

## DRONE WARFARE IN CONTEMPORARY CONFLICTS: FIVE LESSONS TO GEN UP

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In recent years, drones are being used for various purposes in armed conflicts ranging from intelligence, surveillance and reconnaissance operations to counterforce strikes. The development of drone technologies is continuously evolving at a rapid pace. There are various lessons to be learned from this new and modern form of warfare.

### 1. Kamikaze Drone: A Game Changer or New Category of Duds?

The new breed of deadly, unpredictable and one-way single-use unmanned aerial weapon system that falls under the category of loitering munition, famously known as the “suicide drones” or “kamikaze drones” are playing a significant role in recent conflicts. In addition to regular Turkish Bayraktar TB2 drones, Azerbaijan also deployed Israeli kamikaze drones known as the “IAI Harop” against Armenia during the six-week-long Nagorno-Karabakh conflict. These drones destroyed Armenia’s armoured forces as well as their logistics even before reaching the front line.<sup>1</sup> Similarly, the kamikaze drones like AeroVironment Switchblade, the Phoenix and Zala Lancet-3 are wreaking havoc in an ongoing Russia-Ukraine conflict.

Their small size, low cost and expandability make them highly effective in combat. Instead of using fighter jets to launch missiles and ensure their safe return, states are preferring kamikaze drones that can turn themselves into a weapon without any return hassle. Unlike big combat drones, these

<sup>1</sup> Jack Detsch, “The US Army Goes to School on Nagorno-Karabakh Conflict,” *Foreign Policy*, last modified March 30, 2021, <https://foreignpolicy.com/2021/03/30/army-pentagon-nagorno-karabakh-drones/>.

kamikaze drones generate low visual, acoustic and thermal signatures as they fly at low altitudes and speeds. Thus, making them entirely undetectable by the traditional air defence systems.<sup>2</sup> But what if a single suicide drone or “kamikaze swarm” fails to explode? A few months ago, this happened in Ukraine when a four-foot-wide tan, aeroplane-shaped Russian kamikaze drone fall out of the sky in the Kyiv region and crashed directly into the ground without any explosion on impact.<sup>3</sup> This incident was detected by the Ukrainian forces and received media attention. There could be many cases of such unexploded kamikaze on both sides that went undetected and unreported. What will happen to such unexploded drones in the future?

It is important to note that the discovery and dismantling of unexploded ammunitions or duds as a result of cluster bombing in various historical wars and conflicts continue to be a major issue in the global arms control and disarmament regime. Whether it's a dried-up river in Italy, a construction site in London or cities in Vietnam, Iraq and Afghanistan, these explosive ruminants pose dangerous and long-term threats to the environment and human lives. The development and operationalisation of kamikaze drones on a massive level in contemporary conflicts would further add up to this generational crisis.

## **2. New Era of Intelligence, Surveillance and Reconnaissance (ISR) Operations**

The US Department of Defence (DOD) defines ISR as “integrated operations and intelligence activity that synchronises and integrates the planning and operation of sensors, assets and process, exploitation and dissemination systems in direct support of current and future operations.”<sup>4</sup> ISR lies at the crossroads of planning, military operations and assessment. Intelligence is a final product of systematic observation, collection, processing, integration, evaluation, analysis and interpretation of information in aerospace, cyberspace, surface and subsurface areas. This intelligence would then facilitate the commanders in identifying threats and opportunities in the operational environment, recognising the enemy's vulnerabilities and deception and safeguarding their assets and allied forces.

The ISR drones played a unique and innovative role in contemporary conflicts. In the early stages of the Nagorno-Karabakh conflict, Azerbaijan converted 11 Soviet-era AN-2 slow aircraft into drones for ISR purposes. Azerbaijan also used special ISR drones to identify the position of Armenian troops,

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<sup>2</sup> Aamna Rafiq, “US Phoenix Ghost Drones: A Mystery Unlocked,” Institute of Strategic Studies Islamabad (ISSI), July 1, 2022, [https://issi.org.pk/wp-content/uploads/2022/07/IB\\_Aamna\\_July\\_1\\_2022.pdf](https://issi.org.pk/wp-content/uploads/2022/07/IB_Aamna_July_1_2022.pdf).

<sup>3</sup> Gerrit De Vynck, Pranshu Verma and Jonathan Baran, “Kamikaze Drones are Showing up in Bigger Numbers in Ukraine,” *The Washington Post*, last modified March 24, 2022, <https://www.washingtonpost.com/technology/2022/03/24/loitering-drone-ukraine/>.

<sup>4</sup> Nishawn S Smagh, “Intelligence, Surveillance and Reconnaissance Design for Great Power Competition,” Congressional Research Service (June 4, 2020): 4-8, <https://sgp.fas.org/crs/intel/R46389.pdf>.

artillery and air defence system, which were later destroyed by the kamikaze drones.<sup>5</sup> Similarly, during the Russia-Ukraine conflict, the Ukrainian military used approximately 600 ISR drones to monitor the movement of Russian troops, identify the nature and location of military targets and used this information to conduct military strikes.<sup>6</sup> Keeping in view the high effectiveness of ISR drones, the new US\$775 million security package by the Pentagon to facilitate Ukraine's fight against Russia includes 15 Scan Eagle drones for additional ISR, direct situational awareness and force protection against Russia.<sup>7</sup>

### **3. Welcome to Hell: Expansion of Information War**

Recently, 22-second drone footage went viral on different social media platforms showing the drone attacks of Ukraine on Russian forces.<sup>8</sup> Earlier this year, the official Facebook page of the Ukraine forces' commander-in-chief posted the first-ever aerial footage of the Turkish-made Bayraktar TB2 drone's attack on the Russian military with the caption "Welcome to Hell!"<sup>9</sup> This does not only show how the drone attacks are making the battleground a hell but also how this footage is making the information space a hell for the opponent. The ability of drones to capture live pictures and videos on the battlefield not only facilitates the demonstration of military success but also assists in countering propaganda in the information space. On one hand, the wide-scale circulation of this footage on social media and smartphones reveals the heroism and courage of soldiers but on the other hand, it has also brought a war hell into the palms of common citizens, triggering a wide-scale secondary trauma.

### **4. Force Multiplier vs. Decisive Factor**

The success of drone warfare in two recent and major conflicts has generated an intense debate regarding the significance of traditional structures of air and land power. Many experts started

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<sup>5</sup> Robyn Dixon, "Azerbaijan's Drones Owned the Battlefield in Nagorno-Karabakh — and Showed Future of Warfare," *The Washington Post*, last modified November 11, 2020, [https://www.washingtonpost.com/world/europe/nagorno-karabakh-drones-azerbaijan-aremenia/2020/11/11/441bcbd2-193d-11eb-8bda-814ca56e138b\\_story.html](https://www.washingtonpost.com/world/europe/nagorno-karabakh-drones-azerbaijan-aremenia/2020/11/11/441bcbd2-193d-11eb-8bda-814ca56e138b_story.html).

<sup>6</sup> Shaza Arif, "Ukraine and use of Commercial Drones on the Battlefield," Center for Aerospace and Security Studies, June 3, 2022, <https://casstt.com/post/ukraine-and-use-of-commercial-drones-on-the-battlefield/637>.

<sup>7</sup> Amanda Miller, "US Includes Scan Eagle ISR Drones in Ukraine's Latest Aid Package," *Air & Space Forces Magazine*, August 22, 2022, <https://www.airforcemag.com/us-includes-scaneagle-isr-drones-in-ukraines-latest-aid-package/>.

<sup>8</sup> "Incredible Video Shows Russian Soldier Hit by Ukrainian Munition Dropped by a Drone," *NDTV*, September 8, 2022, <https://www.ndtv.com/world-news/incredible-video-shows-russian-soldier-hit-by-ukrainian-munition-dropped-by-a-drone-3327264>.

<sup>9</sup> "Russia-Ukraine War: 'First footage ever' shows Turkish Drone Strike Russian Forces," *Middle East Eye*, last updated February 27, 2022, <https://www.middleeasteye.net/news/russia-ukraine-war-turkey-drone-strike-kherson-first-ever>.

making tall claims like the modern wars are all about drone warfare and days of aerial bombing, fighter jets and the battle of tanks are over. However, other experts believe that the role of drone warfare is exaggerated. Therefore, it is important to look at the factors that made these drones a success story in these conflicts and their reliability.

Azerbaijan drones contributed not only to providing advanced ISR but also well-planned and high-value counterforce attacks far beyond the front line. They successfully destroyed a huge number of Armenian air defences, tanks, artillery units, supply lines and logistics. Here, the first question is why Azerbaijan preferred drone strikes over the use of ballistic missiles. Many experts believe that the limited missile stocks could be the possible reason. Another potential reason is the limited scope and scale of the conflict. Despite grave escalation concerns of the international community, the conflict did not move beyond the Nagorno-Karabakh region. Both sides intentionally contained the conflict. This implies that drone warfare is highly effective during limited and swift wars or conflicts.<sup>10</sup> Do they prove to be a decisive factor of the same scale in a strategic level or an extended conflict? The answer is a big NO. In an extended conflict, drones would only act as an enabling technology or a force multiplier in selective operational environments.

This leads to the second area of investigation. Why has Armenia failed so miserably? Armenia relies mainly on its Russian S-300 air defence system, which is an outdated technology mainly designed to target missiles, not drones.<sup>11</sup> This gives rise to a hypothesis that an anti-drone air defence system, electronic warfare or other technologies like directed energy weapon systems would significantly reduce the success rate of drone warfare. If one considers this hypothesis to be true for an instance then why Russia has not been able to effectively counter the Ukrainian drone warfare? Many Russian, as well as international defence analysts, have repeatedly raised this question. Russia is not a naive military power in the realm of drone warfare. Russia has gained extensive experience through drone operations in Syria. In addition to drone complexes, Russia is operating thousands of individual combat drones in Syria. Furthermore, Russia is protecting its bases in Syria with an advanced Krasukha-4 electronic warfare system along with six other air defence systems i.e. Pantsir-S1, Osa-AKM, S-125 Pechora-2M, Buk-M2E, S-200VE Vega, and S-400 Triumph.<sup>12</sup> Therefore, one can

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<sup>10</sup> "The Air and Missile War in Nagorno-Karabakh: Lessons for the Future of Strike and Defense," Center for Strategic & International Studies (CSIS), last modified December 8, 2022, <https://www.csis.org/analysis/air-and-missile-war-nagorno-karabakh-lessons-future-strike-and-defense>.

<sup>11</sup> Ibid.,

<sup>12</sup> Anton Lavrov, "Russian UAVs in Syria," Centre for Analysis of Strategies and Technologies, <http://cast.ru/products/articles/russian-uavs-in-syria.html> and Parth Satam, "BYE-Raktar! Russian Lead in Counter-Drone Warfare, With Experience From Syria & Crimea, Deflated Turkish TB2 Drones – Analysis," *The EurAsian Times*, last modified June 29, 2022, <https://eurasianimes.com/bye-raktar-russian-lead-in-counter-drone-warfare-with-experience/>.

say that the success of Ukrainian drone warfare is because of inadequate Russian response rather than the actual potential of drone warfare.

### **5. *Redefining the Role of Drones in the Global War on Terror***

Since 9/11, the global War on Terror has made the term “drone strike” common yet controversial. The US has launched several anti-terrorism operations where it used Predator drones to identify and kill terrorists. In the last two decades, states mainly retained control over the research, development and deployment of drones. However, the rapid commercialisation of drone technology in the last few years has led to the threat of these drones being used by terrorist organisations. The fundamental characteristics, scope and scale of this emerging threat are less discussed due to the limited availability of data. Since 2016, drones were used in 76 terrorist attacks which killed 50 and injured 132 people. Among these 76 attacks, 27 were individual attacks while 9 were coordinated. Surprisingly, drone swarm technology was used in 22 percent of these attacks.<sup>13</sup> In 2018, the failed attempt to assassinate Venezuelan President Maduro with two GPS-guided drones and a swarm of 13 homemade aerial drones attacking two Russian military bases in Syria are two prime examples. Although, the current attacks are less lethal as compared to traditional terrorist attacks.<sup>14</sup> However, increasing advancements in drone technologies and the payloads that they can carry could lead to more destructive attacks in the future.

To conclude, contemporary conflicts in which drone warfare is used are different from one another concerning scope, scale and objectives. Besides a few common drone systems, different states used different drones in different terrains and received different responses from the opponents. As compared to a traditional and expensive fleet of fighter jets, building and maintaining a fleet of drones is easy and cost-effective. Therefore, it is a better option for small states, especially against other small states in a limited conflict for swift gains. However, drones would only act as a force multiplier in an extended conflict. As of now, there is no example of a drone war between major powers with equal drone capability. States are developing anti-drone or counter-drone systems and also revisiting their military doctrines and warfare strategies. The designing, development and operationalisation of drone systems are also continuously evolving. Furthermore, the issues of dud drones and access of non-state actors to drone technology are contemporary risks, which could rapidly grow into major threats in the next few years. These contemporary conflicts proved that

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<sup>13</sup> Barten DG, Tin D, De Cauwer H, Ciottone RG, Ciottone GR. A Counter-Terrorism Medicine Analysis of Drone Attacks. *Prehosp Disaster Med.* (Jan 31, 2022):1-5. DOI: 10.1017/S1049023X22000139.

<sup>14</sup> Thomas G. Pledger, “The Role of Drones in Future Terrorist Attacks,” *Association of the United States Army* (February 22021): 2-3, [https://www.ausa.org/sites/default/files/publications/LWP-137-The-Role-of-Drones-in-Future-Terrorist-Attacks\\_0.pdf](https://www.ausa.org/sites/default/files/publications/LWP-137-The-Role-of-Drones-in-Future-Terrorist-Attacks_0.pdf).

drone is an essential component of 21st-century warfare and they are here to stay. Now, it's up to the states how they would step up their drone game to achieve their military objectives.