerbaijan can be explained by factors on the national, regional, and international levels. First, the option of war had begun to be mentioned quite frequently by Azerbaijan in recent years, especially due to the failure of almost all negotiations. Azerbaijan's political status had strengthened since the early 1990s, and the Azerbaijani army had been transformed into a well-trained, disciplined, professional, and well-equipped force in recent years. The main factor that brought Azerbaijan to victory in Karabakh was undoubtedly its military superiority over Armenia. When the military forces and weapon systems of the two countries are compared, this superiority can be clearly seen.¹⁶

When the armament attempts of the two parties prior to the conflict are examined, it is evident that Azerbaijan gave priority to increasing the effectiveness of the maneuvering and fire support elements of its Land Forces and took steps to improve the force structure of its Air Force. Azerbaijan had acquired UAVs of almost all types, main battle tanks, armored combat vehicles, attack helicopters, various types of mortars, artillery and multi-barreled rocket launchers, anti-tank missiles, ballistic missiles, various air defense systems, fighter/bombers, and close support aircraft. Many projects had been implemented for the modernization of existing systems. Armenia had also made defense purchases, primarily consisting of main battle tanks, armored combat vehicles, multi-barreled rocket launchers, ballistic missiles, various air defense systems, fighter/intercept aircraft, and close support aircraft stand out. However, while Armenia also attempted to carry out modernization projects, these were relatively weaker initiatives compared to Azerbaijan's, both in terms of quality and quantity.¹⁷

Politically, Azerbaijan had lost confidence in the international community due to the ineffectiveness of the Minsk Group, particularly its failure to implement the UN Security Council resolutions that recognized the territorial integrity of Azerbaijan. The resolution of the conflict between Azerbaijan and Armenia had been left to the initiatives of the Minsk Group for nearly 30 years. Although the group should have been one of the most effective institutions, its reluctance in mediating the conflict for the last couple of decades is remarkable, instead of finding a solution and resolving the Karabakh issue. In addition to Russia's in-



Bayraktar TB2 manufactured by Turkey's Baykar Makina takes part in a military parade marking the end of the Nagorno-Karabakh military conflict in Baku.

VALERY SHARIFULIN / TASS via Getty Images

terests in the South Caucasus, which it sees as its backyard, the influence of the Armenian diaspora in France and the U.S. caused Baku to return without any result from the negotiations. Thus it seemed unlikely that the Minsk Group would have an impact on the future of the region.¹⁸

Timing is also an important factor; in 2020, almost none of the countries around the world could make the Karabakh issue a priority due to their intense struggle with the coronavirus pandemic. Moreover, since the dispute directly concerned Azerbaijan and Armenia, many countries paid little attention to the war. The Yerevan Administration had expected that the U.S., which is a member of the OSCE Minsk Group, together with Russia and France, would support it by actively participating in the process immediately after the operation started. As a critical consequence of this inattention, the Yerevan Administration's attempts to provide external support were interrupted at the very beginning of the war.¹⁹

Another significant factor behind Azerbaijan's victory was Russia's withdrawal of its support for Armenia, whose allegiance had been called into question by Pashinyan's pro-western statements. Russia wanted to punish the Armenian government in some way for his remarks, because of its political troubles with the Pashinyan Administration.²⁰ Moscow, fearing that the unsolvable and frozen conflict would lead to intervention by the western powers in the long term, emphasized that the Pashinyan Administration must leave five of the seven

Iran appeared uncomfortable with Israel's support for Azerbaijan and was concerned that the clashes in the borderland would affect the Azeri regions in the North of Iran

districts to Azerbaijan. In other words, Moscow had begun to actively spend time to solve the problem.

For its part, the U.S. remained passive and focused on its own internal agenda, rather than foreign policy, due to the 2020 presidential elections, precluding any possible political and military support for Armenia. After Azerbaijan undertook the operation to end the occupation of Karabakh, the Armenian Administration began to seek support from international organizations. However, it did not receive the expected support from either NATO or the EU. During the ongoing operation, NATO maintained its neutrality, merely calling on Azerbaijan and Armenia to negotiate. The EU similarly adopted an attitude of neutrality in the war between the two sides. Among the EU member states, only France got involved in the process due to the influence of the Armenian lobby and its interests in the region and provided political and military support to Armenia. Institutionally, the caution of the EU and many member countries toward the Karabakh issue can be understood within the framework of economic-political concerns. During the Second Nagorno-Karabakh War, the UN had remained consistent with its decision taken in 1993 for the withdrawal of Armenian troops from the illegally occupied Azerbaijani territories. UN Secretary-General Antonio Guterres called for an end to the conflict and an urgent return to negotiations. In this context, it was not possible for Armenia to find support from the UN.²¹

Another substantial factor affecting Azerbaijan's victory was Iran's dilemma regarding the conflict, and its political weakness caused by internal security concerns. Iran appeared uncomfortable with Israel's support for Azerbaijan and was concerned that the clashes in the borderland would affect the Azeri regions in the North of Iran. Although Iran ensured that the aid coming from Russia was transported to the Karabakh region from its border, it tried not to take part in the conflict directly due to internal security concerns. After the agreement was signed, although Iran has engaged in diplomacy with Baku and Yerevan, its influence in the region has weakened considerably.²²

Israel made a significant contribution to Baku's victory during the conflict; Tel Aviv provided support that was silent but no less formidably effective.²³ This support was mainly the result of beneficial military-technical collaboration on some of the most sophisticated arms exported by Israel, amongst them drones

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and missiles.²⁴ Israel is Azerbaijan's major arms supplier, with a nearly 70 percent share of the country's defense imports.²⁵ Almost the entire range of Israeli drones are included in the Azerbaijani arsenal.

Last but not least, Turkey's clear support for Azerbaijan's military operations is evident in a number of high-level statements. President Recep Tayyip Erdogan pointed out that the Turkish nation stands by its Azerbaijani

brothers as usual, and that they will continue to strengthen their solidarity. Likewise, the Republic of Turkey Ministry of Foreign Affairs stated that "Azerbaijan will definitely use its right of self-defense to protect its citizens and its territorial integrity. In this context, Turkey will always provide Azerbaijan with full support." Foreign Minister Mevlut Cavusoglu stated that Turkey stands by Azerbaijan both on the field and around the negotiation table.²⁶ As a result, with the help of Turkey's military and diplomatic support, Azerbaijan liberated the occupied territories of Baku at the end of the 44-day operation. The Turkish defense industry's UAVs and many other inventory items were made available to Azerbaijan and turned the course of the war significantly in its favor. The effect of Turkey's advanced and sophisticated defense industry on Azerbaijan's Karabakh victory needs to be explained in detail.

Turkey's Rise as a Drone Power

The enhancement of indigenously developed technologies is highly critical for Turkey, a country that once relied heavily on foreign technology to increase its military power, not only in the fight against terrorism but also in terms of acting independently to acquire strategic leverage over its rivals. One of the major developments for Turkey in the last decade is that it has been leaping forward in developing its defense industry to strengthen its military power fortifications. The basic principles that constitute the backbone of Turkey's defense policy are to minimize dependence on foreign countries by becoming self-sufficient and to become a fully autonomous country in international politics by developing a military with a high deterrence capacity. Turkey's defense industry is essential in the country's quest to achieve these goals and is thus at the center of Turkey's overarching strategy of being entirely independent in the global arena with a fully-equipped military.²⁷ Over the last decade, significant progress has been made in the development of UAV systems and subsystems, and in increasing the necessary human resources and know-how.²⁸ Turkish defense businesses have created armed UAVs that are virtually as good as those made by established arms manufacturers in the U.S. and Israel in less than ten

years. Today, Turkey is not only at the top of the list of new drone users but is also a major drone manufacturer.²⁹

Studies on the development of UAV systems in Turkey and their entry into the Turkish Armed Forces (TAF) inventory began at the end of the 1980s in parallel with global technological developments. Due to the lack of local procurement options, outsourcing was initially adopted as the basis of Turkey's UAV acquisition strategy. In 1989, the Banshee target drone produced by Meggitt began to be used for the first time by the TAF. In addition, Germany gave Turkey five of its CL-89 surveillance drones in 1994. Nevertheless, due to logistical problems and in-flight accidents, these were removed from the inventory in a short time and discontinued.³⁰ The most serious attempt to enhance Turkish Armed Forces inventory for UAV systems was made with the purchase of American GNATs (the 6 GNAT-750 and later the 2 I-GNAT) produced by General Atomics in 1995, in the context of Turkey's anti-terrorism policy. These were considered the first real UAVs possessed by the TAF and were used by its Land Forces until 2005 for tactical surveillance and support tasks.³¹

Parallel to the procurement of GNATs, Turkey began to take steps to develop similar vehicles with its own domestic and national resources. Mainly due to various problems caused by foreign dependency (international/global crises, problems in the supply of subsystems subject to various restrictions, dependency in maintenance/operation, knowledge deficiency of critical subsystems/software, etc.), Turkey focused its energy on the development of domestic and original systems to supply the UAV systems needed by the Turkish Armed Forces as quickly as possible and with minimum cost.³² Turkey made tremendous strides in its national UAV development program over the past decade, producing UAVs capable of effective surveillance, reconnaissance, and fire support in the fight against terror. Under the Presidency of Defense Industries, a domestic UAV development and production activities started in the early 1990s and intensified especially after 2004. Turkey began to support its local weapons sector to develop UAV production capabilities. The Turkish aviation and space industry then began to produce several prototype UAVs, such as TAI- UAV-X1 (1992), the first domestically produced UAV; *Turna-Keklik* (1996); *Pelikan-Martı* (2003); *Gözcü* (2007); *Öncü* (2008); *Şimşek* (2012) and ANKA (2013).³³

In addition to the increasing terror and security concerns of the 2000s, developments in technology increased the demand for UAVs. In light of its aging GNAT 750 UAVs, Turkey decided to purchase Heron-type UAVs from Israel. However, there were constant problems; a few of these vehicles became unusable because they crashed, and a few could not fly due to technical defects. Thereupon, some of the Herons were returned to Israel. Meanwhile, Turkey demanded UAVs from the U.S., its NATO ally, but these demands remained

unanswered. As a result, Turkey accelerated its domestic UAV projects to respond to these setbacks³⁴ and fulfill the needs of the TAF. Turkish manufacturers begin to accelerate their research, development, and production on UVS systems. Turkish Aerospace Industries (TUSAŞ) has started to work on ANKA and Baykar begun works on the Bayraktar TB2 platform. As of 2020, the number of Turkish military UAVs/UCAVs has reached 144 with the latest deliveries (110 Bayraktar TB2, 24 ANKA, and 10 Gözcü-1 Heron).³⁵

Turkey has become an operator and exporter of high-quality drone systems in just over a decade. As a significant turning point in Turkey's domestic drone program, the Bayraktar (Flagbearer) mini was launched in 2005 by the Kalekalıp-Baykar Makina Joint Venture and entered TAF's inventory as the first indigenous unmanned aerial vehicle in 2007.³⁶ Turkey's first export agreement was signed with Qatar for this type in 2012. In addition, Baykar initiated Malazgirt rotary-wing mini-UAVs in 2006 and delivered them to the TAF in 2009.³⁷

In January 2012, the second phase, involving the development and serial production of Bayraktar Tactic Block 2 (TB2) began. The first flight of the Bayraktar TB2 was on April 29, 2014. During its first day in the air, Bayraktar set a record, remaining airborne for 24 hours 34 minutes while reaching an altitude of 8,230 meters.³⁸ Another breakthrough came at the end of 2015 when a TB2 successfully test-fired a rocket from an altitude of 16,000 feet and succeeded in hitting its target. It was the country's first armed UAV flight, and it received praise from both the Turkish military and the media. A study by *The Guardian* alleged that although the armed TB2 is locally manufactured, it could not have reached the point of being able to shoot a rocket without the assistance of the United Kingdom. This claim was refuted by Selçuk Bayraktar, who stated that his company designed its own "much more advanced model at an affordable cost" instead of buying a critical missile component from Brighton-based EDO MBM Technology.³⁹

In addition to being used operationally by the TAF, the first six indigenous Bayraktar TB2s were exported to Qatar in 2018, the first export of this type. Turkey's second export customer was Ukraine, whose first batch of six drones was delivered in 2020. Turkish Aerospace Industries signed a contract with Tunisia for TB2s, and Poland signed a contract in May 2021 to purchase 24 Bayraktar TB2s. Poland will be the first NATO and EU member to purchase TB2s from Turkey; these will be the first Turkish armed UAVs to appear in the European airspace.⁴⁰ European countries such as Albania, Belarus, England, Bulgaria, the Czech Republic, Hungary, and Poland, with which Turkey shares good defense relations, are among the countries likely to procure these UAVs.⁴¹

The Turkish firm Baykar has finished building the second prototype of the Bayraktar AKINCI (Raider) combat drone. The AKINCI belongs to a new

class of 'heavy' drones; it has a wingspan of 20m and is powered by two Ukrainian AI-450 turboprop engines.⁴² Baykar started working on the development of the AKINCI in May 2017. The AKINCI UAV conducted its first flight in December 2019; it can hang in the air for 24 hours and can reach up to 40,000 feet (12,192 meters). It can carry a 1,350 kg of 'useful load,' namely various 'made in Turkey' types of ammunition, rockets, and missiles, such as the MAM-L, MAM-C, Cirit, LUMTAS, Bozok, MK-81, MK-82, MK-83, winged direction kit-MK-82, Gökdoğan, Bozdoğan, and SOM-A.⁴³

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In a similar manner, TUSAŞ has contributed to Turkey's UAV program. TUSAŞ's ANKA (Phoenix) project was initiated in 2004 and conducted its first flight in December 2010. The research and development process continues for designing a high-altitude, long-endurance version of the ANKA UAV. In recent years, Turkish drone developers have openly achieved significant technical milestones. The ANKA conducted Turkey's first satellite-controlled airstrike in August 2018 and completed its first flight with a domestically built engine in December. This was a crucial step in establishing a sustainable domestic manufacturing base. Both the Bayraktar TB2 and the ANKA set new endurance records in 2019, each flying for more than 24 hours.⁴⁴ With the ANKA and other unmanned air vehicles, Turkey has achieved production of UAVs, including armed UAVs, solely with internal resources.

Turkey's success has been widely circulated in the foreign press. For example, according to *Le Monde*,⁴⁵ Turkey has become one of the world's leading manufacturers of armed UAVs in just 15 years. In a report on armed unmanned aerial vehicles, the newspaper investigated Turkish armed drones under the heading "A Technology at the Service of Turkish Foreign Policy." "With the goal of competing with the U.S., Israeli, and Chinese models, the country has taken its place among the world's major producers in just 15 years," the article stated, noting that Turkish drones are becoming more and more effective and affordable, have been utilized in cross-border operations since 2016 and have shifted the balance of power not just in Libya but also in Nagorno-Karabakh.⁴⁶

The Guardian reported that Bayraktar armed unmanned aerial vehicles had rapidly altered the military balance in the region. *The Telegraph* pointed out that the nature of war had changed. *The Financial Times* noted that Turkey, as a rising drone power, can compete with the U.S., Israel, and China in the field of armed UAVs. *Die Welt* mentioned that Turkey has become one of the leading countries in UAV technology and has achieved military successes. *The French Liberation* referred to the armed UAVs as a symbol of Turkey's power and in-

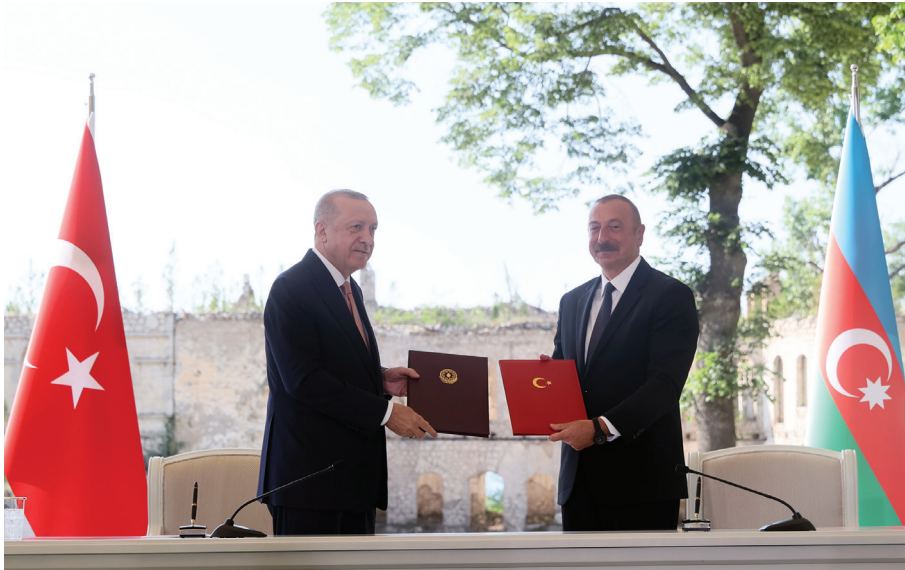
Azerbaijan's President Aliyev praised the capabilities of the Turkish drones, stating that they reveal Turkey's strength and empower them as well

new owners of the sky.' Turkish drones have been frequently featured in the Israeli and Greek media. All of this attention is the result of the dramatic story of the production of Turkey's UAVs, their breaking new ground in the history of warfare, and their decisive role during conflicts in the region.⁴⁷

Unique and domestic UAVs, both armed and unarmed, produced by the Turkish defense industry provide a major contribution to security forces and play an important role in Turkey's technological development, success, and deterrent profile in international platforms. The outstanding success achieved with these vehicles in the Euphrates Shield, Olive Branch, and Peace Spring operations significantly increased the number of these systems in the inventory and their export potential.⁴⁸ Turkish firms have become notable drone makers and exporters, and have been rivaling established drone producers like China, Israel, and the U.S.⁴⁹ As exports of Turkish drones increase, China's military drone export sector has been challenged, and the military balance of power in the Caucasus, Middle East, and North Africa has been affected. Turkish drones have drawn worldwide attention and have increased their global visibility due to their effective usage in Syria, Libya, and most recently Nagorno-Karabakh. The drones have been called a 'game-changer' by UK Defense Secretary Ben Wallace.⁵⁰

The Role of Turkish Drones in the Second Nagorno-Karabakh Conflict

The Nagorno-Karabakh dispute has long occupied an important place in Turkish foreign policy. Throughout the years, Ankara's support for Baku has increased incrementally. Greater Turkish support for Azerbaijan was apparent in the latest war between Azerbaijan and Armenia, as Turkish-made armed drones took the lead in Azeri attacks. Turkish drones obviously played a significant role in Azerbaijan's offensive⁵¹ and paved the way for its victory.⁵² Azerbaijan's President Aliyev praised the capabilities of the Turkish drones, stating that they reveal Turkey's strength and empower them as well. He also underlined that Azerbaijan's military wishes to learn from the Turkish military and simulate it. Turkey provided drones to Azerbaijan for 2020 only; however, to be able to produce these drones by local resources may be a goal for Azerbaijan soon.⁵³



President of Turkey Erdoğan and President of Azerbaijan Aliyev signed the “Shusha Declaration” between the two countries on June 15, 2021.

HALİL SAĞIRKAYA / AA

Analysts explain Azerbaijan’s victory on the battlefield with the help of technology, tactics—and Turkey.⁵⁴ Social media posts made by Azerbaijan’s Defense Ministry at the start of the conflict indicated that Azerbaijan had procured the Turkish Bayraktar TB2, a medium-altitude, long-endurance unmanned aerial combat vehicle capable of remote-controlled or autonomous flight operations and was using them effectively in offensive missions. During an interview with *France24* on October 15, in answer to the question, “How many Turkish UAVs do you have?” Azerbaijani President Ilham Aliyev stated, “We have enough to achieve our targets. I think you can understand that this is information I prefer not to disclose.” He pointed out how Turkish UCAVs made a difference in the conflict, stating that his forces had destroyed \$1 billion worth of military equipment belonging to the Armenian forces with the UCAVs they had bought from Turkey.⁵⁵

According to open sources, Azerbaijan decided to purchase scores of Turkish-made armed drones in June 2020, just weeks prior to the outbreak of the Nagorno Karabakh conflict. Military analysts claim that Azerbaijan was clearly keen to use the Turkish drones to win military leverage over Armenia and to reshape military balances in the region in its favor. According to several reports,⁵⁶ Azerbaijan explained its plans to purchase, and then actually acquired Turkish-made armed drones and used them to great effect in a time span of about four months. During the violent conflicts along the Karabakh front on September 27, Azerbaijan displayed modern drone warfare capabilities, showing its defense-technology edge over the Armenian army. It is worth noting that Turkey not only provided UAVs for its natural partner in the South Cau-

Turkey's position in Azerbaijan shows not only its capacity to create an army, but also its ability to contribute more to the transatlantic alliance in its territory and beyond

casus but also supplied full robotic warfare doctrine and an operating concept (CONOPS).⁵⁷ In addition to Turkish Bayraktar TB2s, Azerbaijan purchased many different types of surveillance and kamikaze drones (loitering munitions) designed and produced by Israel.

Analysts state that Nagorno-Karabakh is an obvious example of the ways in which UAVs and drones can affect future warfare and conflict environments in cases where no action is taken. And given their performance in the conflict, the demand for UAVs made by Turkey is expected to rise. There is no official data on Turkey's total UAV and armed UAV exports. However, Turkey's exports in the defense and aerospace sector increased by 34.6 percent in 2019 compared to the previous year, reaching \$2.74 billion. In 2023, this figure is expected to reach \$10 billion.⁵⁸

The Turkish Bayraktar TB2 demonstrated the versatility of Turkey's UAVs. Turkey had already benefited from these drones in Syria and Libya; the TB2 likewise performed effectively in attacking and damaging enemy defenses in Nagorno-Karabakh. In addition to providing identification and targeting data, TB2s carry smart, micro-guided munitions to hit targets on their own. To create several propaganda videos, Azerbaijan installed high-definition cameras on the TB2s; in Baku, videos showing attacks on Armenian forces and their apparatus were posted online and displayed on digital billboards.⁵⁹ Unlike the Israeli-made kamikaze drones supplied to Azerbaijan, Turkey's drones may be used multiple times. During the battle, these drones proved to be technologically superior to some of Armenia's outdated Russian military hardware and presented a significant challenge to Armenia's dependence on trenches and traditional means of defense.⁶⁰

Open-source data show that the Armenian army lost more than 40 percent of its equipment inventory in the conflict. The use of UAVs, especially the Turkish Bayraktar TB2s and kamikaze drones, caused the gradual destruction of the Armenian army. At the beginning of the war, Armenian air defense systems and early warning radar arrays were eliminated by means of drones, and a large maneuvering area was created for UAV operations. Afterward, these drones intensified their attacks on Armenian ground forces, which were deprived of their air defense umbrella. At this stage, with the target intelligence obtained by the UAVs, effective attacks on the strategic elements of the Armenian army with artillery and ballistic missiles were carried out.⁶¹ Azerbaijan State University of Economics (UNEC) researchers calculated the extent of the Armenian army's material losses in weapons and vehicles during the 44-day

war; according to the UNEC Institute for Economic Research, \$4.8B worth of Armenian arms were destroyed in the Karabakh war.⁶²

Accurate data is not available totally the personnel casualties of the parties in the war, due to conflicting figures. As a result of the operation carried out to save the occupied territories, Azerbaijan's Defense Ministry stated that 2,783 soldiers had lost their lives, 1,245 soldiers were injured and more than 100 soldiers are still missing.⁶³ However, Armenia claims that the number of Azerbaijani soldiers who lost their lives in the war is 7,630.⁶⁴ Alina Nikoghosian, the spokesperson of Armenia's Ministry of Justice, shared on her social media account that they lost 2,317 soldiers in the war.⁶⁵ However, there are serious questions about the accuracy of this information. Mikayel Minasyan, Armenia's Former Ambassador to the Vatican, declared that 4,750 Armenian soldiers lost their lives in the war and that the report of the Ministry of Defense on this point had been presented to Prime Minister Pashinyan.⁶⁶ Moreover, there are analyses that find even this figure too optimistic. Especially in the Turkish media, accounts have been published that the loss of the Armenian Armed Forces had reached 13,000, based on military sources.⁶⁷ In any case, there is no doubt that the Armenian side's losses were more than the figure given by Nikoghosian.

Due to the conflicting figures, it is not possible to speak with complete accuracy about the weapons, vehicles, equipment, and materials lost during the war either. However, although there are some contradictions among the figures, independent observers agree that Armenia suffered heavy losses. A detailed list of the destroyed and captured vehicles of both sides can be seen below, according to a report published on Oryx Blog with the signature of Stijn Mitzer, which was prepared based on data such as videos and photographs published on the internet, using completely open-source intelligence collection techniques. In summary, when the economic and demographic structure of Armenia is considered, it is clear that it will take years for the heavy losses to be replaced.

Considering their effect, it would not be over the top to draw an analogy and designate the 'leading actor' of the 2020 Karabakh War to be the UAV/UCAV systems sent to the front line by the Azerbaijan Armed Forces.⁶⁸ Azerbaijan had been procuring unmanned aerial vehicles of almost every type from Turkey and Israel over the past 10 years, and used these systems extensively in the war for reconnaissance, surveillance and intelligence, and for target detection and marking. However, what really stands out about these vehicles is their high performance in precision-guided attack missions. In this respect, UAVs/UCAVs are preferred for the destruction of air defense systems and command-control centers. They were used against all targets detected on the battlefield, such as tanks, armored vehicles, cannons, and open infantry. It

should be especially emphasized that there was one ballistic missile launch vehicle among the destroyed platforms. The destruction of this critical target, the images of which were shared on social media, was recorded as the first documented outcome of an armed UAV against a ballistic missile.⁶⁹

A Detailed List of the Destroyed and Captured Vehicles		
Type of Vehicle/Unit	Armenia	Azerbaijan
Tanks	144 destroyed; 5 damaged; 100 captured	33 destroyed; 18 damaged; 1 abandoned; 1; 4 captured
Armored Fighting Vehicles	26 destroyed; 50 captured	6 destroyed; 2 damaged; 7 abandoned; 9 captured
Aircraft and Helicopters	2, of which destroyed: 2	13 destroyed
Unmanned Aerial Vehicles	6 destroyed	22 destroyed; 4 captured
Trucks, Vehicles, and Jeeps	303 destroyed; 10 damaged; 351 captured	32 destroyed; 18 damaged; 8 abandoned; 6 captured
Self-propelled Anti-tank Missile Systems	4 destroyed; 13 captured	—
Towed Artillery	131 destroyed; 10 damaged; 90 captured	—
Self-propelled Artillery	21 destroyed; 8 captured	—
Artillery Support Vehicles	1 destroyed; 2 captured	—
Multiple Rocket Launchers	717 destroyed; 7 captured; 1 abandoned	—
Ballistic Missiles	1, destroyed: 1	—
Mortars	9 destroyed; 45 captured	1 captured
Anti-tank Guided Missiles	119, of which destroyed: 3, captured 116, of which 19 launcher or optic	—
Man-Portable Air Defense Systems	6 captured	—
Infantry Fighting Vehicles	—	45 destroyed; 6 damaged; 10 abandoned; 9 captured
Multiple Rocket Launchers	—	1 destroyed; 1 damaged
Jammers and Deception Systems	3, of which destroyed: 3	—
Radars	13 destroyed; 4 captured	—

Source: Stijn Mitzer and Joost Oliemans (2020)⁷⁰

Azerbaijan's effective use of UAVs has had a serious impact globally. While reducing the victory of Azerbaijan entirely to these vehicles would be overly simplistic, it is certain that the excessive number of vehicles and materials destroyed by the UAV/UCAV systems, and perhaps more importantly, the shock effect and psychological damage they inflicted on the Armenian soldiers

played a dominant and decisive role in Azerbaijan's victory. In the upcoming period, UAVs and the measures that can be taken against these systems will be an important agenda item for Europe, given their successful implementation in the 2020 Karabakh War. Indeed, immediately after the conflict, Gustov Gressel, a member of the European Council of Foreign Relations, drew attention to the weaknesses of the

European armies in terms of anti-drone jammers and base-protection assets and said that if they did not act, the small and medium-sized member states, in particular, would fare as miserably as the Armenian army had in a modern kinetic war.⁷¹ Moreover, an article published in *Foreign Affairs* after the war mused that drones make armed conflicts 'tempting and cheap'.⁷²

Turkey's robust support for Azerbaijan is compatible with its proactive foreign policy in the Middle East and the Mediterranean. In Nagorno-Karabakh, where the OSCE Minsk Group could not reach any solution despite UN resolutions, Turkey's military, political, and diplomatic initiatives brought results. Azerbaijan's victory in the 44-day Karabakh War is regarded as the most significant achievement of Turkish foreign policy in 2020. Turkey is now concentrating on strengthening its political, military, and economic clout in the region.⁷³ According to President Erdogan, Ankara's support for Azerbaijan was part of Turkey's pursuit of its 'deserved place in the world order' alongside the U.S. and Russia.⁷⁴

Turkey's rising entrance into the Azerbaijani drone market is crucial in terms of many factors. From a geopolitical point of view, it represents a new period in the 'two states, one nation' discourse, which provided the intellectual framework for stronger bilateral relations between the two countries. Developments in Turkey toward dronization are now being supplied to Azerbaijan, becoming a military game-changer in Karabakh. From a defense-economics point of view, the TB-2 establishes a strong position for Turkey in the Azerbaijani arms industry, which Israel had previously dominated.⁷⁵

Turkey's most critical contribution to Azerbaijan's victory in the Second Nagorno-Karabakh War was the drones it transferred and the military advisors it reportedly provided, as well as three decades of careful army development. Turkey's army-building capability was obviously one of the major factors leading to Azerbaijan's success, and the most noticeable contrast between the first and second Nagorno-Karabakh War. While the first war took place between

Even countries like South Africa, Poland, and Belarus are building drones similar to Turkey's, and they appear to be readily developing technology that until recently was almost exclusively in the hands of the U.S. and Israel

Drones seem to have a significant place in Turkish foreign policy, as they are not only a critical military asset but also an essential foreign policy tool

two forces with a Soviet military background, the second was between an army still existing in the previous century and a western-standard new army. Turkey's position in Azerbaijan shows not only its capacity to create an army, but also its ability to contribute more to the transatlantic alliance in its territory and beyond.⁷⁶

Conclusion

Turkey has become one of the world's most prolific users of UAVs, reflecting the country's prestige and power. Turkish-made UAVs have played a determining and transformative role in the removal of military threats in its nearby geography, and in the increase of Turkey's military influence and potential. As Turkish defense companies continue working hard to develop the next generation of drones, priorities include greater range and the ability to use heavier ammunition, and the aim to manufacture them as much as possible domestically. The Turkish army seeks to be entirely self-sufficient by 2023. Turkish drones have demonstrated their worthiness in war, are far cheaper than American or Israeli models, and are not subject to import restrictions. However, other countries are not far behind. China, Iran, and Pakistan have also developed effective drone industries in the last few years and are manufacturing several impressive high-end attack models. Even countries like South Africa, Poland, and Belarus are building drones similar to Turkey's, and they appear to be readily developing technology that until recently was almost exclusively in the hands of the U.S. and Israel. By achieving domestic production of many components of its drones, Turkey has decreased its heavy dependence on foreign companies that may be prohibited from exporting drones and has increased its ability to avoid international pressure and project its military power outside its borders.

Drones seem to have a significant place in Turkish foreign policy, as they are not only a critical military asset but also an essential foreign policy tool. However, the international community has begun to discuss Turkey's drone's industry in gritty detail. While the prospects of Turkey's domestic UAV production appear strong, certain challenges remain. Regrettably, Turkey's ambitious drone industries have matured at a time when the country's economy is teetering on the brink of severe macroeconomic and financial imbalances. And there could be some technological bumps on the way; not all Turkish drone systems are entirely made in Turkey (some sensor equipment from Canada and target technology for missiles from Germany may have been imported). Thus, foreign components and Turkey's political disputes with the countries

that produce them could disrupt the production cycle.⁷⁷ For instance, the Canadian government's decision to halt exports of vital drone parts to Turkey in October 2020 brought attention to Ankara's continued efforts to establish a self-sufficient defense industry. Furthermore, in August 2021, 27 members of the United States House of Representatives wrote to Secretary of State Antony Blinken, claiming that Turkey's UAV production has disrupted the region's political balance and damaged American interests, urging that some steps be taken to limit it.⁷⁸ A cash-strapped economy and potential technological glitches may block the further progress of Turkey's remarkable drone industry.⁷⁹

The Nagorno-Karabakh conflict provided an opportunity for Turkey at a time when major powers of the world were generally concerned with domestic affairs and the COVID-19 pandemic, including its ensuing economic issues. In this environment, Turkey changed the *status quo* in Nagorno-Karabakh. Today, Turkey has a bigger role to play both in drone power development and in the South Caucasus. Turkey has demonstrated its military capabilities and that it is ready to provide for its allies. The latest conflict was a clear indication of Turkey's increasing role in the region, which is expected to continue to expand. ■

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