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A Case Study on The Drone Battle between Azerbaijan and Armenia

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Abstract

This study analyzes the combat case involving military drones during the Azerbaijan-Armenian War, which erupted on September 27, 2020. The background of the war revealed that Azerbaijan extensively and aggressively employed offensive drones, which played a decisive role in reshaping the dynamics of the battlefield. Despite Azerbaijan's GDP of $4.639, which corresponds to the level of a developing country, and its 64th rank in global military strength, the country boldly allocated a significant portion of its budget to develop its drone capabilities in preparation for the war. As a result, Azerbaijan effectively utilized offensive drones acquired from Turkey and Israel to neutralize hundreds of tanks, armored vehicles, artillery units, and air defense systems. The purpose of this study is to examine this context and explore how our Korean military organization can enhance its combat capabilities by developing a drone combat system, thereby enabling an effective response posture against multifaceted threats.

Keywords: Azerbaijan, Armenia, Drone, Battle, Case Study

1. INTRODUCTION

Recent war cases unequivocally demonstrate the rapid development of commercial technology through advancements in the Fourth Industrial Revolution. One area where this progress is particularly notable is in the field of commercial drones, which have the potential to revolutionize conventional warfare concepts [1]. The U.S. military has already showcased the military utility of drones in future battlefields, actively deploying them in Iraq and Afghanistan, where access to troops is restricted or high-risk scenarios are anticipated [1]. So far, it was believed that drone warfare was feasible only for technologically advanced military nations. However, during the Azerbaijan-Armenian War that commenced on September 27, 2020, Azerbaijan's military

showcased its extensive and aggressive utilization of offensive drones, fundamentally altering the dynamics of the war. This case vividly illustrated that drones could serve as a decisive game-changer on the battlefield [2].

Figure 1. Armenian–Azerbaijan Combat Battle

2. Understanding the Progress of the Armenian-Azerbaijani Drone Battle

The Azerbaijan-Armenian War in 2020 serves as a prominent example of the extensive and highly effective utilization of drones by Azerbaijani forces against Armenian forces in the Nagorno-Karabakh region [3]. The conflict erupted on September 27, 2020, when Azerbaijan launched an attack on the village of "Martuni" in the region, leading to both countries declaring martial law and mobilization. The intensity of the battle escalated along the border area [4].

Figure 2. Nagorno-Karabakh

From the onset of the war, the Azerbaijani army aggressively employed offensive drones, resulting in the destruction of Armenian tanks, armored vehicles, and air defense systems. They gained a strategic advantage by employing unmanned aerial vehicles to pinpoint the locations of Armenian anti-aircraft defense systems[5],

utilizing Soviet-era weapons[6]. After 45 days of conflict, marked by significant casualties among both soldiers and civilians, a ceasefire was signed on November 10. Azerbaijan emerged victorious, reclaiming the Nagorno-Karabakh region, which had been under Armenian control for over 30 years [1]. Forbes regarded Azerbaijan as a noteworthy example of how future wars could be conducted through extensive drone operations [7].

3. Analysis of the Armenia-Azerbaijan Drone Combat System

The Armenian military had been utilizing its own reconnaissance drone since 2011. In contrast, the Azerbaijani military prioritized military innovation by swiftly acquiring high-performance reconnaissance and attack drones from Israel and Turkey instead of relying on domestic development [8]. Consequently, Azerbaijan possessed a significant drone arsenal, including five reconnaissance drones, one armed attack drone, and three self-destructive drones, providing them with a substantial advantage over the Armenian army, which only had three reconnaissance drones [1]. The triumph in this war was largely attributed to the Turkish armed attack drone "Bayraktar" and the Israeli self-destructive attack drone "TB2" (also known as "Harop") [1].

Figure 3. Baykar Bavraktar

The TB2, developed by Baykar, Turkey, is a fixed-wing drone with key specifications such as a length of 6.5m, a wingspan of 12m, an operational radius of 150km, a flight time of 24 hours, and the capability to carry four smart ammunition, including anti-tank missiles [9]. Additionally, the Harop is a drone developed by IAI, Israel, with main specifications of 2.5m in length, 3m in wingspan, an operational radius of 1,000km, and a flight time of 6 hours. The Harop is an attack drone that launches from a platform, flies to the designated target, and self-destructs upon impact [10]. Azerbaijan's military introduced the TB2 in June 2020 and had been utilizing the Harop since 2011 [1].

Source : Defenseupdate (2023).

Figure 4. Harop Drone

4. Discussion

The implication derived from the perspective of the drone combat system through the progress and results of the Azerbaijan-Armenian War is that the drone combat system can be a game changer that can change the game of the war. The Azerbaijani army won a perfect victory in the war, and its main players were drone combat systems such as TB2 and Harop [11]. Armenian forces shot down a number of drones in a battle with Azerbaijan forces in 2016. The Armenian military prepared a ground-based cooperative battle, neglecting Azerbaijan's drone electrification [12].

Figure 5. Nagorno-Karabakh Combat Area

However, the Azerbaijani military attacked the Armenian army using attack drones, and at the same time, it also conducted psychological warfare such as disclosing the entire process on SNS in real-time. At the end of the war, Armenian forces were supported by Russian electronic warfare equipment to counter Azerbaijan's drone attacks, but it was not enough to change the game of the war [13]. Eventually, control of the Nagorno-Karabakh region, which had been in Armenia for more than 30 years, was given to Azerbaijan by a "game changer" called drones.

5. Conclusion

As of 2021, Azerbaijan has a per capita GDP of $4.639, which is the level of a developing country and the 64th-largest military force in the world [14]. However, Azerbaijan boldly invested money to build drone power in the process of preparing for the war, and as a result, the Azerbaijani military aggressively and extensively used attack drones introduced from Turkey and Israel to destroy hundreds of tanks, armored vehicles, artillery, and air defense weapons [1]. If the ROK Armed Forces have improved combat capabilities through the development of the drone combat system, they will be able to effectively respond to all-around threats [15], and maintain a strong security posture even in the rapidly changing security environment in Northeast Asia [1].

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