Centre for Air Power Studies

Centre for Air Power Studies ISSUE BRIEF

163/22

07 April 2022

TURKEY'S DEFENCE INDUSTRY'S FLIGHT TO SUCCESS: BAYRAKTAR

Aditya Shankar Hazarika

Centre for Air Power Studies

Introduction

The Turkish drone, Bayraktar TB2, has shown its own brilliance and turned the heads of strategic and defence experts around the world. The TB2 drone has become the most talked-about Unmanned Aerial Vehicle (UAV) system at the moment.

All wars in history have produced their own heroes and urban legends. In the present ongoing crisis in Ukraine, the actions and leadership of President Volodymyr Zelensky have drawn the pens of the bards around the world. However, Zelensky isn't the only silver lining in this war. The Turkish drone, Bayraktar TB2 (Fig 1), has shown its own brilliance and turned the heads of strategic and defence experts around the world. From the masses going overboard with praises on social media to having a song written highlighting its service to Ukraine, the Bayraktar TB2 drone has become the most talked-about Unmanned Aerial Vehicle (UAV) system at the moment.

The Bayraktar TB2 drone is manufactured by the Turkish defence company, Baykar, a company founded in 1986. It is a leading manufacturer of tactical armed and UAV systems in Turkey. The company also has family ties with Turkish President Recep Tayyip Erdogan. The Bayraktar TB2 drone is a "Medium Altitude Long Endurance (MALE), a tactical Unmanned Aerial Vehicle that is capable of conducting intelligence, surveillance, and reconnaissance (ISR) and armed attack missions".[1] It is fully capable of self-taxiing, take-off, landing, and cruising, with over 4,00,000 operational flight hours, which proves its efficacy. It has been successfully carrying out missions within the Turkish Armed Forces, Gendarmerie, and Turkish National Police since 2014. Currently, the Bayraktar platforms are serving Turkey, Qatar, Azerbaijan, and Ukraine.[2]

Fig 1: The Bayraktar TB2 Drone

Source: Defence One, https://www.defenseone.com/technology/2019/01/ukraine-buying-new-combat-drones-turkey/154163/. Accessed on March 27, 2022.

Specifications

With 18,000 feet of operational altitude and 25,000 feet of maximum altitude, the company claims that the drone is capable of 27 hours of maximum airtime. The payload capacity is 150 kg, which takes the maximum take-off weight to 700 kg. It has fully automatic flight control and a Triple Redundant Autopilot System along with fully automatic landing and take-off capabilities without any dependence on ground systems. It can navigate with an internal sensor fusion system that makes it independent of the GPS network. The drone functions within a range of 300 km communication range and can travel at a speed of 70 to 120 knots (Fig 2).[3]

Fig 2: Graphic Demonstration of the Specifications of the Bayraktar Drone

Source: Baykartech Instagram Page, https://www.instagram.com/p/CauekXgMDuD/. Accessed on March 20, 2022.

Advantages

The drone is capable of 27 hours of maximum airtime and can navigate with an internal sensor fusion system that makes it independent of the GPS network.

Although the TB2 aren't the most technologically remarkable systems, their features give them unique advantages on the battlefield. Due to their slow flight speed, the TB2 can stay in the air for hours, picking up on details that reconnaissance planes might struggle to notice. Further, due to their limited range, the TB2 can return to the base for refuelling and restocking of ammunition before returning to the target area in a matter of hours.[4] In addition, the cost of TB2, priced at approximately US $1 million, proved to be a brilliant alternative to the obscenely high cost and maintenance expenses of alternatives like the General Atomics MQ-1 Predator, priced at US$40 million, or even the MQ-9 Reaper, priced at US$3 million, currently used by the US Air Force and several other Western military organisations.[5]

The only economic alternative to the Bayraktar drone would be the Chinese Wing Loong 2, which is priced at US$2 million. The use of such comparatively low-priced drones in conflict zones proves economically viable as it can take down targets and systems, which might prove to be more expensive to the adversaries. In any case, even if these drones are hit, the loss to the operating country would not be very significant economically. In other words, what these low-end drones lack in quality can be compensated for by quantity. Thus, such drones have become a popular choice for the less economically developed countries, particularly in Africa and Asia.

Bayraktar TB2 and Ukraine

Bayraktar TB2 drones have been inducted into the Ukrainian forces to be specifically used against Russian aggression. Ukraine has been receiving these drones in batches from 2018 onwards, and over the past few years, around 50 such drones were purchased from Turkish manufacturers.[6] These combat drones were first deployed by the Ukrainian Joint Forces Operation against pro-Russian rebels in the Donbas region of Ukraine on October 26, 2021 (Fig 3). In a statement by the General Staff of the Ukrainian Armed Forces, these UAVs were used "to attack a battery of howitzers that fired Ukrainian positions." The drone was able to deploy "a 22 kg laser-guided rocket and destroy a D-30 howitzer."[7] This attack on the Donbas province has been cited by Putin as one of the prime evidence of Ukrainian aggression.

In the Russia-Ukraine crisis, the on-ground impact of the Bayraktar Drones cannot be accurately assessed. Nevertheless, quite a few videos and commentaries have surfaced from the Ukrainian side praising the TB2 drones and their impact on the Russian forces. Several videos have also surfaced, showing the Turkish drones disseminating Russian targets and immobilising Russian war assets. For example, a video uploaded by a Twitter account named "Ukraine Weapon tracker" shows that another self-propelled howitzer was targeted

by the Bayraktar drones and was utterly destroyed.[8] The use of the TB2 drones has also been appreciated by the Ukrainian defence minister, who, in a Facebook post, said that more such drones have arrived and are being put on combat duty.[9] In another Facebook post, the TB2 drones were dubbed "life-giving" by the chief of Ukraine's air force, Lt. Gen. Mykola Oleshchuk.[10]

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In retaliation to the TB2 drones, the Russian forces have started to deploy the Forpost-R tactical UAVs. Footage of these Russian drones destroying a Ukrainian anti-aircraft missile system has also been released; while, the Ukrainian force released photographs of downing a Forpost UAV.[11]

Fig 3: Bayraktar TB2 Drones in Ukraine

Source: Defence News, https://www.defensenews.com/unmanned/2021/09/29/ukraine-is-set-to-buy-24-turkish-drones-so-why-hasnt-russia-pushed-back/. Accessed on March 27, 2022.

Use of the TB2 drones elsewhere

Prior to being deployed by the Ukrainian forces against the Russians, the Bayraktar TB2 Drones were used in various other conflicts. Majorly its use was in the Caucasus region and Africa region.

Nagorno-Karabakh

The most decisive role of TB2 was seen in the conflict between Azerbaijan and Armenia over the disputed region of Nagorno-Karabakh in November 2020. Azerbaijan was able to defeat Armenia-backed forces thanks to the use of drones. In a news report, Azerbaijan President Ilham Aliyev thanked Turkish drones and credited them with

reducing "casualties on the front."[12] Prior to the outbreak of fighting in the Nagorno-Karabakh region, Turkey's sales of drones and other military equipment increased to US$77 million in September 2020.[13]

Libya

In 2020, the Government of National Accord in Tripoli used TB2 drones as part of their campaign to repel an assault on the city by eastern forces backed by Russia, the UAE, and Egypt.[14]

Syria

During Operation Olive Branch in northern Syria in April 2018, Bayraktar TB2 provided important and tactical support to Turkish forces. The TB2 allowed Turkish forces to cleanse the Afrin region of Kurdish militants and Daesh terrorists in less than two months, with 'targeted precision' that reduced the impact on civilian property and lives.[15]

Impact on the Turkish Defence Industry

The economic impact of the Turkish drones can be seen in the upsurge in Turkish defence exports in line with growing demand. Turkey's defence exports have seen an increase since 2021, with most of the demand coming from low-income countries in Africa. The Turkish defence sector saw exports worth US$3.2 billion in 2021. Exports saw a massive jump of 84.2 per cent in the month of January 2022 and reached US$306,811 million, compared to the previous year.[16] In fact, the head of Turkish Defense Industries, İsmail Demir, claimed that the country is looking at a business of "over US$4 billion for 2022".[17] Africa has been one of the best and most successful markets for the Turkish defence industry to date. There is a mammoth increase of 700 present in exports from Turkey to Africa, from US$41 million in 2020 to US$328 million in 2021, "making it the fifth largest market after North America with US$1.56 billion, the Commonwealth of Independent States (US$411 million), the Middle East (US$381 million), and the European Union (US$338 million)".[18]

The success of the Baykartar drones in Ukraine has helped the country spread the word fast and attract demand for drones from many other countries. The manufacturer claims to have received orders from countries like Iraq, Kyrgyzstan, Poland, Niger, Morocco, Qatar, Albania, and Pakistan. Baykar Defences, the manufacturer, has already started developing the next generation, the TB3 drone. The company is looking into a bigger market after its success in Ukraine. Largely, Asian countries are at the top of their marketing teams. In a report, Haluk Bayraktar, the CEO of Baykar Defense, claims that the company will provide the countries that are not interested in purchasing Chinese drones due to political and strategic differences, with a viable and good alternative. The CEO also looks forward to having a deal in place with Japan, whose "Izumo-class platforms" seem to be a good fit for the TB3 drones.[19] The rising demand for Bayraktar

drones could spark a drone race between the receiving countries and their adversaries. However, the impact of the TB2 drone is such that Western competitors see it as the "Kalashnikov of the 21st century!"[20]

India must draw decisive lessons from both Ukraine and Turkey and incentivise the domestic defence research and manufacturing industries to scale up to meet the global level and contribute to India's military dominance.

India's concerns

The Pakistan Air Force has released a video that shows the induction of these Turkish drones into their arsenal.[21] When the country is facing severe financial woes, Bayraktar drones seem to be a cheap and effective alternative for Pakistan's defence and, in some circumstances, offence. Drones and Pakistani forces have had a profound relationship, and Pakistan has been using drones for surveillance purposes, targeting Indian assets. In such a scenario, the acquisition of these Bayraktar drones would be of major geopolitical concern to India. Although India has progressively developed a strong defence strategy against drones, India requires to pay closer attention to Pakistan's gaining grounds in this rising drone race.

The biggest lesson for India from the Ukraine crisis would be to strengthen India's self-reliance on the domestic defence industry. The growth of the Turkish defence industry indicates the advent of newer players in the defence suppliers' group. This must be handled with caution and utmost seriousness. The Indian defence industry has seen the progress of it becoming a supplier of critical arsenals to different countries. Thus, India must draw decisive lessons from both Ukraine and Turkey and incentivise the domestic defence research and manufacturing industries to scale up to meet the global level and contribute to India's military dominance.

Notes:

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Centre for Air Power Studies
P-284, Arjan Path, Subroto Park, New Delhi 110010
Tel: +91 11 25699130/32, Fax: +91 11 25682533

Editor: Dr Shalini Chawla e-mail: shaluchawla@yahoo.com
Formatting and Assistance: Mr Mohit Sharma, Ms Mahima Duggal and Mr Rohit Singh