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Turkey's Giant Leap: Unmanned Aerial Vehicles

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The failed coup attempt of July 15, 2016 is acknowledged as a milestone for domestic Turkish politics, resulting in the centralization of power and which also caused substantial changes in foreign policy. President Recep Tayyip Erdoğan has adopted a very hawkish and interventionist foreign policy doctrine since then. In this new period, Turkey began to rely on its military power and did not hesitate to use force frequently. The Turkish Armed Forces (Türk Silahlı Kuvvetleri - TSK) carried out this independent foreign policy framework and broadened its area of operations to various theaters of conflict, including Iraq, Syria, Cyprus, the Eastern Mediterranean, Qatar, Somalia and Libya. Inevitably this expansionism entailed political criticism and weapons embargoes¹ from the West – from France and Germany in particular – while also significantly increasing the probability of engaging in an armed confrontation. This increased risk pushes Turkey to lower its dependence on its traditional weapons providers, the United States and Germany.

As a NATO member since 1952, Turkey's military inventory is highly dependent on Western military technology. Therefore, after having experienced arms embargoes in the past following its military intervention in Cyprus (1974), Ankara began to seek independence from its traditional weapons providers. Turkey launched various "made in Turkey" armament projects such as the Milgem (national war ship - completed), Altay (Tank - under progress), Hisar and Siper (anti-ballistic missile systems - under progress) and unmanned aerial vehicles (UAVs).

During the "Operation Spring Shield" that took place in Syria's Idlib province last February, Turkish-made Bayraktar UAVs proved themselves in battle, thanks to high hit rates and maneuverability vis-a-vis the Russian Pantsir anti-air defense

mechanisms. Despite this success, Turkey's independence in UAV production was not realized overnight. Due to lack of technology and expertise Ankara had to rely on its NATO allies and Israel for a long time.

The Rise of the UAVs

Due to the low-intensity conflict with the Kurdish Kurdistan Workers' Party (Partiya Karkeren Kurdistan - PKK) in the eastern Anatolia's mountainous topography, the TSK felt the necessity to be equipped with UAVs. Ankara likewise understood the various advantages of UAVs: the ability to mark targets, defend territory from the air, and to conduct various reconnaissance, surveillance, sea patrolling, and search and rescue missions.

For the first time in 1989, the Banshee target drone produced by Meggitt began to be used by the TSK. Later in 1993, Germany gave away five of its CL89 Canadair surveillance drones. However, due to logistical problems and crashes these were also discontinued.²

Then Turkey replaced those with American GNATs.³ These were considered the first real UAVs possessed by the TSK. During this period, in order to acquire production capabilities, Turkey began to encourage its local weapons sector to take part in the production process of UAVs. The Turkish aviation and space industry then began to produce various prototypes of UAVs such as: İHA-X1 (1992), Turna-Keklik (1996), Pelikan-Martı (2003), Gözcü (2007), Öncü (2008), Şimşek (2012) and ANKA.⁴

However Turkish achievements then did not fulfill the needs of the TSK. Therefore, in order to overcome this gap Turkey decided to purchase UAVs from Israel. In 2008, Turkey bought 10 Heron UAVs from Israel for 183 million dollars.⁵ One of the most important factors for Turkey to choose the Israel instead of the American Predator was Jerusalem's agreement to install Turkey's Aselsan-built "Aselfir300T" electro-optical reconnaissance and surveillance system in exchange for the UAVs. Despite this deal, according to Turkish sources the Israeli Herons did not meet the demands of the TSK. According to the same sources, three of the Herons crashed and the rest suffered from logistical problems. Additionally, diplomatic tension between the two countries was said to have made the Israeli side more reluctant to provide solutions to Turkish demands.⁶

The friction between Jerusalem and Ankara persuaded the Turkish decision makers to end their UAV dependence on Israel. They called on Turkish UAV manufacturers: Baykar, Directory of Defense Industry, Air Command, Turkish Aerospace Industries (TUSAŞ), and Vestel Defense.

Baykar

Under President Erdoğan's son-in-law, Selçuk Bayraktar,¹ who is also known with his nickname "Ebu SİHA" (The father of armed UAVs), Baykar Defense can be considered the most important Turkish UAV manufacturer.⁷ In 2000, the Bayraktar family established their first workplace in the problematic Şırnak province in order to face the national security challenge of the Kurdish PKK's guerilla warfare in the mountains of eastern Anatolia. During the first years of their work Baykar managed to produce the mini Bayraktar UAV (The Flagbearer) that entered to TSK's inventory in 2007. In 2012, this UAV was exported to Qatar. The satisfactory results of this first prototype paved the way for other projects. In 2009, Baykar managed to deliver a rotary-winged mini robotic Malazgirt unmanned helicopter to the TSK. However, the TSK removed them from its inventory later on due to technical problems.⁸

The real breakthrough for Baykar was the first flight of the Bayraktar Tactic Block 2 (TB2) on April 29, 2014. On its first day in the air Bayraktar proved itself by remaining airborne for 24 hours 34 minutes while reaching an altitude of 27 thousand feet (8,230 meters). By reaching this milestone Turkey became an independent UAV manufacturer.⁹ A year later, the Bayraktar was armed and conducted 175 thousand hours of aviation. Following this achievement, 104 armed Bayraktars were delivered to the TSK.¹⁰ The success of Bayraktar paved the way for the export of this Turkish technology to Ukraine and Qatar.¹¹

Having seen the impressive results in various war theaters such as Syria and Libya, Baykar sought to upgrade its Bayraktar TB2 with a massively armed new "assault UAV" (Taarruzi İnsansız Hava Aracı - TİHA) called "Akıncı" (Raider). The newly produced UAV already conducted its first test flight on December 6, 2019. It is capable of being in the air for 24 hours while reaching to 40 thousand feet (12,192 meters). It can carry a 1350 kg of "useful load," namely various "made in Turkey" types of ammunition, rockets and missiles, such as the MAM-L, MAM-C, Cirit, L-UMTAS, Bozok, MK-81, MK-82, MK-83, winged direction kit-MK-82, Gökdoğan, Bozdoğan, and SOM-A.¹²

Turkish Aerospace Industries (TUSAS)

Parallel to Baykar, TUSAŞ sought to contribute to Turkey's UAV enterprise. Beginning in 2010, TUSAŞ's Anka (Phoenix) began to conduct its first test flight. After going through various configuration processes, the Directorship of the Defense Industry ordered 10 Ankas. In 2015, TSK began to utilize Anka prototypes during military operations against the PKK in the urban city centers of eastern Turkey. Since

¹ Selçuk Bayraktar, husband of President Erdoğan's daughter Sümeyye Erdoğan, concluded his MA studies in the prestigious Massachusetts Institute of Technology. Since 2007, he has been actively taking part in Turkey's UAV production program. As Erdoğan's son-in-law, unsurprisingly, Bayraktar is very critical of Israel. In a tweet, he tagged Israel as "the rogue state that should be stopped." This can be found on Twitter, [here](#).

then, Anka's capabilities were broadened. Its wings were lengthened and its ability to carry a "useful load" rose from 250 kg to 350 kg and it has remained in air for 26 hours and 30 minutes.¹³ Besides these developments, TUSAŞ has announced that it intends to produce supersonic UAVs. It launched the project in April 2019 and plans to reach its goal within 16 months.¹⁴ According to the Turkish press, the supersonic UAV will be introduced and its activities will be synchronized with another ambitious TUSAŞ project, i.e., the national Turkish fighter jet. Therefore, the Turkish war pilots who will fly the national jets will also be able to control the activities of the supersonic UAVs from within the jet itself. According to the same sources, TUSAŞ's supersonic UAV will seek to fly faster than 1,4 mach (1600 km) breaking the sound barrier. Moreover, it will be equipped with the ability to introduce itself as a different sort of an aircraft to deceive the anti-air systems of adversaries.¹⁵

Besides Anka and the supersonic UAV project, TUSAŞ began to attract attention with its "Aksungur" (Gyrfalcon) UAV. It is designed by TUSAŞ for tactical surveillance and reconnaissance missions. In its first test flight on March 20, 2019 Aksungur flew for four hours and twenty minutes. Like Bayraktar, Aksungur is capable of flying up to 40 thousand feet (12,192 meters), but its useful load carriage capacity is only 700 kg.¹⁶

Vestel

As far as "made in Turkey" household technology goods are concerned, Vestel is considered as one of the most important companies in Turkey. In 2005, Vestel group launched its first project "Efe mini UAV" (Swashbuckler). However, the group did not carry out serial production. In 2007, "Vestel Defense" launched a more ambitious project named "Karayel" (Northwest wind). In 2014, Karayel managed to conduct its first test flight, and in 2016 it was armed. Despite this, when compared to Bayraktar and Aksungur, Karayel's capabilities seem to be very limited. Karayel only capable of carrying 70 kg of useful load and able to reach to 22,500 feet (6858 meters).

The theaters:

Having been equipped with strong national production capabilities, Turkey began to use its homemade UAVs in various theaters both at home and abroad.

Eastern Anatolia: Since 1984, the Kurdish PKK engaged in a low-intensity conflict with the TSK. Over the years, the PKK adopted guerilla warfare tactics against the TSK. Thanks to the mountainous topography of Eastern Anatolia, the PKK was able to use caves and other natural structures for its operational purposes. During the 1990s, the TSK sought to limit and eliminate the PKK with its attack helicopters. However, 2016 constituted a turning point when the PKK managed to hit a Cobra helicopter and kill two Turkish military personnel in Turkey's Hakkari province.¹⁷ It seems that the PKK's attack on the Cobra helicopter caused a paradigm shift for the TSK. Having seen the positive results of UAVs Turkey decided to establish a new UAV base in the Erzurum province which is located in eastern Turkey.¹⁸ According to

Turkish news sources, both armed and unarmed UAVs will be dispatched to the new base to conduct surveillance and reconnaissance missions against the PKK. The TSK have already used Bayraktar to hunt down the PKK members outside of Turkey. Five PKK members were killed by a Bayraktar in November 2019, in Iraq.¹⁹ With these steps, Turkey seeks to detect the PKK shelters and hiding places and to eliminate them. In addition to such air operations, the UAVs will also assist the Turkish gendarmerie's "field cleansing operations" against the Kurdish organization.

Idlib - Northern Syria

Turkey became an active belligerent in the Syrian Civil War when it occupied the Jarabulus canton as part of its Operation Euphrates Shield in 2016. Ostensibly, the operation was designed to target the Islamic State. Its real objective was later revealed when the TSK focused its attacks on the Kurdish Democratic Union Party (Partiya Yekîtiya Demokrat- PYD) which Turkey considers to be an integral part of the PKK. By doing so, Turkey sought to break the geographical contiguity between the Afrin and Kobani provinces. In 2018 with Operation Olive Branch taking place in the Afrin canton, and subsequently with the Operation Peace Spring in 2019, which focused on the Tel Al-Abyad and Ras Al-Ayn (Sari-Kani) cantons, Turkey further strengthened its position against the PYD in northern Syria. It is vital to note that the Turkish Bayraktar UAV contributed to the success of both operations in Afrin²⁰ and the Tel Al-Abyad²¹ cantons. While these operations were conducted against the PYD, which was not a match against the NATO equipped TSK, the situation in Idlib was totally different.

One may recall that the TSK have entered the Idlib province in 2017 in the aftermath of the Astana diplomatic process conducted primarily by Turkey, Iran, and Russia. Within this framework, the TSK installed 12 observation posts to form de-escalation zones in the province. Since then, Turkey has been actively confronting the Assad regime in Idlib and providing the rebellion with moral and material support. Unsurprisingly, as the most important ally of the Assad forces in Syria, Russia became Turkey's undeclared adversary in the province.

Despite the Turco-Russian rapprochement in the energy and the arms trade sectors, the friction in Idlib began to poison the relations between Ankara and Moscow. In addition to Idlib, in the early days of February, President Erdoğan's declaration of donating 200 million Turkish Liras²² (approximately 33.5 million dollars)²³ to Ukrainian defense budget - which will likely to be used against the Russians - further deepened the tension between the two countries. In the shadow of this diplomatic tension with Russia, 36 Turkish soldiers were killed in Idlib in an attack by the Syrian regime that was allegedly supported by the Russians.²⁴ This naturally sparked an outcry in Turkey. As a result, the Erdoğan administration has launched the Operation Spring Shield against the regime forces under Bashar al-Assad. In this framework, for the first time in the entire Turkish military history TSK have used the Bayraktar TB-2 in a massive way, likened to a "flock" of birds, to hit the Assad forces' heavy

weaponry and ammunition depots.²⁵ According to the same sources, 20 Bayraktar UAVs were used simultaneously to destroy their targets. The Turkish administration also claimed the destruction of eight Russian-made Pantsir air-defense systems.²⁶ The Russians, however, only admitted that two Pantsirs were destroyed by Turkey's Bayraktar.²⁷

Aegean Region:

Since the First Balkan War in 1912, Turkey and Greece came to regard to each other as a national security threat. Apart from the Cyprus question the most important disagreement between the two countries is the question of sovereignty in the Aegean Sea continental shelf. In the spirit of the United Nations Convention of the Law of the Seas (UNCLOS) Greece claims 12 miles (19.3 km) of territorial waters in the Aegean Sea. Due to the proximity of the Greek islands to the Turkish mainland, the Greek declaration of 12 miles significantly impinges on Turkish sovereignty in the Aegean Sea. Therefore, instead of 12 miles Ankara insists on six miles of Greek territorial waters. Furthermore, it rejects the Greek thesis that each island has its own continental shelf. Accordingly, the Turkish definition of sovereignty calculates the Greek line not from the Greek islands' shores but rather from the Greek mainland. The implementation of the Turkish claim would turn the Greek islands into enclaves in Turkish territorial waters and its exclusive economic zone. In light of this, both of the countries do not recognize each other's authority in the contested zones. This triggers aerial and naval dog fights. In March 2019, Turkey launched one of the most comprehensive naval military drills called "the Blue Homeland" in order to deter Greek and the Greek Cypriot maneuvers, with 103 vessels, as well as Bayraktar and Anka UAVs that used during the drill, which was rehearsed "to occupy an enemy island" and simulated "destroying enemy F-16's and UAVs."²⁸ Ironically, in spite of being a member of NATO, it seems that the TSK has no problem designating "F-16"ⁱⁱⁱ jets and "UAV"ⁱⁱⁱ as hostile entities to be eliminated.

Turkey has maintained its military presence in the Aegean Sea through patrol and reconnaissance flights that are conducted by its armed UAVs. In this regard, five Bayraktar UAVs that were given to the Turkish navy were flown over Dalaman, Marmaris, Datça, Bodrum, and in the Didim area.²⁹ Besides this area, Bayraktar UAVs conduct patrol flights in the northern Aegean, close to the Çanakkale and Aydın provinces. It should be noted that these patrol and reconnaissance flights became more frequent after February 2020 when Turkey sought to create a refugee influx into Europe when opened its borders with Greece.³⁰ The recent flights in the Aegean Sea indicate that soon the Bayraktar UAVs will likely replace more expensive F-16s in the dogfight missions over the Aegean Sea.³¹

ⁱⁱ F-16s are considered as typical NATO war planes. Apart from Turkey, Greece, Israel and Egypt have these planes in their inventory.

ⁱⁱⁱ Only Greece and Israel are capable of producing UAVs in the Eastern Mediterranean.

The Eastern Mediterranean and Libya

In addition to the occurrences in the Aegean region, due to progress in the natural gas pipeline project, tension in the Eastern Mediterranean recently escalated in an unprecedented way. When Israel, Greece, and Cyprus announced their desire to sign a joint accord (signed in January 2, 2020) Turkey began to take unprecedented measures in this region. A month before the mentioned accord, in December 2019, Turkey and Libya's Government of National Accord (GNA) Government under Fayed A-Sarraj signed a maritime delimitation agreement. Ironically, the Sarraj government did not control the Libyan shores that were mentioned in the agreement. Nevertheless, due to United Nations' recognition, the Turkish-GNA agreement gained a standing in international law. In the spirit of the "Blue Homeland" doctrine, which expanded Turkey's maritime borders enormously, the agreement broke the geographical contiguity between Greece and Cyprus and even turned the tiny Greek island Kastelorizo into an enclave in claimed Turkish waters.³²

Apart from the diplomacy, Turkey also began to act in the field. In the same month, Turkey turned the Geçitkale air base which is only 40 km away from Nicosia, Cyprus into a UAV air base. With this move Turkey increased its rapid response and intelligence capabilities in the island and in the Eastern Mediterranean as a whole.³³ Prior to the inauguration of the new air base the UAVs had to depart from Turkey's Dalaman base, and would reach the Eastern Mediterranean in five hours. Therefore, apart from operational capabilities the inauguration of the northern Cypriot UAV base was supposed to save time and money for the TSK. Following the decision, equipment for the new army base was brought to the island from Mersin to northern Cyprus' Gazimagosa (Famagusta) port.³⁴ Upon the inauguration of Geçitkale, the Bayraktar UAVs also joined to Turkish navy's Barbaros frigate to accompany and provide protection for the Turkish seismic and drilling ships in the Eastern Mediterranean.³⁵

In addition to claims of sovereignty in the Eastern Mediterranean, Turkey also began to actively support the Libyan GNA government. In the framework of the maritime delimitation agreement between the two sides Turkey began to dispatch its Bayraktar UAVs to Libya. In other words, contrary to United Nations' decisions, Turkey began to ship arms illegally into Libya. In order to do that Turkey is often used its frigates to escort the ships loaded with ammunition. However, there are times that these kinds of ships were also sent by themselves. Such an occurrence took place March 29 this year when a French frigate intercepted a Turkish vessel that sought to smuggle weapons into Libya.³⁶

Apart from the ammunition, Turkey also sent 2400 of its Syrian mercenaries into Libya.³⁷ Moreover Ankara also deployed its military personnel to this country. Their exact number is still unknown. But one thing is known: Ankara's military presence in Libya has slowed down the advancement of General Khalifa Haftar's Libyan National

Army (LNA). The most visible indicator for this milestone was the GNA forces' progress until the outskirts of Tripoli.

Prior to Turkish intervention, the capital Tripoli had almost fallen into the hands of Haftar's forces. But thanks to Turkey, the resistance became stronger and the GNA began to thwart the attacks of Haftar forces. Later, on May 18, the GNA even managed to capture the strategic Al-Watiya air base. During the ongoing fight, similar to the strategy in Idlib, Syria the Bayraktar UAV (carrying the Libyan flag) once again confronted the Russian Pantsir anti-air missile system – which was provided to Haftar by the United Arab Emirates – and neutralized it also on the Libya soil. However, during the fight, according to pro-LNA sources,³⁸ some Bayraktar UAVs were shot down.³⁹ This means that apart from continuous war expenditures, Turkey has also suffered expensive losses of equipment. This does not, in any case, stop the Turkish administration. On December 25, 2019 President Erdoğan declared a 20 million Liras (3.3 Million Dollars)⁴⁰ military aid package for Turkey's allies. While the government refrains from providing tangible answers to clarify the essence of this aid, in the wake of the COVID-19 crisis, the Turkish economy's steady deterioration continues. Despite this harsh reality, Erdoğan has not made any cuts in his national budget.⁴¹

Conclusion

Turkey's aggressive foreign policy stance has eliminated all diplomatic checks and balances on Ankara. Under Erdoğan, Turkey is no longer seeking to please the West or deterred by the Russian bear as in the days of the Cold War. This picture provides Erdoğan the necessary maneuverability to implement his own foreign policy agenda. It is no secret that the Turkish president has turned the Turkish foreign policy into his own public relations machine. The diplomatic crises and the extra-territorial military interventions with various actors such as the Greeks, Greek Cypriots, Israelis, Kurds, Russians, Syrians and Libyans are portrayed to the Turkish people as a sign of the strength of their state. By doing so, Erdoğan gains the opportunity to divert the attention of the public from the deteriorating economy to the "hot" national matters. In this regard Turkey's national armament project and its most important achievement so far, the Bayraktar UAVs, seems to serve the same purpose. In addition to that, since Selçuk Bayraktar, Erdoğan's son in law is responsible for this giant leap, Erdoğan also benefits. As the pioneer of this advanced technology, Bayraktar is widely praised across the Turkish political spectrum. Moreover, the fact that Bayraktar, the mastermind of the Turkish UAV project, did not emerge from the secular part of Turkish society is also another reason for the Turkish president to own and turn this project into a heroic epopee.

Apart from the political gains, Turkish UAV program in general and Baykar's Bayraktar, along with the potential "Akıncı" in particular, seems poised to dominate the future of the TSK's air forces. Inevitably this will create a deeper shift in Turkish foreign policy. If Turkey will be less dependent on other weapons providers, it will be

even more challenging for the West and Russia to persuade Turkey to limit its regional aspirations. Thus, this new equilibrium increases the possibilities of an armed confrontation among various players irrespective to their affiliation with a particular camp.

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