

Next Generation ISR Dominance

Airborne Intelligence, Surveillance, and Reconnaissance in the Baltics

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ABSTRACT

Turkey's advancement, use, and sales of armed Remotely Piloted Aircraft (RPA) is proliferating throughout the Baltic, Middle East, and North African regions. More specifically, the most recent Armenian and Azeri war, that re-ignited in September 2020. The decades old conflict over a region called Nagorno-Karabakh, located in internationally recognized Azerbaijan, has been fought over since both countries became independent of the Soviet Union. Turkey's support to Azerbaijan in the form of financial aid and combat proven unmanned armed ISR, was a game changer, tipping the scales for the Azeri forces. The war was concluded in just 44 days after Armenian forces sustained enormous losses to equipment and personnel. Turkey is leveraging sales of their fleet of affordable and highly capable drones that are relatively easy to operate. This capability is changing the dimension of war for those who can afford it. The combat effectiveness of Turkey's Baykar Defense and Turkish Aerospace RPAs in Northern Syria and Armenia have proven that asymmetric warfare is relatively inexpensive. Sales have been reported to Libya, Tunisia, Ukraine, Qatar, and Pakistan over the last two years. These aircraft are flexible in their utilization regarding all weather capability and anti-jamming survivability. The U.S.'s current fleet of armed RPAs are less flexible or survivable. The Air Force should look at how to employ affordable, highly attritable armed unmanned aircraft to keep up with the competition continuum, with nations like Turkey. The United States is unprepared to deploy effective armed ISR in regions, like the Baltics, where Turkish UAVs dominate the airspace.

INTRODUCTION

“In the midst of chaos, there is also opportunity” (Sun Tzu)

Turkish A-ISR support in the Azeri and Armenian conflict was a strategic game changer and demonstrates the potential for regional powers to drastically shift the outcome of international conflict. The effectiveness of armed remotely piloted aircraft (RPA) has not gone unnoticed. The competition continuum in the unmanned technology space is moving forward at an amazing pace. The United States is no longer the only nation to have armed ISR platforms like General Atomics’ MQ-9 Reaper. Turkey has also developed a variety of combat capable RPAs, that have proven to be highly effective weapons systems. Turkey, Russia, and Iran are rapidly catching up to, and in some cases, surpassing the United States in armed (RPA) technology. Their advancement in the unmanned sector has become a commodity to nations within the Baltic region which has reshaped the battlefield, of what would have otherwise been a fair fight. Turkey has set a powerful example of how a relatively inexpensive RPA could be used to change the dimension of war, previously dominated by ground forces and traditional air power.

SHORT-WAR

In September 2020, full scale war broke out between Armenia and Azerbaijan. After the fall of the Soviet Union, these two countries have fought over control of a region called Nagorno-Karabakh; internationally recognized as a part of Azerbaijan though populated by ethnic Armenians. (Kramer 2021) The fighting only lasted about six weeks in which Azerbaijan emerged as the victor. (Kramer 2021) Azerbaijan had previously lost the last open conflict in the early 1990’s leaving tensions smoldering for decades. (Kramer 2021) Between 2012 and 2014,

Azerbaijan had spent \$12 Billion dollars on military readiness, and securing a strategic partnership with Turkey to preparing for the next fight. Azeri defense spending came in the form of financial aid from the Turkish government, where after it was spent on buying the critical Turkish made armed RPA's. (Montez 2020) Azerbaijan purchased \$123 million in defense and aviation equipment from Turkey in the first nine months of 2020. (Toksabay 2020) The 44-day war saw Armenian losses of 185 T-72 tanks; 90 armored vehicles; 182 artillery pieces; 73 multiple rocket launchers; 26 surface-to-air missile systems (SAMs), including a Tor system and five S-300s; 14 radars or jammers; 1 SU-25 Russian-made fighter; 4 drones and 451 military vehicles. (Dixon 2020) The effectiveness of Turkish UAS's cannot be understated.¹

BAYKAR DEFENSE

Turkey's advancement in unmanned technology has brought them closer to becoming a near peer competitor on the world stage. Specifically, manufactures such as Baykar and Turkish Aerospace produce the country's most advanced A-ISR aircraft. Although the exact model of Unmanned Aerial System (UAS) Azerbaijan used is unknown, both aerospace manufacturers offer advanced vehicles that tout specifications that rival the capabilities of some the most advanced combat UAS's in the world. Baykar's Bayraktar TB2 is a Medium Altitude Long Endurance (MALE) tactical armed UAS.² The TB2 was most likely used in the war, as it is smaller, more affordable, and highly capable of the two systems Baykar produces. The TB2 uses triple band line of sight (LOS) communication from a NATO standard shelter ACE-III mobile

¹ Andrew E. Kramer, "Armenia and Azerbaijan: What Sparked War and Will Peace Prevail?," The New York Times (The New York Times, October 3, 2020), <https://www.nytimes.com/article/armenian-azerbaijan-conflict.html>.

² "BAYKAR Unmanned Aerial Vehicle Systems," BAYKAR Unmanned Aerial Vehicle Systems, accessed April 6, 2021, <https://baykardefence.com/uav-15.html>.

ground control station (GCS).³ The aircraft is highly capable as Baykar lists specifications such as: 18,000-foot operational ceiling, 27 hours endurance, four laser guided munitions, multi-spectral targeting system (MTS), air-to-ground radar, autonomous takeoff and landing function, redundant navigation system independent of global positioning system (GPS), triple-redundant flight control systems, and autonomous flight modes.⁴ Baykar boasts this model has flown a total of 300 thousand hours of operational combat sorties.⁵

In June 2020, Azerbaijan's Minister of Defense, Zakir Hasanov, announced Azerbaijan's strategic partnership with Turkey and Baykar UAS company, stating on local television the purchase of Turkish-made armed UAVs after their demonstrated success in Syria. Hasanov also confirmed Turkey was to provide financial assistance to the Azerbaijani military. Authorities in Turkey reported that the country (Turkey) has become the world's fourth largest drone producer. (Toksabay 2020) Open-source reporting cannot confirm whether Turkey only sold Azerbaijan equipment and training, or if Turkey provided direct crew support to operate the UASs firsthand. The speed and quantity in which Azerbaijan acquired this new capability points to the assumption that Turkey also provided crew members to fly and operate each aircraft.⁶

ECONOMY OF CONFLICT

Turkey has positioned themselves as a leader in the combat drone business by leveraging the nation's two largest manufacturers Baykar Defense and Turkish Aerospace. Azerbaijan

³ "BAYKAR Unmanned Aerial Vehicle Systems," BAYKAR Unmanned Aerial Vehicle Systems, accessed April 6, 2021, <https://baykardefence.com/uav-15.html>.

⁴ Ibid

⁵ "BAYKAR Unmanned Aerial Vehicle Systems," BAYKAR Unmanned Aerial Vehicle Systems, accessed April 6, 2021, <https://baykardefence.com/uav-15.html>.

⁶ GDC, "Turkish Government to Back Azerbaijan with Armed Drones," Global Defense Corp, July 26, 2020, <https://www.globaldefensecorp.com/2020/07/21/turkish-to-back-azerbaijan-with-armed-uav/>.

purchase was just the first real world example of Turkish RPA capability. The Armenian and Azeri war was something akin to an advertisement for Turkey that now boasts similar sales to Libya, Tunisia, Ukraine, Qatar, and Pakistan. (Gupta 2020) If Turkey is also capable of providing trained instructors, pilots, and crewmembers to accompany their drone sales, that would blur the lines of war and responsibility. In December of 2020, Inder Singh Bisht of the Deffensepost.com reported that Tunisia signed an \$80 Million dollar contract to purchase three Anka-S UAVs. The deal also includes 3 ground control stations (GCSs) and training for 52 Tunisian Air Force crewmembers to be instructed in Turkey. (Bisht 2020) Umar Farooq wrote in an article from TheIntercept.com that *“Ukrainian President Petro Poroshenko announced his country would purchase 12 TB2s (Baykar Defense), in a deal estimated at \$69 million.”*⁷ Turkey’s proliferation of armed drone sales is a Billion-dollar business which is disrupting NATO (North Atlantic Treaty Organization) states by way of capitalist projection of power. (Farooq 2019)⁸

LIMBER-UP

Flexibility the key to air power, as the adage goes. Turkey’s two primary UAS manufacturers, offer 4 MALE type aircraft with the capability to carry air to ground precision guided munitions. Each of these systems bring industry leading technology as in; auto takeoff and landing, all weather survivability, payload capacity, LOS/BLOS capability, and frequency encryption. The GCSs are also industry standards provided by Lockheed Martin and adapted for each company’s platform, and may also include truck mounted control stations for highly mobile

⁷ Inder Singh Bisht, “Tunisia Signs \$80 Million Deal for Three Turkish Anka-S Combat Drones,” The Defense Post, January 19, 2021, <https://www.thedefensepost.com/2020/12/17/tunisia-buys-anka-s-drones/>.

⁸ Ibid

operations. The Armenian and Azeri war displayed Turkey's ability to field and make their UASs they sell, combat mission capable within a relatively short period of time. This streamlined commercial availability of armed RPAs within the Baltic region highlights a United States Air Force (USAF) vulnerability.

Currently, the USAF's combat RPA fleet consists of MQ-9s⁹ and MQ-1s¹⁰ (flown by the Army), both produced by General Atomics. The Air Force and Army's flexibility to field and operate these aircraft are limited to available infrastructure, weather, range, communication. Each launch and recovery site must be on a suitable airfield to accommodate MQ-9s or 1s, to include crew requirements. Neither the MQ-9 or 1 are capable of flying in inclement weather as currently equipped. Both aircraft are designed to be operated via Satellite when performing a mission which is limited by a multitude of factors. Satellite footprint must encompass both the aircraft and the ground-based relay, which then transmits the signals through fiberoptics on the sea floor back through the United States.

Although the U.S. is well equipped to field ISR rather rapidly anywhere in the world using the many varying UAS's in the inventory, bringing a kinetic option to a new Aera of Operation (AOR) would be a difficult process. If the United States were to support operations in the Baltic region, and remain competitive, the Air Force needs to adopt principles and capabilities from countries like Turkey. The Department of Defense (DOD) needs a more flexible, cost effective solution to counter operations in regions of the world where we do not currently have a military presence.

⁹ "MQ-9A Reaper (Predator B)," General Atomics Aeronautical Systems Inc., accessed April 6, 2021, <https://www.ga-asi.com/remotely-piloted-aircraft/mq-9a>.

¹⁰ "Gray Eagle Extended Range (GE-ER)," General Atomics Aeronautical Systems Inc., accessed April 6, 2021, <https://www.ga-asi.com/remotely-piloted-aircraft/gray-eagle-extended-range>.

CONCLUSION

Where there is conflict, there will be weapons. Turkey's advancement in unmanned systems has positioned their military industrial complex to provide affordable kinetic RPAs and A-ISR to smaller countries giving them the upper hand in warfare. Azerbaijan demonstrated the power air dominance has against an adversary that is woefully unprepared to counter an effective weapon system. Turkey's proliferation through sales of armed UAVs is a conflict disruptor. By selling to the side that Turkey supports or whomever has the resources to pay for the capability, Turkey is tipping the scales of war. Their ability to develop a variety of capable weapon systems is something to take note of. By applying similar principles of A-ISR, the U.S. can remain competitive and prepared to operate in regions where Turkish drones already dominate the skies.

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