



ON THE EDGE

Security, protracted conflicts and the role of drones in Eurasia



Note: The term 'drone' is used interchangeably with 'Unmanned Aerial Vehicle (UAV)' in this report.

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Drone Wars UK is a small British NGO established in 2010 to undertake research and advocacy around the use of armed drones. We believe that the growing use of remotely-controlled, armed unmanned systems is encouraging and enabling a lowering of the threshold for the use of lethal force as well as eroding well established human rights norms. While some argue that the technology itself is neutral, we believe that drones are a danger to global peace and security. We have seen over the past decade that once these systems are in the armoury, the temptation to use them becomes great, even beyond the constraints of international law. As more countries develop or acquire this technology, the danger to global peace and security grows.

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1

INTRODUCTION

Thirty years after the collapse of the USSR, the people of the Eurasian continent still live with conflict and repression that are part of the post-Soviet legacy. The year 2020 saw the most serious violence since 1994 erupt between Armenia and Azerbaijan over the disputed Nagorno-Karabakh region. Ukraine's eastern Donbas region also saw an upturn in violence, whilst Russia maintains its hold over Crimea. Georgia's separatist regions - Abkhazia and South Ossetia - are also the site of ongoing clashes. These multiple conflicts impact the lives of civilians and abuses of human rights are common in the contested border regions. Moreover, the political cultures of the five Central Asian states - Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan - remain autocratic and opaque, limiting democracy and human rights.

The longevity of the separatist conflicts and the opacity of Central Asian regimes, as well as their relationships with China and Russia, have seen extensive militarisation in the region. This report is concerned with the proliferation of unmanned aerial vehicles (UAVs, commonly called drones) and loitering munitions across the post-Soviet space. It charts the increasing use of drones along the borders of separatist areas, and also aims to shed some light on the acquisition of large Medium-Altitude Long-Endurance (MALE) Chinese drones in Central Asia - why this has happened and what the likely consequences might be. The report sets out background and context for each issue before detailing the use of drones.

First, however, the broader security context deserves some introduction. The post-Soviet conflicts mentioned above have often been described as "frozen," as a result of ceasefire agreements in the 1990s, the presence of peace-keepers and supposed ongoing negotiations. Yet there have been no real solutions or conclusions, and over time the factors affecting a solution to the conflicts have changed as the conflicts have become internationalised. Furthermore, the type of warfare has shifted from primarily separatist guerrilla action to include regular state armies. This has seen a significant militarisation of the region, enabled by outside support.¹

The disputes over break-away territories are enmeshed in the increasingly contentious relationship between NATO and Russia. The 'border' between NATO and Russia lies in the states that ring Russia's western front. For historical

1 Ekaterina Kilmenko, *Protracted Armed Conflicts in the Post-Soviet Space and their Impact on Black Sea Security*, SIPRI Insights on Peace and Security, No. 2918/8 (Stockholm International Peace Research Institute (SIPRI), Stockholm: 2018), <https://www.sipri.org/sites/default/files/2018-12/sipriinsight1808_0.pdf>

& political reasons, anti-Russian feeling runs deep in Georgia and Ukraine, and both countries seek closer integration with NATO, hopeful of achieving full membership. It is also in NATO's interests to integrate these states in to their sphere of influence. The Kremlin of course does not wish to see NATO on its borders and has, analysts say, deliberately encouraged destabilisation in Georgia and the Ukraine in order to stall, or end, their integration with NATO.² This wider international power conflict, then, has an enormous bearing on the way in which the territorial integrity of these states is approached by the international community, and what support and military equipment has been available to governments and separatists. In contrast, Nagorno-Karabakh is peripheral to NATO interests, yet it suits Russia to have influence, and arms deals, in both Armenia and Azerbaijan, so there has been little incentive to resolve the status of Nagorno-Karabakh.

For the five Central Asian states, the shared context is different, but also a result of a broader set of issues. There is a perceived terrorist threat in the form of either returnees from Syria, or spill-over from Afghanistan, a concern shared by Russia, China and the US. Secondly, China's Belt and Road Initiative (BRI), which seeks connectivity across a 'New Silk Road' through investment in other countries' infrastructure, has shifted some of Central Asia's historic economic, security and defence reliance away from Russia towards China. The combination of these two factors has created an opening for the acquisition of military drones.

The proliferation of large and small drones, as well as loitering munitions (often described as 'suicide drones') across the region has gathered pace in the last few years and, aside from providing all important propaganda for states at war and for autocratic leaders, the threat of new unregulated technologies and their perceived benefits are very real and directly contributing to increased violence in these often overlooked areas.

Map of Eurasian region



² Natia Seskuria, 'Russia's 'Silent' Occupation and Georgia's Territorial Integrity', Royal United Services Institute (RUSI) Commentary, <<https://rusi.org/commentary/russia-s-silent-occupation-and-georgia-s-territorial-integrity>>, 18 Apr 19

NATO drone classifications

Class	Category	Normal Operating Altitude	Normal Mission Radius	Example Platform
Class III (>600kg)	Strike/Combat*	Up to 65,000ft	BVLOS	Reaper
	HALE	Up to 65,000ft	BVLOS	Global Hawk
	MALE	Up to 45,000ft (MSL)	BVLOS	Heron
Class II (150kg-600kg)	Tactical	Up to 18,000ft (AGL)	200km (LOS)	Hermes 450
Class I (<150kg)	Small (>15kg)	Up to 5,000ft (AGL)	Up to 50km (LOS)	Scan Eagle
	Mini (<15kg)	Up to 3,000ft (AGL)	Up to 25km (LOS)	Skylark
	Micro** (<66kg)	Up to 200ft (AGL)	Up to 5km (LOS)	Black Widow

* In the event the UAS is armed, the operator should comply with the applicable Joint Mission Qualifications in ATP-3.3.7 (STANAG 4670) and the system will need to comply with applicable air worthiness standards, regulations, policy, treaty, and legal considerations.

** UAS that have a maximum energy state less than 66 Joules are not likely to cause significant damage to life or property, and do not need to be classified or regulated for air worthiness, training, etc. purposes unless they have the ability to handle hazardous payloads (explosives, toxins, chemical/biological agents, etc.)

UKRAINE AND CONFLICTS WITH RUSSIAN-BACKED SEPARATISTS IN CRIMEA AND DONBAS

The post-Soviet conflicts that have received most international attention, until now, have been the separatist wars in Ukraine. In November 2013, the Euromaidan movement in Ukraine began a series of protests against President Yanukovich's decision to reject a deal on closer integration with the EU. A government crackdown on the protests led to increased resistance and the President fled. In the ensuing turmoil regions with large Russian populations held counter-protests. In Crimea, pro-Russian protesters took control of government buildings. Putin deployed Russian troops to Crimea to "protect Russian citizens" and they oversaw what Kyiv (and the international community) declared an illegal referendum in March 2014, which resulted in 93% of the population voting to join the Russian Federation. Putin then moved to annex the region and it remains the case that Crimea is under Russian control.³

Ukraine, Crimea and the Donbas



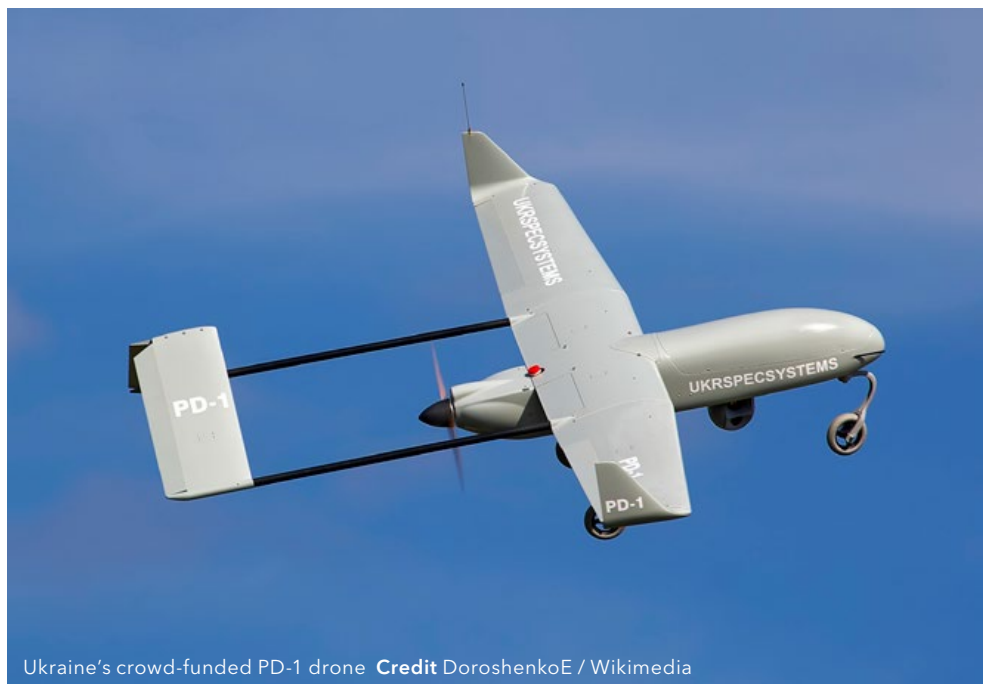
³ 'Conflict in Ukraine', Global Conflict Tracker, Council on Foreign Relations, <<https://www.cfr.org/global-conflict-tracker/conflict/conflict-ukraine>>, last accessed 02 Jul 20

This gave a green light to separatists in the eastern provinces of Luhansk and Donetsk – collectively known as the Donbas and with large Russian populations – to declare independence from Ukraine in March 2014. Heavy fighting ensued here also, but Moscow did not react in the same way and the conflict remains unresolved. The downing of the Malaysian Airlines flight in July 2014 by a Russian missile over Donbas catapulted this conflict into an international crisis that led to the impositions of sanctions by NATO members and the EU on Russia and Russian individuals.

Fighting between the Ukrainian military and Russian backed separatists in the Crimea and Donbas has cost at least 10,000 lives and resulted in 1.5mn internally displaced persons to date, despite attempts to broker a ceasefire since February 2015. The Minsk Accords, as these agreements are known, have yet to reach a conclusion and violations of the ceasefire occur on a daily basis.⁴

Use of Drones in Crimea & the Donbas

Small drones have been used by the Ukraine, Russia, and Russian backed separatists in both Crimea and Donbas. Notably, in 2014, separatists used drones extensively for intelligence gathering on the movement of Ukrainian troops, an advantage that the Ukrainian military could not match at the time.⁵ In fact, it is not clear if the Ukraine even used their ageing Soviet-era drones. Nor, according to industry insiders, did the Ukrainian Ministry of Defence (MoD) provide the necessary funds for new projects to move forward in the early stages of the conflict. As a result, in April 2014, during fighting in the Donbas, a crowd-funding campaign raised money for the National Aviation University's Military Institute to develop a "people's drone," known as the PD-1. Over the next few years, the military continued to turn to small private start-ups and young tech enthusiasts who were keen to develop the industry, advancing to the construction of military grade surveillance drones.⁶



Ukraine's crowd-funded PD-1 drone **Credit** DoroshenkoE / Wikimedia

4 Kilmenko, *Protracted Armed Conflicts in the Post-Soviet Space*

5 Pavel Felgenhauer, 'Russia Seizes Opportunity to Expand Drone Usage', *Terrorism Monitor*, 15/17, Jamestown Foundation, <<https://jamestown.org/program/russia-seizes-opportunity-to-expand-drone-usage/>>, 11 Sep 17

6 Maksym Bugriy, 'The Rise of Drones in Eurasia (Part One: Ukraine)', *Eurasia Daily Monitor*, 11/113, Jamestown Foundation, <<https://jamestown.org/program/the-rise-of-drones-in-eurasia-part-one-ukraine/>>, 23 Jun 14; John Wendle, 'The Fighting Drone of Ukraine', *Air & Space Magazine*, <<https://www.airspacemag.com/flight-today/ukraines-drones-180967708/>>, Feb 18

As the conflicts in the Ukraine continued without resolution, the Ukrainian armed forces pursued new capabilities. The US stepped in to provide surveillance and reconnaissance capacity in the form of RQ-11B Raven drones at a cost of \$9mn. This package comprised of 24 unmanned air systems (UAS), a total of 72 aircraft.⁷ However, Russians electronic warfare (EW) equipment easily jammed the signals of the Raven drones and gave away the positions of Ukrainian troops.⁸ In total the US provided \$770mn of military assistance to the Ukraine between 2014-17 and a further \$421mn in 2018, which included new “advanced UAVs that could withstand Russian jamming.”⁹

The Ukrainian MoD also increased investment in indigenous drone capabilities and, as a result, its first military grade drone, the БпАК MP-1, was purchased in 2016 from the state owned defence company UkrOboronProm. At the time, it was said that within a year the MP-1 would be fitted with “combat capabilities”, but to date, this does not appear have been come to pass.¹⁰ Nonetheless, since the introduction of the MP-1, Ukraine has fielded a number of other indigenous Class I drones, as well as a sizeable inventory of loitering munitions (see table below).

Armed Drones on the Horizon

It was not until 2017 that Ukrainian Antonov State Company unveiled the Gorlytsa, an armed Class II drone, set to enter service in 2018.¹¹ However, very little has been heard of this drone since its first unveiling and it is not clear if it is yet in service. There is certainly no evidence of strikes carried out by an indigenous armed drone. A year later in 2018, Antonov also announced the development of another armed drone, a High-Altitude Long-Endurance (HALE) UAV. A scale model was unveiled at a military exhibition in Kyiv but no completion date for development was announced.¹²



Gorlytsa drone Credit UkrOboronoProm

7 Grant Turnbull, 'Ravens swoop on Ukraine', Shephard Media News, <<https://www.shephardmedia.com/news/uv-online/ravens-swoop-ukraine/>>, 28 Jul 16

8 Andrew White, 'AOC 2019: Ukraine details Russia's EW actions in Donbas region', Shephard Media News, <<https://www.shephardmedia.com/news/digital-battlespace/aoc-2019-ukraine-details-russias-ew-actions-donbas/>>, 31 Oct 19

9 Ihor Kabanenko, 'US Defense Secretary's Visit to Ukraine and Perspectives for US-Ukraine Military cooperation', *Eurasia Daily Monitor*, 14/114, Jamestown Foundation, <<https://jamestown.org/program/us-defense-secretarys-visit-to-ukraine-and-perspectives-for-us-ukraine-military-cooperation/>>, 19 Sep 17

10 Jaroslav Adamowski, 'Ukraine launches First Military UAV To Combat Insurgents', *Defence News*, <<https://www.defensenews.com/home/2016/02/04/ukraine-launches-first-military-uav-to-combat-insurgents/>>, 04 Feb 16

11 Patrick Tucker, 'Ukraine Fields an Armed Drone for Use Against Pro-Russian Forces', *Defense One*, <<https://www.defenseone.com/technology/2017/11/ukraine-fields-armed-drone-use-against-russia/142651/>>, 17 Nov 17

12 Dylan Malyasov, 'Antonov unveils long-endurance unmanned aircraft system concept', *Defence Blog*, <<https://defence-blog.com/news/antonov-unveils-long-endurance-unmanned-aircraft-system-concept.html>>, 09 Oct 18

Despite the lack of any large armed drone, both the Ukrainian forces and Russian-backed separatists continue to use small drones adapted to drop grenades, as well as loitering munitions and small surveillance drones. In violation of ceasefire conditions drones regularly cross territorial boundaries for ISR missions and sometimes drop grenades.¹³

At the time of writing, it is most likely that the first strike from an armed drone will come from a Bayraktar TB-2, purchased by Ukraine from Turkish firm Baykar. The original deal, signed off in January 2019, was for six air frames and said to be worth \$69mn.¹⁴ Commanders of the Ukrainian Armed Forces told media that the Bayraktar drones would be deployed to the Donbas.¹⁵ The first Bayraktar mission was conducted in March of this year.¹⁶ More recently, Turkey's *Daily Sabah* news site reported that Ukrainian armed forces plan to purchase a further 48 Bayraktar TB-2, speculating that this could mean joint production with state-owned UkrSpec Export in the Ukraine.¹⁷ The *Daily Sabah* also reported that Ukraine will buy five more airframes for delivery in 2021.¹⁸

Turkey and Ukraine are also developing a close military-industrial relationship, covering joint production of cargo aircraft, tanks, and drones. UkrSpec Export and Baykar-Makina announced deal in Aug 19 for the "development of a new generation of UAV."¹⁹ This is the Akinci heavy strike drone, currently undergoing tests. The cooperation agreement also includes other armaments and equipment, but Akinci is said to be the priority.²⁰ Further agreements have been signed in 2020.²¹

The military-industrial cooperation developing between Ukraine and Turkey will introduce armed drones in to a live conflict in the coming months, with a significant increase in capacity over the next few years. As we have seen in Libya and Nagorno-Karabakh, this brings increased opportunities for violence and recent Ukrainian military drills suggest that Bayraktar TB-2 drones will be used to pursue fighting in more urban areas, even if they themselves are not used to strike. As a report in the *Daily Sabah* said, quoting Ukrainian military officials:

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- 13 'Ukrainian soldier injured in Donbas after enemy drone grenade drop', Unian, <https://www.unian.info/war/ukrainian-soldier-injured-in-donbas-after-enemy-drone-grenade-drop-11031800.html?utm_source=twitter&utm_medium=twitter&utm_campaign=twitter_site>, 11 Jun 20; 'Donbas truce: Ukraine reports four enemy provocations on Aug 9', Unian, <https://www.unian.info/war/donbas-truce-ukraine-reports-four-enemy-provocations-on-aug-9-11106734.html?utm_source=social_enemhttps&utm_medium=share&utm_campaign=site>, 10 Aug 20
- 14 Leonid Nersisyan, 'PREMIUM: Ukraine aims Javelin and Bayraktar at Donbas rebels', Shepherd Media News, <<https://www.shephardmedia.com/news/defence-notes/premium-ukraine-aims-javelin-and-bayraktar-donbass/>>, 20 Jul 20
- 15 Nersisyan, 'PREMIUM: Ukraine aims Javelin and Bayraktar at Donbas rebels'; 'Poroshenko: Turkish Bayraktar tactical UAS already in Ukraine - trials about to begin', Interfax Ukraine, <<https://en.interfax.com.ua/news/general/570760.html>>, 06 Mar 19; 'Ukrainian military learning to operate Turkish combat drones', Ukrinform, <<https://www.ukrinform.net/rubric-defense/2773357-ukrainian-military-learning-to-operate-turkish-combat-drones.html>>, 04 Sep 19
- 16 'Shock UAV Bayraktar TB" rose in to the sky', Army Inform, <<https://armyinform.com.ua/2020/03/udarni-bpla-bayraktar-tb2-pidnyalysya-v-nebo/>>, 15 Mar 20
- 17 'Ukraine considers buying 48 Bayraktar TB-2 drones from Turkey', Daily Sabah, <<https://www.dailysabah.com/business/defense/ukraine-considers-buying-48-bayraktar-tb2-drones-from-turkey>>, 06 Oct 20
- 18 'Ukraine to buy 5 more Turkish Bayraktar TB2 drones in 2021', Daily Sabah, <<https://www.dailysabah.com/business/defense/ukraine-to-buy-5-more-turkish-bayraktar-tb2-drones-in-2021>>, 27 Nov 20
- 19 'Ukraine and Turkey agree to collaborate on new UAV', Shephard Media, <<https://www.shephardmedia.com/news/uv-online/ukraine-and-turkey-agree-collaborate-new-uav/>>, 13 Aug 19
- 20 Yuri Lapaiev, 'The Akinci Strike Drone and Ukrainian-Turkish Defense Cooperation', *Eurasia Daily Monitor*, 17/19, The Jamestown Foundation, <<https://jamestown.org/program/the-akinci-strike-drone-and-ukrainian-turkish-defense-cooperation/>>, 12 Feb 20
- 21 Metin Gurcan, 'Turkey on course for strategic partnership with Ukraine', Al-Monitor, <<https://www.al-monitor.com/pulse/originals/2020/10/turkey-russia-increasing-defense-cooperation-ankara-kyiv.html>>, 22 Oct 20

“The armed forces tested the Bayraktar TB2 and Javelin missiles in drills that were conducted with combat fire, a separate *Armiya Inform* report published Thursday said.

The drill... us[ed] a concept involving combat shooting in residential areas, [and] saw the UAVs carry out reconnaissance missions without practical strikes on targets, in small tactical group exercises, concentrated missile attacks and air strikes. The report noted that particular attention was paid to the integrated use of high-precision weapons, electronic warfare (EW), automated control systems and weapons with the latest technology.”²²

Here the risks are transferred from soldier to civilian as aircrew operate remotely over civilian areas.

As for the internationalisation of the conflict, another factor contributing to tensions has been the use of a US Global Hawk drone in the region, as well as other manned surveillance aircraft. Flight tracking websites regularly capture Global Hawk positions across the Ukraine, Black Sea and Crimea.²³

Russian and Separatist use of Drones

Fighting in the Crimea and Donbas has also seen Ukrainian paramilitary groups and pro-Russian separatists use small commercial drones, such as DJI Phantom Quadcopters, for reconnaissance as well as arming them with grenades.²⁴

However, these are far from the only unmanned capabilities in the separatist regions. The Ukrainian military have displayed a number of small Russian-made drones that they have shot down, and investigative journalists using open source material have catalogued the presence of at least nine Russian drones over Crimea and the Donbas (see table below).²⁵ This covers nearly all the drones that the Russian military operates according to *The Drone Databook*, the most comprehensive list of drones in use by militaries across the world.²⁶

The difficulty in this conflict, as with many others, is ascribing responsibility for the use of drones. Russian armed forces are known to have operated Forpost and Orlan-10 drones over Crimea (since 2014), Donbas (since 2015) and North Ossetia.²⁷ Advanced Russian EW equipment that is said to operate in conjunction with the Orlan-10 is also being put to good effect in the conflicts. The EW system, Leer-3, can locate electromagnetic signals, jam mobile signals as well as hijack them. This capability was developed by the Russian military in Syria and has been used in Donbas by either separatists or the Russian military

22 'Ukraine to buy 5 more Turkish Bayraktar TB2 drones in 2021', *Daily Sabah*

23 David Cenciotti, 'Here's the route of a US RQ-4 Global Hawk drone on a surveillance mission over Ukraine and eastern Europe', *Business Insider*, <<https://www.businessinsider.com/route-of-us-rq-4-global-hawk-drone-surveillance-mission-over-ukraine-2017-7?r=US&IR=T>>, 20 Jul 17; @5472_nde, Twitter status with screen grab from PlaneRadar.ru, <https://twitter.com/5472_nde/status/1287437856953303042/photo/1>, 26 Jul 20; Gerjon, Twitter status update, <https://twitter.com/Gerjon_/status/1314566560737120256>, 09 Oct 20

24 Roman Pagulich and Stuart Greer, 'Deadly DIY Drones In The Donbas', *Radio Free Europe/Radio Liberty (RFE/RL)* video, <<https://www.rferl.org/a/deadly-diy-drones-in-the-donbas/30445714.html>>, 21 Feb 20

25 'Russia uses more than eight types of UAVs in the Donbas', *Inform Napalm*, <<https://informnapalm.org/en/russia-uses-more-than-eight-types-of-uavs-in-the-donbas/>>, 09 Mar 19; Jonathan Ferguson & N.R. Jenzen-Jones, *Raising Red Flags: An Examination of Arms & Munitions in the Ongoing Conflict in Ukraine*, *Armament Research Services*, 3, 2014, <<http://armamentresearch.com/Uploads/Research%20Report%20No.%203%20-%20Raising%20Red%20Flags.pdf>>, p. 81

26 Dan Gettinger, *The Drone Databook*, Centre for the Study of the Drone (Bard College, NY: 2019), <<https://dronecenter.bard.edu/files/2019/10/CSD-Drone-Databook-Web.pdf>>, p. 64

27 Piotr Butowski, 'Russian Orion UAV, Equivalent To MQ-1 Predator, To Enter Service Soon', *Aviation Week*, <<https://aviationweek.com/defense-space/sensors-electronic-warfare/russian-orion-uav-equivalent-mq-1-predator-enter-service>>, 29 Oct 19

itself since 2017.²⁸ As well as Ukrainian drones, not least the imported Ravens, a drone belonging to the OSCE's Special Monitoring Mission (SMM) went missing over the Donetsk province in October 2018, and although the SMM said staff had seen Russian EW equipment in the region, the report noted that there was no evidence of direct Russian involvement.²⁹ This lack of transparency and inability to ascribe responsibility for acts of war is typical of drone and remote warfare, and is one of the worrying trends that are seen in today's battle spaces and beyond where drones are in operation.

Ukrainian Drones

Drone Type (Name and origin)	Specifications	Notable Deployments
ACS-3 Raybird (Skyeton, Ukraine)	Class I drone with a range of 250km, ceiling of 3000m and endurance of over 24hrs. ³⁰	Introduced in 2019 and deployed to Donbas. ³¹
Bayraktar TB-2 (Baykar, Turkey)	Class III armed tactical drone with 6.5m length and 12m wingspan. A range of 150km, endurance of 24hrs and max speed of 135knots. ³²	Introduced in 2019 and pilots are currently undergoing training. ³³
FlyEye (WB Electronics, Poland)	Class I drone with a 3.6m wingspan and 1.8m length. Can fly at 160km/h for a range of 180km, with an endurance of 2.5hrs. ³⁴	Introduced in 2018. ³⁵
Fury (Athlone Air, Ukraine)	Class I drone with a 1.06m long with a 1.6m wingspan. It has a cruising speed of 100km/h and distance of 50km. ³⁶	Drone specialised for artillery spotting. Introduced in 2015. Deployed to Donbas. ³⁷
Leleka 100 (DeViro, Ukraine,)	Class I drone with a length of 1.1m with a wingspan of 2m. It has a service ceiling of 1,500m and endurance of 2.5hrs. ³⁸	In service since 2015 according to UkrSpec Systems, but testing began with army in 2017. Possibly in service in Donbas. ³⁹
PD-1 (Aviation University, Ukraine)	Class I drone with a wingspan of 4m and max take of weight of 40kg. It has a flight time of 10hrs and a service ceiling 3,000m. ⁴⁰	The crowd-funded 'Peoples' Drone', introduced in 2016. One report suggests a new configuration will be armed. ⁴¹

28 Grant Turnbull, 'EW Europe: Ukraine highlights EW threat', Shephard Media, <<https://www.shephardmedia.com/news/digital-battlespace/ew-europe-ukraine-highlights-ew-threat/>>, 30 May 17

29 Yuri Lapaiev, 'Ukraine Buys Advanced Turkish Strike Drones', *Eurasia Daily Monitor*, 16/15, Jamestown Foundation, <<https://jamestown.org/program/ukraine-buys-advanced-turkish-strike-drones/>>, 06 Feb 19

30 'Raybird-3 Conquering New Heights', *Ukrainian Defense Review*, 3, <https://issuu.com/ukrainian_defense_review/docs/udr3_magazin_/42?fbclid=IwAR2-BQmvVPoPll6bEqFsq1zqt32iOqIK2wkRTLhq57aFQsWstw4Cr1Ksxs0>, 28 Aug 19, pp. 42-3

31 Gettinger, *Drone Databook*, p. 77

32 Baykar Catalogue, <https://www.baykarsavunma.com/upload/ingilizce/Baykar_catalog_eng.pdf>, last accessed 09 Nov 20

33 'Ukraine', Country Profiles, European Forum Against Drones, <<https://www.efadrones.org/countries/ukraine/>>, last accessed 26 Aug 20

34 'FLYEYE mini UAS', WB Electronics, <<https://www.wbgroup.pl/en/produkt/flyeye-unmanned-aerial-system/>>, last accessed 09 Nov 20

35 Gettinger, *Drone Databook*, p. 77

36 'A1 C Fury. Specifications. A Photo.', Avia Pro, <<https://avia-pro.net/blog/a1-s-furiya-tehnicheskije-harakteristiki-foto>>, 18 Apr 17

37 112 Ukraine, 'Ukraine begins testing of domestic drone Leleka', 112 International, <<https://112.international/society/ukraine-begins-testing-of-domestic-drone-leleka-100-13820.html>>, 06 Feb 17

38 'Leleka-100 Unmanned aerial system', UkrSpec Systems, <<https://ukrspecsystems.com/leleka-100-electric-uav>>, last accessed 09 Nov 20

39 Ukraine, 112 International

40 'PD-1 unmanned aerial system', UkrSpec Systems, <<https://ukrspecsystems.com/pd-1-3>>, last accessed 09 Nov 20

41 'Ukraine's UCAV Capability', *Ukrainian Defence Review*, 1 (2020) <https://issuu.com/ukrainian_defense_review/docs/udr1_magazine_issuu/s/10208334>, accessed 27 Aug 20

Drone Type (Name and origin)	Specifications	Notable Deployments
RQ-11B Raven (AeroVironment, USA)	Class I drone with a wingspan of 1.4m and length of 0.9m. It has a range of 10km and endurance of 60-90mins. ⁴²	A total of 72 airframes introduced to Air Force in 2016 and deployed to both Crimea and Donbas. ⁴³
Spectator-M1 (JSC Meridian, Ukraine)	Class I drone with a 3m wingspan and 1.2m in length. It can reach 2000m and a speed of 120km/h, and has a 2hr flight duration. ⁴⁴	Upgraded versions introduced in 2019 and deployed to Crimea. ⁴⁵
Loitering munitions		
RAM (CDET, Ukraine)	Can carry up to 3 different types of warheads up to 2 - 4kg. It has an operational range of 30km and speed of 50km/h and can stay airborne between 30 and 150 minutes depending on the weight of the payload. ⁴⁶	Unveiled in 2020 but not clear if in use yet. ⁴⁷
Warmate/Sokil (WB Electronics, Poland)	Can travel up to 150km/hr for 70mins to a range of 15km. ⁴⁸	Licensed for production in Ukraine in 2017.
Yatagan-2 (Ukraine)	Portable loitering munitions with a 12km range and 1kg warhead. ⁴⁹	Introduced in 2016. ⁵⁰
Under development		
Gorlytsa	Class II MALE drone with a wingspan of 6.7m, with an endurance of 7hrs. It has a tactical range of 80km (total range of 1,050km/h), service ceiling of 2,000m and a max speed of 230km/h. ⁵¹	Conducted its first flight in 2017 but little is known of the current status.

Paramilitary groups also use Polish Valkyrie and DJI phantom and Inspire quadcopters.⁵²

42 'Raven B', AeroVironment, <<https://www.avinc.com/tuas/raven>>, last accessed 09 Nov 20

43 Joseph Trevithick, 'America Is Still Training Ukrainian Troops to Fly a Drone They Hate', The Drive, <<https://www.thedrive.com/the-war-zone/8921/america-is-still-training-ukrainian-troops-to-fly-a-drone-they-hate>>, 04 Apr 17

44 'UAV Spectator', UkrOboronProm, <<https://ukroboronprom.com.ua/en/produksiya-ta-poslugy/36d6-m1-mobilna-trykoordinatna-radiolokatsijna-stantsiya.html>>, 14 Jul 15

45 'Enhanced Operational reach for Ukrainian Spectator-M Drone', GBP Defence and Aerospace, <<https://gbp.com.sg/stories/enhanced-operational-reach-for-ukrainian-spectator-m-drone/>>, 17 Apr 18

46 Nikolai Novichkov, 'Ukraine unveils new RAM loitering munition', Jane's Equipment Intelligence, <<https://www.janes.com/defence-equipment-intelligence/ukraine-unveils-new-ram-loitering-munition>>, 09 Mar 20

47 Novichkov, *ibid*

48 'WARMATE loitering munitions', WB Group, <<https://www.wbgroup.pl/en/produkt/warmate-loitering-munitions/>>, last accessed 09 Nov 20

49 Wim Zwijnenburg and Foeke Postma, *Unmanned Ambitions: Security implications of growing proliferation in emerging military drone markets*, Pax, <<https://www.paxforpeace.nl/publications/all-publications/unmanned-ambitions>>, July 2018, p.30

50 Ukraine Country Profile, EFAD

51 Dylan Malyasov, 'Ukraine rolls out new Gorlytsa tactical unmanned aircraft', Defence Blog, <<https://defence-blog.com/news/ukraine-rolls-out-new-gorlytsa-tactical-unmanned-aircraft.html>>, 08 Nov 17

52 Gettinger, *Drone Databook*, p. 78

Russian and Separatists Drones

Drone (Name and Origin)	Specifications	Notable Deployments
Eleron-3CB (CBRN International, Turkey)	Class I drone with a speed of 70 - 130km/h and a flight duration of 2hrs. ⁵³	Introduced in 2013 and deployed in Donbas. ⁵⁴
Forpost (IAI Searcher, produced in Russia under licence by State Factories)	Class II drone 5.85m long with a wingspan of 8.55m. It has a max speed of 200km/h and a service ceiling of 6,100m. ⁵⁵	Used extensively across Russian armed forces. Flown over Crimea and Donbas since 2014. ⁵⁶ Upgraded fleet sent to Crimea in 2019. ⁵⁷ Also deployed to North Ossetia with the Airforce. ⁵⁸
Granat-1, 2 & 4 (Klashnikov, Russia)	Class I drone. Specifications for Granat-4 are 3.2m wingspan, operational range of 700km and speed of 90km/h and altitude of 3,500m. ⁵⁹	Granat-1 used since 2010 and other models followed. Deployed in Donbas.
Phantom (DJI, China)	Quadcopter with a max flight time of 28mins and a max speed of 20m/s. ⁶⁰	Used by both paramilitary groups and the Russian army.
Orlan-10 (Special Technology Centre, Russia)	Class I drone with max range of 150km, speed of 150km/h, service ceiling of 5,000m and endurance of 16hrs. ⁶¹	Introduced in 2013 to Northern, Pacific, Baltic and Black Sea fleets that set up specific UAV regiments. ⁶² Used regularly in Crimea and Donbas.
Tachyon (Kalashnikov, Russia)	Class I mini drone, with a speed of 54km/h and service ceiling of 4,000m. ⁶³	Entered service in 2015. For conducting reconnaissance missions for ground troops. ⁶⁴
Zastava (IAI Bird Eye, produced under licence in Russia)	Class I mini drone with a 2.2m wingspan. It has a max speed of 83km, range of 10km and service ceiling of 304m. ⁶⁵	Introduced in 2013. ⁶⁶ Ukrainian websites have been publishing photos of downed Zastava drones in Donbas since 2015. ⁶⁷

53 'Eleron-3CB', CBRN International, <https://cbrnintl.com/UAV_Eleron-3CB.html>, last accessed 10 Nov 20

54 Gettinger, *op cit*, p. 69

55 'Forpost ISR', Military Factory, Aviation/Aerospace, <https://www.militaryfactory.com/aircraft/detail.asp?aircraft_id=1486>, 19 Feb 20

56 Piotr Butowski, 'Russian Orion UAV, Equivalent To MQ-1 Predator, To Enter Service Soon', Aviation Week, <<https://aviationweek.com/defense-space/sensors-electronic-warfare/russian-orion-uav-equivalent-mq-1-predator-enter-service>>, 29 Oct 19; @DFRLab, 'Five downed Russian Drones in Ukraine', Medium, <<https://medium.com/@DFRLab/five-downed-russian-drones-in-ukraine-b76d53d4bcf0>>, 06 Jan 17

57 'Russia deploys squadron of reconnaissance drones in Crimea', UA Wire, <<https://www.uawire.org/russia-deploys-squadron-of-reconnaissance-drones-in-crimea>>, 15 Aug 19

58 Butowski, 'Russian Orion UAV'

59 David Oliver, 'Russia's Rapid UAV Expansion', Armada International, <<https://armadainternational.com/2019/03/russias-rapid-uav-expansion/>>, 22 Mar 19

60 'Phantom 4', DJI, <<https://www.dji.com/uk/phantom-4/info>>, last accessed 10 Nov 20

61 'STC Orlan-10', Military Factory, Aviation/Aerospace, <https://www.militaryfactory.com/aircraft/detail.asp?aircraft_id=1877>, 15 Oct 18

62 Butowski, 'Russian Orion UAV'

63 'Takhion', Deagel, <<https://www.deagel.com/Cannons%20%26%20Gear/Takhion/a003135>>, last accessed 10 Nov 20

64 *ibid*

65 'BirdEye 400 Unmanned Aerial Vehicle', Airforce Technology, <<https://www.airforce-technology.com/projects/birdeye400/>>, last accessed 10 Nov 20

66 Gettinger, *Drone Databook*, p. 64

67 'Russian drone Zastava, a.k.a. Israeli Bird Eye 400, downed in Donbas by Ukrainian Forces, Inform Napalm, <<https://informnapalm.org/en/russian-zastava-drone-donbas/>>, 10 Sep 16

GEORGIA, SOUTH OSSETIA AND ABKHAZIA

On Russia's southern border between the Black Sea and Caspian Sea, the two separatist regions of Georgia - South Ossetia and Abkhazia - remain in a state of unresolved conflict. As the Soviet Union disintegrated both regions declared independence from Georgia. Protracted wars were fought in the early 1990s and although ceasefires were agreed between Georgia and its breakaway regions (South Ossetia in 1992 and Abkhazia in 1994) the territorial questions have never been fully resolved. Instead, both South Ossetia and Abkhazia set up their own governments and continued to pursue independence, supported by Russia whose troops remained in both regions as peacekeepers.

Regular ceasefire violations notwithstanding, this stalemate continued until the Revolution of Roses in Georgia in 2003, when President Mikheil Saakashvili came power. Saakashvili headed up a populist government that pursued a pro-Western foreign policy at the expense of relations with Russia, South Ossetia and Abkhazia. In other words, the government began to advocate for the full reintegration of South Ossetia and Abkhazia in to Georgia and membership of NATO, in an effort to halt the creeping, and they feared permanent, break up of Georgian territory.

Georgia, South Ossetia and Abkhazia



The Georgian government began heavy investment in its armed forces, signalling a willingness to use force to achieve its aims. Aware that Saakashvili's populism was based firmly on nationalistic rhetoric and anti-Russian sentiment, some analysts suggest that Russian military planners goaded the Georgian government to war in 2008, after NATO agreed a Membership Action Plan (MAP) with Georgia. The Russian military carried out multiple military exercises near the Georgian border and also shot down Georgian reconnaissance drones over Abkhazia. It was clear conflict would break out and it was assumed this would take place in Abkhazia as a result of the provocative acts by both Georgia and Russia.⁶⁸ However, a South Ossetian leader was assassinated by a group of non-state actors and, in retaliation, an attempt was made on a Georgian leader's life. Russia ordered an evacuation of citizens to its border and clashes began in South Ossetia. This five-day war in August 2008 ended in defeat for Georgia.⁶⁹ Russia was thus able to stay in both South Ossetia and Abkhazia, framing itself as peacekeeper despite being a party to the conflict and supporting the independence of the breakaway regions.

Today, no political settlement has been reached and the so-called Administrative Boundary Lines (ABLs) mark the borders of South Ossetia and Abkhazia in Georgia. However, Russian and separatist personnel have constructed fences and check points in violation of agreements and to the detriment of the human rights of people living in those areas who are separated from family and land.⁷⁰ Violence continues along the ABLs, if not by Russian or Georgian militaries, then by paramilitary groups on both sides and some of this violence is sparked by periodic drone incursions across the ABLs.⁷¹



Borderisation of the Administrative Boundary Line (ABL) South Ossetia at Khurvalleti: separating villagers from their land. Guarded by Georgian Police in picture. Credit Jelger Groeneveld / Wikimedia

68 Michael Kofman, 'The August War, Ten years On: A retrospective of the Russo-Georgian War', War on the Rocks, <<https://warontherocks.com/2018/08/the-august-war-ten-years-on-a-retrospective-on-the-russo-georgian-war/>>, 17 Aug 18

69 Kilmenko, *Protracted Armed Conflicts in the Post-Soviet Space*

70 *Behind Barbed Wire: Human Rights Toll of "Borderization" in Georgia*, Amnesty International (London: 2018), <<https://www.amnesty.org/download/Documents/EUR5605812019ENGLISH.PDF>>

71 Giorgi Lonsadze, 'Clash of drones highlights rising tensions over South Ossetia', Eurasianet, <<https://eurasianet.org/clash-of-drones-highlights-rising-tensions-over-south-ossetia>>, 04 Sep 19; Seskuria, 'Russia's 'Silent' Occupation'

Use of Drones Along the ABLs

Drone acquisition and use has a somewhat chequered history in this region. Georgia invested in Hermes 450 in 2007 but this acquisition floundered on two counts. Firstly, in April 2008, a Russian air force jet downed a Hermes 450 over Abkhazia, one of the headline events that helped move Russia and Georgia towards war.⁷² Video footage from the drone was released by Georgia and investigated by the UN who found that it was indeed a Russia MIG-29 that carried out the shooting, but that the Georgian drone had strayed in to contested air space.⁷³ It was quickly followed by a claim from Abkhazian separatists that they had downed two small Georgian drones, although this was denied by Georgian authorities.⁷⁴



A Hermes-450

In another disaster for Georgia's Hermes capability, Elbit Systems, the Israeli company that make Hermes 450, filed a case in the UK High Court in 2011 against the Georgian government for non-payment of the 2007 deal. Elbit claimed \$100mn was outstanding but the case was eventually settled when the Georgian government paid \$35mn and returned equipment to Elbit, assumed to be the Hermes 450 systems.⁷⁵

As such, Georgian acquisition of drones has been slow. According to *The Drone Databook*, Georgia today only operates the Elbit Skylark, a mini drone, although they have previously operated Aeronautics Aerostar as well as the Hermes 450.⁷⁶

72 Nina Akhmeteli, 'Georgia Claims "Clear Proof" of Russian Violation of Air Space', Eurasianet, <<https://eurasianet.org/georgia-claims-clear-proof-of-russian-violation-of-air-space>>, 22 Apr 08

73 'UN backs Georgia over drone claim', BBC News Channel, <<http://news.bbc.co.uk/1/hi/world/europe/7420130.stm>>, last updated 26 May 18

74 'Rebels "hit two Georgian drones"', BBC News, <<http://news.bbc.co.uk/1/hi/world/europe/7382969.stm>>, 04 May 08

75 Joshua Kucera, 'Israeli Defence Contractor Sues Georgia, Says Tbilisi never Paid for Drones', Eurasianet, <<https://eurasianet.org/israeli-defence-contractor-sues-georgia-says-tbilisi-never-paid-for-drones>>, 08 Apr 11; Joshua Kucera, 'With Drone Lawsuit Settled, Are georgian-Israeli Relations Back on Track?', Eurasianet, <<https://eurasianet.org/with-drone-lawsuit-settled-are-georgian-israeli-relations-back-on-track>>, 30 Dec 11

76 Gettinger, *Drone Databook*, p. 62

However, in 2012 a Georgian MP told Voice of America (VoA) Georgia News Service that Georgia was beginning to build its own drones, to be unveiled at an independence day parade that year. There were indeed small drones on display at the 2012 independence day parade, but it appears that these were a copy of an Estonian model.⁷⁷ An unmanned attack helicopter was also displayed at the 2015 independence day parade, developed by Georgian firm STC Delta, but little has been seen or heard of either of these UAVs since and their status is unknown.⁷⁸

More recently, in 2019, the Georgian Chief of Staff announced that the armed forces intended to replace all attack planes with drones, yet little other news regarding deals has come to light.⁷⁹ Thus, it seems to be an ambition that will take many years to come to fruition. The only announcement about any new drone acquisition has been for some unmanned helicopters – the Sniper UAV (Alpha 800) from Spanish firm Alpha UAS that will support the Georgian Defence Forces with “reconnaissance, exercise and rescue needs.”⁸⁰

Despite this lack of progress in military-grade drone capabilities, Abkhazian and South Ossetian forces regularly accuse Georgia of sending small drones over the ABLs and as far back as 2010, South Ossetian authorities claimed Georgian forces were sending between 4 to 8 drones per month.⁸¹ It also the case that Abkhazian and Ossetian forces use drones to monitor the ABL. Moreover, ‘activist’ and paramilitary groups have also used drones in ways that escalate tension. For example, in 2019, a Georgian activist group deliberately downed a South Ossetian drone by flying their own commercial drone in to the Ossetian drone, causing it to crash.⁸²

Russia, for its part, has UAV units stationed at both its military bases in South Ossetia and Abkhazia. Since 2015, the Russian Ministry of Defence has been training numerous military personnel in its South Ossetian base and it is known that this training has included Russia’s Orlan, Zastava, Granit and Leyer models.⁸³ However, the Russian military is only known to have used its Pchela-T model in a fairly limited capacity in its support of Abkhazia and South Ossetia, despite this extensive training.⁸⁴ The Southern division of the Russian military (responsible for the South Caucasus and Black Sea areas) has also trained extensively against drones in simulated exercises.⁸⁵

77 Military Parade in Kutaisi, Georgia - Independence Day - May 26th, 2012, The TbilisiCity YouTube channel, <<https://www.youtube.com/watch?v=lvJafRH5sEQ>>, 02 Jun 12; Joshua Kucera, ‘Is Georgia’s Homemade Drone Actually Estonian?’, Eurasianet, <<https://eurasianet.org/is-georgias-homemade-drone-actually-estonian>>, 19 Apr 1

78 Joshua Kucera, ‘Georgia Rolls Out New Armed Drone’, Eurasianet, <<https://eurasianet.org/georgia-rolls-out-new-armed-drone>>, 26 May 15

79 Joshua Kucera, ‘Georgia to Abandon All Attack jets, Replace Them With Drones’, Eurasianet, <<https://eurasianet.org/georgia-abandon-all-attack-jets-replace-them-drones>>, 07 Mar 19

80 ‘Spanish-produced drones to equip Georgian reconnaissance units, help in rescue missions’, Agenda, <<https://agenda.ge/en/news/2020/3002>>, 28 Sep 20

81 Joshua Kucera, ‘Georgian Drone War (of words) Hots Up Again’, Eurasianet, <https://eurasianet.org/georgian-drone-war-of-words-hots-up-again?utm_source=twitterfeed&utm_medium=twitter>, 16 Nov 10

82 Lonsadze, ‘Clash of drones’; ‘Servicemen of the Southern Military District have successfully used drones in exercises in Abkhazia’, RIA Novosti, <<https://ria.ru/20180913/1528440350.html>>, 13 Sep 18

83 Anna Maria Dyner and Gaidz Minassian, Workshop: *Russian Military Presence in the Eastern Partnership Countries*, EP/EXPO/B/COMMITTEE/FWC/2013-08/Lot6/07, Directorate General for External Policies, Policy Department (EU Parliament, Jun 16), p.28; ‘Servicemen of the Russian military base in Southern Ossetia started field training at the Dzartsemi range’, Ministry of Defense of the Russian Federation, News, <http://eng.mil.ru/en/news_page/country/more.htm?id=12054798@egNews>, 02 Sept 15

84 Brian Whitmore, ‘Putin’s deadly Zugzwang’, The Power Vertical, RFE/RL, <<https://www.rferl.org/a/putins-deadly-zugzwang/27067188.html>>, 11 June 15; Gettinger, *Drone Databook*, p. 67

85 ‘Anti-aircraft gunners of the Russian military base in Abkhazia hit the drones of the imaginary enemy’, Ministry of Defense of the Russian Federation, <https://function.mil.ru/news_page/country/more.htm?id=12121027@egNews>, 28 Apr 17; ‘Anti-aircraft gunners of the Southern Military District in Abkhazia, as part of the training, hit about 30 reconnaissance and attack drones of the “enemy”’, Ministry of Defense of the Russian Federation, <https://function.mil.ru/news_page/country/more.htm?id=12252207@egNews>, 13 Sep 19

Whilst there may not be a sophisticated drone war in the conflicts between Russia and Georgia and Abkhazian and South Ossetian separatist groups, drones are clearly seen as expendable tools to monitor ABLs, literally pushing the boundaries and contributing to destabilisation. However, with Georgia and Russia pushing to develop armed UAV capabilities, it is only a matter of time before these conflicts too become unregulated drone wars.

Georgia's Drones

Drone (Name and origin)	Specification	Notable deployments
Skylark (Elbit, Israel)	Class I mini drone with a 4.7m wingspan and 40kg weight. It has an endurance of 6hrs and a range of 100km. ⁸⁶	No confirmation
Copy of Estonian Swan drone	No information available.	First flown 2012 but not further information available. ⁸⁷

Russian Drones

Drone Type	Specification	Deployment
Granat	As above	Deployed since 2010. ⁸⁸
Orlan-10	As above	Introduced in 2013. ⁸⁹
Pchela-T	As above	Deployed in 2008 war, but military commanders said inoperable due to noise, image quality and low flight ceiling. ⁹⁰
Zastava (copy of IAI Bird Eye 500) ⁹¹	As above	Introduced in 2013. ⁹²

86 'SkylarkTM 3', Elbit Systems, <<https://elbitsystems.com/product/skylark-3/>>, last accessed 10 Nov 20

87 Zach Rosenberg, 'Georgia flies first domestically-built drone', Flight Global, <<https://www.flightglobal.com/georgia-flies-first-domestically-built-drone/104870.article>>, 10 Apr 12

88 Gettinger, *Drone Databook*, p. 64

89 *ibid.*, p. 64

90 *ibid.*, p. 69

91 'Russian Drone Zastava, downed' Inform Napalm

92 Gettinger, *op. cit.*, p. 64

4 ARMENIA, AZERBAIJAN AND NAGORNO-KARABAKH

Azerbaijan and Armenia have been locked in conflict over Nagorno-Karabakh since the dissolution of the Soviet Union. The Nagorno-Karabakh was an Autonomous Oblast, set up by the USSR to give some level of autonomy to the almost entirely Armenian population of this region that sits within Azerbaijan. However, as the Soviet Union collapsed, Azerbaijan brought Nagorno-Karabakh under its administrative authority, sparking a violent backlash. In December 1991, 99.89% of the population of Nagorno-Karabakh voted for complete independence from Azerbaijan and the Artsakh republic was established, supported by Armenia. Heavy fighting broke out killing approximately 30,000 and displacing hundreds of thousands. War continued until May 1994, when a ceasefire was brokered by Russia. No political settlement was reached and Armenia occupied part of Azerbaijan west of Nagorno-Karabakh, so that the Nagorno-Karabakh effectively ran along the border of Armenia.⁹³

Armenia, Azerbaijan and Nagorno-Karabakh



⁹³ Nagorno-Karabakh Conflict, Global Conflict Tracker, Council of Foreign Relations, <<https://www.cfr.org/global-conflict-tracker/conflict/nagorno-karabakh-conflict>>, update from 23 Jul 20

Substantial breaches of the ceasefire have occurred periodically, particularly since 2014, culminating in an outbreak of violence in April 2016 that became known as the 'Four Day War'. This serious upturn in violence saw clashes along the Line of Contact (LoC), the border area between Artsakh Defence Forces and the Azeri military, with upwards of 200 fatalities.⁹⁴ After 4 days a ceasefire was announced but violence continued throughout April. The media in Azerbaijan claimed a victory, or at least a turning of the tide after their territorial losses in 1994.⁹⁵

Over the summer and autumn of 2020, the most deadly fighting between Armenia and Azerbaijan since 1994 broke-out. In mid-July cross-border attacks began in a northern corner of the LoC. Clashes continued in the area up until 18th July when at least 16 soldiers and one civilian were killed.⁹⁶ However, heavy fighting restarted in September lasting six weeks, until a Moscow-brokered peace deal was signed on 10th November.⁹⁷ The deal has been hailed in Azerbaijan as a victory and met in Armenia with angry protests that aimed to oust the president for being a "traitor."⁹⁸ Much of the land occupied by Armenia has been returned to Azerbaijan, although a land corridor - the Lachin Corridor - will be retained for access between Armenia and Nagorno-Karabakh. Amid claims from both sides of deliberate targeting of civilian areas, it is said that around 2 - 4,000 soldiers and civilians were killed, and thousands more wounded.⁹⁹ Russia has sent 2,000 peace-keeping troops and Turkey will deploy troops to a monitoring and observation post in Azerbaijan. Putin has also indicated that much of the monitoring along the LoC will be carried out by drones.¹⁰⁰

Armenia and Azerbaijan are both highly militarised due to the deep mistrust as a result of the Nagorno-Karabakh dispute. Both have historically purchased most of their weaponry from Russia and have sought to modernise their armed forces since arms embargo restrictions were loosened in 2002.¹⁰¹ Azerbaijan has developed strong military-industrial links with Israel and is also supported today by Turkey. Armenia, on the other hand, continues to rely on Russia and other members of the Collective Security and Treaty Organisation (CSTO) whilst developing indigenous capacity and supporting the Artsakh Republic in its own manufacturing.

94 The Line of Contact denotes the boundary between Armenian (Nagorno-Karabakh defence) forces and Azerbaijani forces.

95 Laurence Broers, *The Nagorny-Karabkh Conflict: Defaulting to War*, Russian and Eurasia Program (Chatham House: London), <<https://www.chathamhouse.org/sites/default/files/publications/research/NK%20paper%2024082016%20WEB.pdf>>, Jul 16, p. 12

96 Andy Heil, 'Explainer: Armenian-Azerbaijani Violence A Deadly Reminder of Stalled Peace Efforts', RFE/RL, <<https://www.rferl.org/a/explainer-armenian-azerbaijani-violence-a-deadly-reminder-of-stalled-peace-efforts/30728634.html>>, 15 Jul 20

97 Nagorno-Karabakh Observer, Twitter status update, <<https://twitter.com/NKobserver/status/1287961576675389440>>, 28 Jul 20

98 RFE/RL Armenian Service, 'Anti-Government Protests Continue In Yerevan Amid Fury Over Karabakh Peace Deal', RFE/RL, <<https://www.rferl.org/a/new-anti-government-protest-planned-in-yerevan-amid-fury-over-karabakh-peace-deal/30944202.html>>, 12 Nov 20

99 Nvard Hovhannosyan and Nailia Bagirova, 'Armenia, Azerbaijan, Russia say sign deal to end Nagorno-Karabakh conflict', Reuters, <<https://uk.reuters.com/article/idUKKBN27P1F0>>, 09 Nov 20

100 'Turkish parliament approves troop deployment to Nagorno-Karabakh', Aljazeera, <<https://www.aljazeera.com/news/2020/11/18/turkish-parliament-approves-troop-deployment-to-nagorno-karabakh>>, 18 Nov 20

101 Kilmenko, *Protracted Armed Conflicts in the Post-Soviet Space*. The UN lifted a non-mandatory arms embargo in 2002, however, a non-mandatory OSCE embargo still remains in place. 'Non-mandatory UN arms embargo on Nagorno-Karabakh (Azerbaijan)', SIPRI Databases / Arms Embargoes, <https://www.sipri.org/databases/embargoes/un_arms_embargoes/nagorno-karabakh-azerbaijan-non-mandatory/non-mandatory-un-arms-embargo-on-nagorno-karabakh-azerbaijan>, last accessed 28 Jul 20; 'OSCE arms embargo on Nagorno-Karabakh (Azerbaijan)', SIPRI Databases / Arms Embargoes, <https://www.sipri.org/databases/embargoes/eu_arms_embargoes/azerbaijan>, last accessed 28 Jul 20

The use of drones in the Nagorno-Karabakh conflict

The rise in tensions in 2014 was, in part, attributed to the use of drones, as well as heavy weaponry since both were used in “probes testing the porosity of the LoC ... [resulting in] more civilian casualties.”¹⁰² Two years later, drones were a distinct feature of the Four-Day War, and it is said that this was the first inter-state conflict in which drones were deployed on specific combat missions: both surveillance and reconnaissance, and as targeting support for ground attacks.¹⁰³ It was also the first time loitering munitions were used in combat in an inter-state conflict, notably when Azerbaijan used a Harop to kill a bus-load of Armenian volunteers *en route* to the LoC.¹⁰⁴ Azerbaijan downed one Armenian drone during the Four-Day War and two in the following weeks, while Armenia claimed to have shot down 10 Azeri drones, although only 2 of these cases were confirmed.¹⁰⁵

The use of drones and loitering munitions was also a major component of the renewed fighting between Armenia and Azerbaijan in 2020, with some commentators dubbing it the ‘South Caucasus Drone War’.¹⁰⁶ In early clashes in July, Armenia said that drones – properly, loitering munitions – were used by Azerbaijan to attack civilian targets in Berd and their armed forces claimed to have shot down at least 13 of Azerbaijan’s drones and loitering munitions.¹⁰⁷ The Armenian military displayed these wreckagees at a press conference on 21st July.¹⁰⁸



102 Broers, *The Nagorno-Karabakh Conflict*, p. 7

103 Azad Garibov, ‘Karabakh: A New Theater for Drone Warfare?’, *Eurasia Daily Monitor*, 13/92, The Jamestown Foundation, <<https://jamestown.org/program/karabakh-a-new-theater-for-drone-warfare/>>, 11 May 16

104 Mike Eckel, ‘Nagorno-Karabakh Witnesses Debut Of ‘Kamikaze Drone’, RFE/RL, <<https://www.rferl.org/a/nagorno-karabakh-kamikaze-drone-debut/27658645.html>>, 06 Apr 16

105 Garibov, *op. cit.*; Fuad Shahbazov, ‘Azerbaijan to Boost Arms Exports in 2018’, *Eurasia Daily Monitor*, 15/8, The Jamestown Foundation, <<https://jamestown.org/program/azerbaijan-boost-arms-exports-2018/>>, 19 Jan 18

106 David Hambling, ‘Azerbaijan Threatens Chernobyl-Style ‘Catastrophe’ In Caucasus Drone War’, *Hye Tert* <<https://hyetert.org/2020/07/17/azerbaijan-threatens-chernobyl-style-catastrophe-in-caucasus-drone-war/>>, 17 Jul 20

107 Hambling, *ibid*

108 RFE/RL’s Armenian Service, Video: ‘Armenia Shows Off Alleged Azerbaijani Drones’, RFE/RL, <<https://www.rferl.org/a/armenia-shows-off-alleged-azerbaijani-drones/30739824.html>>, 21 Jul 20

Although the situation calmed down in August, violence again escalated towards the end of September. By 28th September, Azerbaijan claimed to have shot down 18 Armenian drones, and Armenia 27 Azeri drones, among other claims of losses inflicted.¹⁰⁹ These are likely inflated claims for 3 days of fighting, and the online propaganda battles make deciphering what exactly happened a challenge. Nonetheless, it is clear that although Armenia has previously had the upper hand in fighting over the Nagorno-Karabakh, in 2020 the Azeri use of ISR, strike drones and loitering munitions gave them advantages that enabled disruption to Armenian supply lines, depots and outposts deep inside Armenian controlled territory.¹¹⁰

During the renewed fighting Turkey publicly backed Azerbaijan and in July 2020, reports began to circulate that Turkish military assistance to Azerbaijan included Bayraktar TB-2 armed drones.¹¹¹ Bayraktar TB-2s have made their way in to various conflicts around the world and the Turkish government is clearly pushing them for export. The details of a deal with Azerbaijan are still somewhat opaque and exact capacity remains unconfirmed.

In September the Azeri military began to release footage of strikes, in which the screen matched previously released videos from Turkish TB-2 missions.¹¹² In October, Azerbaijan's President Ilham Aliyev told an interviewer on a Turkish news channel that, "thanks to advanced Turkish drones owned by the Azerbaijan military, our casualties on the front shrank."¹¹³ This was assumed to refer to the armed TB-2. Two weeks later on 19th Oct, the Artsakh Defence Army displayed the wreckage of a TB-2 that it claimed to have shot down after an air defence unit spotted several flying over their positions in the Karabakh.¹¹⁴

Russian press also released information from its armed forces that EW equipment had been used to jam and down nine TB-2 drones around the same time. However, Russian forces stated that these drones were near one of its military bases in Armenia, far from the Line of Contact and much closer to the Turkish border.¹¹⁵ Considering that the Bayraktar has a maximum range of 150km, this then raises questions as to where the drones were operated from and indeed, whether it was Turkey or Azerbaijan who were operating them throughout the fighting. For drones to become fully operational within the Azerbaijan military it would seem to be an exceedingly quick turnaround from a possible deal to fully operational systems. At the time of writing these questions are still unanswered.

Moreover, to add to the uncertainty, Turkey and Azerbaijan struck a credit deal for 200m Turkish lira in June that the Azeri MoD can spend on purchasing Turkish military equipment, and it was reported that this would primarily go

109 Sebastien Roblin, 'Turkish Drones Over Nagorno-Karabakh—And Other Updates From A Day-Old War', Forbes, <<https://www.forbes.com/sites/sebastienroblin/2020/09/28/turkish-drones-over-nagorno-karabakh-and-other-updates-from-a-day-old-war/?sh=6abf763070da>>, 28 Sep 20

110 Jack Watling and Sidharth Kaushal, 'The democratisation of Precision Strike in the Nagorno-Karabakh Conflict', RUSI Commentary, <<https://rusi.org/commentary/democratisation-precision-strike-nagorno-karabakh-conflict>>, 22 Oct 20

111 Hambling, 'Azerbaijan Threatens Chernobyl-Style 'Catastrophe''; 'Turkey's missiles, drones at Azerbaijan's service: Official', Hurriyet Daily News, <<https://www.hurriyetaidailynews.com/turkeys-missiles-drones-at-azerbajjans-service-official-156626>>, 17 Jul 20

112 Sebastien Roblin, 'Turkish Drones Over Nagorno-Karabakh - And Other Updates From A Day-Old War', Forbes, <<https://www.forbes.com/sites/sebastienroblin/2020/09/28/turkish-drones-over-nagorno-karabakh-and-other-updates-from-a-day-old-war/>>, 28 Sep 20

113 Ragip Soylu, 'Turkish armed drones used against Armenia, Azerbaijan confirms', Middle East Eye, <<https://www.middleeasteye.net/news/armenia-azerbaijan-conflict-turkey-drones>>, 05 Oct 20

114 'Artsakh Defence Forces Shoot Down Turkish Bayraktar Drone', Massis Post, <<https://massispost.com/2020/10/artsakh-defense-forces-shoot-down-turkish-bayraktar-drone/>>, 19 Oct 20

115 Stephen Bryen, 'Russia knocking Turkish drones from Armenian skies', Asia Times, <<https://asiatimes.com/2020/10/russia-knocking-turkish-drones-from-armenian-skies/>>, 26 Oct 20

towards the acquisition of the Baykar's Akinci drone, currently undergoing flight tests.¹¹⁶ The only thing that is certain, so far, is that Bayraktar TB-2 drone appears to have been used extensively in the recent Nagorno-Karabakh conflict and provided Azerbaijan with an advantage.

Bayraktar TB-2 armed drone Credit Bayhaluk / Wikimedia



Current speculation about acquisitions aside, Azerbaijan also has a close military-industrial relationship with Israel, from whom they have purchased numerous drones and loitering munitions. In 2008 a contract was signed with Aeronautics Defence Systems for the Aerostar drone, amongst other missile and defence systems. This relationship continued apace with the sale of surface-to-air missile systems, loitering munitions and larger surveillance drones between 2010 - 2017.¹¹⁷ However, Azeri acquisitions took a setback in 2017 in a well-publicised incident. The Aeronautics Orbiter-1k loitering munition was being tested in Azerbaijan in August 2017 and Azeri officials requested it to be test fired at an Armenian military position.¹¹⁸ When the operators refused, the request was carried out by senior representatives of Aeronautics and when it was reported, the Israeli Defence Ministry suspended all sales and advertising of military equipment to Azerbaijan, pending an investigation. After a year-long investigation, the company was charged with violating Israeli export control law and the ban on exports remained in

116 Mushvig Mehdiev, 'Azerbaijan Military May Soon Get Famed Turkish-Made Drones', Caspian News, <<https://caspiannews.com/news-detail/azerbaijan-military-may-soon-get-famed-turkish-made-drones-2020-6-7-16/>>, 10 Jun 20

117 Kavitha Surana, 'Israel Freezes Export of Suicide Drone to Azerbaijan After Allegation of Abuse', Foreign Policy, <<https://foreignpolicy.com/2017/08/30/israel-freezes-export-of-suicide-drone-to-azerbaijan-after-allegation-of-abuse-azerbaijan-armenia/>>, 30 Aug 17; Rahim Rahimov, 'Azerbaijan Shows off Polonez, LORA Missiles From Belarus, Israel', *Eurasia Daily Monitor*, 15/92, The Jamestown Foundation, <<https://jamestown.org/program/azerbaijan-shows-off-polonez-lora-missiles-from-belarus-israel/>>, 14 Jun 18; Kevjn Lim, 'Israel's Reluctant Friend', *The Diplomat*, <<https://thediplomat.com/2012/05/israels-reluctant-friend/>>, 12 May 12; SIPRI, Arms Transfer Database, Register of Military Equipment supplied to Azerbaijan, 2010 - 2019, <https://armstrade.sipri.org/armstrade/page/trade_register.php>, information generated 29 Sep 20

118 Kavitha Surana, 'Israel Freezes Export of Suicide Drone to Azerbaijan After Allegation of Abuse', Foreign Policy, <<https://foreignpolicy.com/2017/08/30/israel-freezes-export-of-suicide-drone-to-azerbaijan-after-allegation-of-abuse-azerbaijan-armenia/>>, 30 Aug 17

place for over a year but was lifted in January 2019.¹¹⁹ Ultimately, this does not seem to have dented the military-industrial relationship between Israel and Azerbaijan, since Azerbaijan's 2018 defence budget included costs for developing a version of the Orbiter-1K under licence, the Zarba-1K, as well as other indigenous drones.

Armenia, on the other hand, remains almost wholly dependent on Russia for arms imports. It is not listed as having any other significant suppliers in the SIPRI arms transfer databases.¹²⁰ However, reports from ArmHiTech, the Armenian international defence exhibition, suggest that some European and Chinese firms are making inroads in to the Armenian market. It also claims that Armenia is self-sufficient in "light weapons, optoelectrics and drones." The report says a loitering munition, among other models of small drones, were on display at the fair in 2018.¹²¹ This loitering munition, part of the 'KrunK' series of Armenian drones, is likely what has been referred to when commentators have said Armenia has used a "strike drone" in the recent violence.¹²²

Moreover, the Artsakh Republic, claims Armenian Radio, are producing their own loitering munition. A report states that, "trials have been successfully completed," and the loitering munitions will be ready for mass production in the "coming months."¹²³

The escalating use of armed drones, loitering munitions, and surveillance drones to support targeting was a hugely significant factor in this renewed violence, the most severe since 1994, and drones are clearly playing a role in the ability of the Azeri military in particular to extend its reach in conducting a violent campaign in the Nagorno-Karabakh.

119 'Israel Lifts Ban On 'Suicide' Drone Sales To Azerbaijan', Azatutyun (RFE/RL in Armenia), <<https://www.azatutyun.am/a/29752734.html>>, 05 Feb 19

120 SIPRI, Arms Transfer Database, Register of Military Equipment supplied to Armenia, 2010 - 2019, <http://armstrade.sipri.org/armstrade/page/trade_register.php>, information generated 28 Jul 20

121 'The Armenian Arms Industry Is Flourishing', ArmHiTec, <<https://www.armhitec.com/media/news/exhibition-news/the-armenian-arms-industry-is-flourishing/>>, no date but covers 2018 arms fair, last accessed 28 Jul 20;

122 'Azerbaijan lost 3 tanks in 5 days', True News, <<https://truenews.am/en/news/512/>>, 18 Jul 20; 'Armenian attack drones entered service with the army', Sputnik, <https://ru.armeniasputnik.am/politics/20181112/15632835/armyanskie-udarnye-bespilotniki-postupili-na-vooruzhenie-armii-tonoyan.html?mobile_return=yes&_ga=2.241693954.1236931392.1598951624-816844115.1598951624>, 12 Nov 18

123 Siranush Ghazanchyan, 'Artsakh to mass produce combat drones, trials successfully completed', Public Radio of Armenia, <<https://en.armradio.am/2020/05/20/artsakh-to-mass-produce-combat-drones-trials-successfully-completed/>>, 20 May 20

Azerbaijan's Drones

Loitering munitions, although not properly drones, have been included here as they have been a major feature of the 'drone warfare' rhetoric in the South Caucasus region.

Drone (Name and Origin)	Specifications	Notable Deployments
Aerostar (Aeronautics, Israel, and licenced for production by Azad Systems in Azerbaijan)	Class II tactical MALE drone using satellite communications (satcoms) with a wingspan of 7.5m. Endurance of 12hrs and a range of 200km with a max speed of 203km/hr. ¹²⁴	2008 then licensed for joint production in Azerbaijan in 2011. ¹²⁵
Hermes 450 (Elbit, Israel)	Class II tactical drone with a length of 6.1m and wingspan of 10.5m. An endurance of 17hrs, a speed of 130km/h and a range of 300km. ¹²⁶	Introduced in to Air Force in 2011. ¹²⁷
Hermes 900 (Elbit, Israel)	Class III drone with a length of 9m and wingspan of 15m. It has an endurance of 36hrs, a speed of 222km/hr and can reach a height of 9,100m. ¹²⁸	Introduced in 2018. These have been deployed in the recent fighting in July 2020, and it has been alleged that Armenia shot down one, possibly with Russian help. ¹²⁹
Heron TP (IAI, Israel,)	Class III drone with a length of 8.5m and wingspan of 16.6m. It has a 45hr endurance with a 250km range and speed of 207km. ¹³⁰	Introduced to the Air Force in 2015. Iran claimed these drones were used in secret spying missions over its territory. Azerbaijan denied the claim. ¹³¹
Orbiter 3 (Aeronautics, Israel, licensed for production in Azerbaijan)	Class I small tactical drone with a wingspan of 4.4m and max take off weight of 30kg. It has an endurance of 7hrs, datalink range of 150km and max speed of 130km/h. ¹³²	Introduced in 2016. ¹³³ Continued deployment in 2020 to LoC. ¹³⁴
Loitering Munitions		
Harop (IAI, Israel)	Communication range of 200km and endurance of 9hrs, carrying a 16kg warhead. ¹³⁵	Introduced in 2011. Deployed during 2020 conflict. ¹³⁶
Orbiter 1k (Aeronautics, Israel)	Can carry a warhead of 1-2kg. Advertises as for "soft-shell vehicle and human" targets. Has an endurance of 2.5hrs and a mission range of 100km. ¹³⁷	Licensed for joint production in Azerbaijan in 2011 and introduced in 2016. Deployed during 2020 conflict. ¹³⁸
Sky Striker (Elbit, Israel)	Can carry a 5 or 10kg warhead, with a loitering time of 2 or 1hr endurance respectively. ¹³⁹	Introduced in 2018. Deployed during 2020 conflict. ¹⁴⁰

124 'Aerostar Tactical Unmanned Aerial Vehicle', Airforce Technology, <<https://www.airforce-technology.com/projects/aerostaruav/>>, last accessed 10 Sep 20

125 Gettinger, *Drone Databook*, p. 59

126 'Hermes 450 Multi-Role High Performance Tactical UAS', Airforce Technology, <<https://www.airforce-technology.com/projects/hermes-multirole-high-performance-tactical-uas/>>, last accessed 14 Sep 20

127 Gettinger, *op. cit.*, p. 59

128 Hermes 900, Proliferated Drones, CNAS, <<http://drones.cnas.org/drones/>>, last accessed 14 Sep 20

129 'Did Russia Help Armenia Bring Down Azerbaijani Hermes 900 Drone', Defense World, <https://www.defenseworld.net/news/27472/Did_Russia_Help_Armenia_Bring_Down_Azerbaijani_Hermes_900_Drone_#.XyBAWZ5KhE>, 21 Jul 20

130 'Heron/Machatz 1 Unmanned Aerial Vehicle (UAV)', Airforce Technology, <<https://www.airforce-technology.com/projects/heron-uav/>>, last accessed 14 Sep 20

131 'Reports of Israeli drones operating in Azerbaijan spark Iranian condemnation, threats', Long War Journal, <https://www.longwarjournal.org/archives/2012/12/reports_of_israeli_d.php>, 20 Dec 12

132 *Orbiter 3*, Aeronautics brochure, <https://aeronautics-sys.com/wp-content/themes/aeronautics/pdf/orbiter_3.pdf>, last accessed 10 Nov 20

133 Gettinger, *Drone Databook*, p. 59

134 RFE/RL's Armenian Service, Video: 'Armenia Shows Off Alleged Azerbaijani Drones',

135 Harop: Loitering Munition System, IAI, <<https://www.iai.co.il/p/harop>>, last accessed 10 Nov 20

136 Gettinger, *op. cit.*

137 *Orbiter 1K Loitering Munition*, Aeronautics brochure, <https://aeronautics-sys.com/wp-content/themes/aeronautics/pdf/orbiter_1k_v2.pdf>, last accessed 10 Nov 20

138 RFE/RL's Armenian Service, *op. cit.*

139 *Sky-Striker*, Elbit Systems brochure, <<https://elbitsystems.com/landing/wp-content/uploads/2018/07/Sky-Striker.pdf>>, last accessed 10 Nov 20

140 As above

Armenia's Drones

Drone Type (Name and origin)	Specifications	Notable Deployments
Baze (Military Aviation Institute, Armenia)	Class I mini drone weighing about 5.5kg and a max speed of 100km/h. ¹⁴¹	Introduced in 2012. Deployed to LoC. ¹⁴²
Krunk (Armenia)	Class I drone with a wingspan of 4.3m, cruising speed of 120km/h, distance of 580km and endurance of 2hrs. ¹⁴³	Introduced to Air Force in 2011. Deployed to LoC. ¹⁴⁴
Petro-5E (AFM Services, Russia)	Class I drone with a datalink range of 75km, service ceiling of 2,500m and max speed of 125km ¹⁴⁵	Introduced in 2015. Deployed to LoC. ¹⁴⁶

141 'Drone Wars: drones deployed in the Karabakh conflict', PanArmenia, <<https://www.panarmenian.net/eng/details/209995/>>, 11 Apr 16

142 Gettinger, *Drone Databook*, p. 58

143 PanArmenia, *op. cit.*

144 Gettinger, *op. cit.*, p. 58

145 'Main technical and operational characteristics of the Ptero-G1 UAS', Ptero, <<http://xn--e1asbfj.xn--p1ai/en/uasptero/specifications.html>>, last accessed 10 Nov 20

146 Gettinger, *op. cit.*, p. 58

CENTRAL ASIA AND THE ACQUISITION AND APPLICATION OF ARMED MALE DRONES FROM CHINA

The five Central Asian states – Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan – share a number of security issues that are shaping their military procurements. Firstly, they must balance relations between Russia and China and, beyond that, interest from NATO and the US. Secondly, there continue to be concerns over porous borders with Afghanistan and spill over of Islamic extremism into Central Asian states. Thirdly, the post-Soviet political transition in these countries has resulted in all five states remaining in the grip of autocratic ‘strong men’ and their inner circles. Despite some difference in orientation towards Russia and China, there are, therefore, some general trends in approaches to security across the region.

The political landscape in Central Asia

After the dissolution of the Soviet Union and the transition of the Central Asian Soviet Socialist Republics to independent states, any progress towards representative democracy has been stymied by the interests of elites. In the last 30 years, each state has only had two presidents and in all of these, the second president was a member of the first President’s inner circle. There are variations in each country, such as the death or resignation of first presidents, but all power transitions have been swift and opaque with incumbents purging rivals and consolidating their power in sham elections.¹⁴⁷ For example, in Kazakhstan, the largest of the Central Asian states, Nursultan Nazarbayev, the first president of Kazakhstan, is now the Chairman of the Security Council and still exerts more power over government and the direction of the country than the President he appointed in his place after his resignation.¹⁴⁸

Wide ranging powers to curb opposition still linger after violence between different political groups in the early 1990s was dealt with by post-Soviet leaders seeking to secure their positions. Opposition figures can still be jailed today under the pretext of either Muslim extremism or other terrorist associations. The ‘war on terror’ has provided a convenient context to continue using such powers. It has also provided the conditions for the purchase of large drones, particularly in countries where autocratic leaders are susceptible to vanity projects, both civil and military.

These purchases are also a significant step towards stronger relationships with China, a change to the security and defence ties with Russia that have persisted in the post-Soviet era.

147 Francisco Olmos, ‘Passing on the authoritarian torch: power transition in Central Asia’, The Foreign Policy Centre, <<https://fpc.org.uk/passing-on-the-authoritarian-torch-power-transition-in-central-asia/>>, 07 Feb 20

148 *Ibid.*

Central Asia



Relations with Russia and China

Since the dissolution of the Soviet Union, Russia has been a consistent exporter of arms to the Central Asian states. From 2000 - 2016, Kazakhstan imported between 60% and 80% of its military equipment from Russia, Turkmenistan up to 60%, and Uzbekistan up to 40%. Total figures for Tajikistan and Kyrgyzstan are unknown, but given that the Russian military has been a significant presence in Tajikistan - the only Central Asian state where Russia has armed forces - since the break-up of the Soviet Union, it is likely that Tajikistan is heavily dependent on Russian hardware, either by sale or donation.¹⁴⁹

Various inter-governmental organisations (IGOs) for security exist across the region, such as the CSTO and the Shanghai Cooperation Organisation, as well as the Eurasian Economic Union. All these forums are dominated by Russia, however, and depending on the inward looking nature or secrecy of the Central Asian states, there is in effect little collective cooperation. For example, under Islam Karimov, president of Uzbekistan until 2016, Uzbekistan had little to no cooperation with its neighbours.¹⁵⁰ The current President Shavkat Mirziyoyev has attempted to repair diplomatic relations and, in 2018, conducted joint military exercises with Tajikistan.¹⁵¹ There have also been regional attempts at collective military drills in Tajikistan, led by Russia via the Commonwealth of Independent States (CIS), perhaps because it is the only regional organisation that Uzbekistan is party to.¹⁵²

149 Richard Connolly and Cecile Sendstad, *Russia's Role as an Arms Exporter: The Strategic and Economic Importance of Arms Exports for Russia*, Chatham House: London (March, 2017), <<https://www.chathamhouse.org/sites/default/files/publications/research/2017-03-20-russia-arms-exporter-connolly-sendstad.pdf>>; John Kucera, 'CSTO Troops Drill Against 700-Strong Taliban Invasion of Tajikistan', Eurasianet, <<https://eurasianet.org/csto-troops-drill-against-700-strong-taliban-invasion-of-tajikistan>>, 20 May 15; Mouzaffar Olimov, 'The policy of Russia in Central Asia: a perspective from Tajikistan', in (ed) Gennady Chufirin, *Russia and Asia: The emerging Security Agenda* (Oxford University Press: 1999), p. 114-5

150 Sarah Linn and Raffaello Pantucci, *Energy Security Issues in Central Asia and Beyond*, RUSI Conference Report, <https://rusi.org/sites/default/files/201705_rusi_energy_security_issues_in_central_asia_and_beyond_lain_and_pantucci.pdf>, May 17

151 John C. K. Daly, 'Uzbekistan and Tajikistan Conduct First Joint Military Exercises', *Eurasia Daily Monitor*, 15/134, Jamestown Foundation, <<https://jamestown.org/program/uzbekistan-and-tajikistan-conduct-first-joint-military-exercises/>>, 25 Sep 18

152 Edward Lemon, 'CIS Anti-Terrorism Center Holds First Military Exercises in Tajikistan', *Eurasia Daily Monitor*, 14/75, The Jamestown Foundation, <<https://jamestown.org/program/cis-anti-terrorism-center-holds-first-military-exercises-tajikistan/>>, 07 Jun 17



There are also, of course, close economic ties with Russia since Russia relied heavily upon gas and oil exports from parts of Central Asia.¹⁵³ More recently, however, China has taken an interest in the economic development of Central Asia as part of its Belt and Road Initiative (BRI). This BRI strategy has seen China invest heavily in infrastructure projects that increase its connectivity across Asia and further afield, along the 'new silk road'. It has tied China to the economic development of neighbouring states and, in some cases, their security and defence infrastructure.¹⁵⁴ In fact, it is reasonable to say that Central Asia is crucial to this strategy - President Xi announced the BRI at Nazarbayev University in Kazakhstan in 2013. This has taken the form of investment in infrastructure, gas sales, and trade deals, as well as military exports. To cultivate relationships, Beijing has offered substantial loans to Central Asian leaders who have been happy to accept. In 2020, however, a slowdown in investment has occurred as the economic crash resulting from COVID-19 has left China with bad debt.¹⁵⁵



153 Emily Ferris, 'The battle for Hearts and Minds in Central Asia: Russia vs. China', SenECA Blog, <<https://www.seneca-eu.net/blog/the-battle-for-hearts-and-minds-in-central-asia-russia-vs-china/>>, Jun 2019

154 Feng Liu, 'The recalibration of Chinese assertiveness: China's responses to the Indo-Pacific challenge', *International Affairs*, 96/1 (2020), pp. 9-27, here pp. 13-14

155 'The Worsening of U.S.-Chinese Relations and the Echo in Central Asia. An interview with Raffaello Pantucci', *Voices on Central Asia*, <<https://voicesoncentralasia.org/the-worsening-of-us-chinese-relations-and-the-echo-in-central-asia-an-interview-with-raffaello-pantucci/>>, 18 May 20

China's strategy in Central Asia is part of diversifying its energy security and sourcing land-based imports of gas in particular. Eighty per cent of its imports arrive by sea and over half its oil from the Middle East. Both these sources are seen as high risk and diversifying to include land based energy routes would help to mitigate risks.¹⁵⁶ China is also seeking export markets for its new hi-tech military equipment to increase its global share of the arms trade. President Xi has encouraged an outward facing arms industry, for drones in particular.¹⁵⁷

Although there is little scrutiny or accountability for the BRI loans, they do come with some political risk.¹⁵⁸ The Chinese government is concerned about the potential for Uyghur Muslim extremism in its Western province of Xinjiang and the connections between Uyghur populations in Central Asia. BRI partnership means accepting Beijing's 'One China' policy - not supporting the Uyghur cause and showing no support for Tibetan and Taiwanese independence - and siding with China in the UN Security Council.¹⁵⁹ Domestically, the presence of Chinese workers and the obvious preference for contracts to be given to Chinese firms has led to some public opposition, but given the lack of civil society pressure that can be brought to bear on Central Asian governments, this is not a great concern to leaders.¹⁶⁰



Kazakhstan's Wing Loong drones at a military parade in Astana, May 2017 Credit Kalabaha1969 / Wikimedia

There is the potential that involvements in the BRI will come at a cost to relations with Russia and the US, but there are reasons why it may benefit all states concerned. Russia and China share a "core strategy" in Central Asia - namely limiting US influence and deterring Islamic extremism, either spill over from Afghanistan or Uyghur separatism - and China's growing share of military exports seems to be at the expense, not of Russia, but of Turkey, Ukraine and France

156 Li-Chen Sim and Farhod Aminjonov, 'Potholes and Bumps Along the Silk Road Economic Belt in Central Asia', *The Diplomat*, <<https://thediplomat.com/2020/02/potholes-and-bumps-along-the-silk-road-economic-belt-in-central-asia/>>, 01 Feb 20

157 Chris Alden, Lukas Fiala, Eric Krol, Robert Whittle, *Wings Along the BRI: Exporting Chinese UCAVs and Security?*, Strategic Update, LSE Ideas (London School of Economics: London, May 2020), <<https://www.lse.ac.uk/ideas/Assets/Documents/updates/LSE-IDEAS-Wings-Along-the-BRI.pdf>>

158 Bruce Pannier, 'Phantom Foe? Russia To Upgrade Kyrgyzstan's Air-Defence System', *Radio Free Europe/Radio Liberty*, <<https://www.rferl.org/a/kyrgyzstan-air-defense-russian-upgrade-analysis/30442120.html>>, 18 Feb 20

159 Hao Tian, 'China's Conditional Aid and Its Impact on Central Asia', in Marlene Laruelle (ed), *China's Belt and Road Initiative and its Impact in Central Asia* (George Washington University, Washington D.C.: 2018), pp. 21-33, here pp. 26-7

160 Hao Tian, *ibid*, pp. 29-30

whose arms companies had begun to make inroads in to the region.¹⁶¹ For example, although Moscow and Beijing have clashed over Turkmenistan's gas supply, Moscow's interest in maintaining relations with both states has seen a resumption of trade deals.¹⁶² There is also the possibility that stronger relations with China might anger the US, but given the US's minimal relations in Central Asia, it may suit them that China and Russia are both concerned about the overspill of terrorism from Afghanistan and willing to invest in Central Asian security.¹⁶³

Dealing with potential terrorist threats

There are two potential ways in which Islamic terror could affect the Central Asian region that concern Russia and China also. First, China is concerned about possible knock-on effects of the radicalisation of the Uyghur population and wants to see the Central Asian governments' commitment to dealing with any potential extremism, especially in Kazakhstan, Kyrgyzstan and Tajikistan, which border China and where there are sizeable Uyghur populations.¹⁶⁴

Secondly, the potential for spill over from the wars in Afghanistan is a very real security concern for Russia and China, and also for the Central Asian states, three of which – Tajikistan, Uzbekistan and Turkmenistan – share a border with Afghanistan.

However, the transnational networks that have been used to recruit young men from either inside Central Asian countries or marginalised migrant labourers in Russia and Europe, have not yet materialised in the way that Russia and western countries have feared. Although significant in numbers, most recruitment has seen young men go to Afghanistan and Syria to support efforts there.¹⁶⁵ However, with ISIS defeated and fighters returning home, the possibility of terrorist attacks is ever-present in the minds of security forces and there have been a few incidents since 2017. Furthermore, being seen to be tough on terror will stave off US and NATO interest in securing Afghanistan, if both China and Russia are seen to be dealing with potential spill-over.¹⁶⁶ At the same time, the rhetoric around the 'war on terror' has been a useful tool for dealing with opposition.

Most of the Central Asian states have some form of politicised Islamic movement or political party. The group that has been the most active in Afghanistan is the Islamic Movement of Uzbekistan (IMU), who carried out widespread recruitment and in 2015 pledged allegiance to ISIS, but since have been absorbed into the Taliban.¹⁶⁷ This, however, does not dispel the fears of Russia in particular, especially since the 2017 St Petersburg metro bomb was carried out by an ethnic Uzbek with Kyrgyz nationality.¹⁶⁸

Tajikistan also has an Islamist political party, the Islamic National Renaissance

161 Bradley Jardine and Edward Lemon, 'In Russia's Shadow: China's Rising Security Presence in Central Asia', *Kennan Cable* 52/1 (May 2020), Wilson Centre & Kennan Institute, <https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/KI_200519_cable%2052_v1.pdf>

162 Ferris, 'The battle for Hearts and Minds in Central Asia'

163 Linn and Pantucci, *Energy Security Issues in Central Asia*'

164 This is particularly since the appearance of a video in 2017 of Uyghur militants training in the Middle East and making threats against China. Bruce Pannier, 'A new Chinese Interest in Central Asian Security', RFE/RL, <<https://www.rferl.org/a/china-central-asia-security-uyghurs-russia/28400327.html>>, 30 Mar 17

165 Mark Youngman and Cerwyn Moore, 'After St Petersburg: Russia and the Threat from Central Asian Terror Networks', RUSI Commentary, <<https://rusi.org/commentary/after-st-petersburg-russia-and-threat-central-asian-terror-networks>>, 20 Apr 17

166 Lain and Pantucci, *ibid*, p. 1

167 Clayton Thomas, 'Al Qaeda and Islamic State Affiliates in Afghanistan', Congressional Research Service, IF10604, <<https://crsreports.congress.gov/product/pdf/IF/IF10604>>, 31 Jan 20

168 Youngman and Moore, 'After St Petersburg'

Party (INRP) of Tajikistan, which experienced a major government crackdown in 2015. Yet, rather than presenting a terrorist threat, this was an instance of a Central Asian ruler using the 'war on terror' pretext to crackdown on opposition. There had been an attempted coup in the country and a veteran of the Tajik civil war encouraged those fleeing in the aftermath to go to Afghanistan and join up with the Taliban or ISIS, publicly linking the two struggles and allowing the 'war on terror' to be used against Tajik opposition.¹⁶⁹

Then, in 2018, an attack on a group of foreign touring cyclists occurred. The Tajik government immediately blamed the INRP to justify a further crackdown. However, investigation by independent journalists suggested that the perpetrators were connected to ISIS, confirming fears that terrorist spill over is indeed likely, especially as ISIS is defeated and foreign fighters return, and at the same time exposing the government tendency to target opposition.¹⁷⁰

Turkmenistan also has an Islamist movement that supports an independent Uyghur state, the Eastern Turkmenistan Islamic Movement (ETIM). They previously had training bases in Afghanistan but came under US fire, and there is little evidence that they are independently active now.¹⁷¹

The presence of large drones in Kazakhstan, Turkmenistan, and Uzbekistan therefore raises some profound questions. Although, as far as is known, the only appearance of these lethal weapons has been at independence day parades, their presence in countries where there is little accountability between arms of government and virtually none towards the public sets a worrying context in which these drones could be used within states for hunter-killer missions targeting citizens and across the border in Afghanistan, completely unscrutinised.

Drones in Central Asia

Kazakhstan

Drone Type (Name and origins)	Specifications	Notable Deployments
Wing Loong-1 (Chengdu (AVIC), China)	Class III MALE drone 9m in length with a 14m wingspan. It has a speed of 280km/hr, endurance of 20hrs and a combat radius of 200km. Can carry 2 ATS missiles of bombs. ¹⁷²	Acquired 3 air frames in 2016. Operated by Airforce from Taraz Airport. ¹⁷³ The Wing Loong was initially displayed at KADEX in 2016 and has been seen in Independence Day parades in 2017 and 18. In 2018, it appears in a Kazak military video for the celebrations, striking a mountain top. It was also photographed in its hanger in late 2018 but there are no reports of its use. ¹⁷⁴ A Wing Loong was also involved in a military exercise in September 2019 ¹⁷⁵

169 'Tajikistan: Doubts Raised About Outcome of US Bombing in Afghanistan', Eurasianet, <<https://eurasianet.org/tajikistan-doubts-raised-about-outcome-us-bombing-afghanistan>>, 25 Apr 17

170 James Pothecary, 'Tajikistan's Islamist Shadow', *Terrorism Monitor*, 16/17, Jamestown Foundation, <<https://jamestown.org/program/tajikistans-islamist-shadow/>>, 07 Sep 18

171 Clayton Thomas, 'Al Qaeda and Islamic State Affiliates in Afghanistan', Congressional Research Service, IF10604, <<https://crsreports.congress.gov/product/pdf/IF/IF10604>>, 31 Jan 20

172 *Jane's Unmanned Aerial Vehicles and Targets (Jane's Information Group, 2017-18)*, p. 26

173 SIPRI, Arms Transfer Database, Register of Aircraft supplied to Kazakhstan, 2010 - 2019, <http://armstrade.sipri.org/armstrade/page/trade_register.php>, information generated 22 Jun 20; Dan Gettinger, *Drone Databook*, Centre for the Study of the Drone (CSD), Bard College, <<https://dronecenter.bard.edu/files/2019/10/CSD-Drone-Databook-Web.pdf>>, 2019, p. 63

174 'First Wing Loong UAV for Kazakhstan appears at KADEX-2016', Alert 5, <<https://alert5.com/2016/06/04/first-wing-loong-uav-for-kazakhstan-appears-at-kadex-2016/>>, 04 Jun 16; Charles Forrester, Twitter status, <<https://twitter.com/securitysplat/status/1076061887102504961>>, 21 Dec 18; KZ Military, Video, <<https://www.youtube.com/watch?v=pJMIbsEKpRc>>, 07 May 18; Armed Forces of Kazakhstan Wing Loong, Live U Map, <<https://centralasia.liveuamap.com/en/2017/8-may-armed-forces-of-the-republic-of-kazakhstan-wing-loong>>, 08 May 20

175 'Russian troops launched Iskander from Kazakhstani training ground', Fergana News, <<https://fergana.site/news/110949/>>, 19 Sep 19

Recent reports suggest Kazakh authorities are reconsidering their purchase of Wing Loong and have visited Turkey's air base in Batman with a view to procuring Bayraktar TB-2.¹⁷⁶

Turkmenistan

As well as these drones, it was reported in 2013 that Belarus would support Turkmenistan in developing an indigenous drone, and it appears an R&D agreement was reached in 2016.¹⁷⁷ In 2015, a project for a drone to support scientific research was announced in partnership with Japan.¹⁷⁸ These have not yet resulted in any operational systems but Turkmenistan has acquired armed and surveillance drones from elsewhere.

Drone Type (Name and origin)	Specifications	Notable Deployments
CH-3 (CASC, China)	Class II MALE drone, 5m in length with a 7.9m wingspan. It has a speed of 250km/h, endurance of 6-12hrs depending on payload and a 200km combat range. Carries 2 small precision bombs. ¹⁷⁹	Acquired 2 in 2016. ¹⁸⁰
Falco (Selex ES, Italy)	Class II drone 6.2m in length and with a 12.5m wingspan. It has an endurance of 20hrs and a datalink range of 200km, extended with satcoms. ¹⁸¹	Acquired 3 in 2010. ¹⁸²
Orbiter-3 (Aeronautics, Israel)	As above	Acquired in 2017. ¹⁸³
WJ-600 (CASIC, China)	Class II MALE drone with a speed of 720km/h and a range of 2,100km. Can carry precision guided missiles or bombs. ¹⁸⁴	Acquired 2 in 2016. ¹⁸⁵

Uzbekistan

The Uzbekistan authorities clamped down on the use of hobby drones in January 2015, banning their import, sale and use "in order to ensure the safety of aircraft flights and prevent unauthorized use of the country's airspace". In 2016, the government rolled back and toy drones can now be used without a licence. State authorities, such as the Department for Agriculture, use drones to monitor crop yields and "lazy farmers", and the State Committee for Land Geodetic Cadastre of Uzbekistan reportedly entered into a production agreement with Chinese small drone manufacturer B Shark Holdings.¹⁸⁶

176 'Kazakhstan may ditch Chinese UAVs for Turkish Bayraktar TB2s, Russian media claims', Daily Sabah, <<https://www.dailysabah.com/business/defense/kazakhstan-may-ditch-chinese-uavs-for-turkish-bayraktar-tb2s-russian-media-claims>>, 29 Nov 20

177 'Belarus, Turkmenistan To Build Drones', RfE/RL, <<https://www.rferl.org/a/belarus-turkmenistan-drones/25159726.html>>, 06 Nov 13; 'Belarus, Turkmenistan working together to make flying drones', Belarus official website, <https://www.belarus.by/en/business/business-news/belarus-turkmenistan-working-together-to-make-flying-drones_i_0000039364.html>, 11 May 16

178 Huseyn Hasanov, 'Turkmenistan, Japan say joint UAV production perspective', Trend News Agency, <<https://en.trend.az/business/economy/2448105.html>>, 26 Oct 15

179 *Jane's Unmanned Aerial Vehicles and Targets* (Jane's Information Group, 2017-18), pp. 19-21

180 SIPRI, Arms Transfer Database, Register of Aircraft supplied to Turkmenistan, 2010 - 2019, <http://armstrade.sipri.org/armstrade/page/trade_register.php>, information generated 22 Jun 20; Gettinger, *Drone Databook*, p. 76; 'Turkmenistan took delivery Chinese high speed WJ 600 unmanned aerial vehicle', video, Defence Blog YouTube channel, <<https://www.youtube.com/watch?v=klcQVXsMmms>>, 28 Oct 16

181 *FALCO EVO*, Leonardo, <<https://www.leonardocompany.com/en/products/falco-evo>>, last accessed 10 Nov 20

182 Gettinger, *ibid*, p. 76

183 Gettinger, *op. cit.*, p. 76

184 'CASIC WJ-600 Unmanned Combat Air Vehicle (UCAV)', Military Factory, <https://www.militaryfactory.com/aircraft/detail.asp?aircraft_id=1031>, 11 Sept 18

185 'Turkmenistan took delivery Chinese high speed WJ 600 unmanned aerial vehicle', video, Defence Blog YouTube channel, <<https://www.youtube.com/watch?v=klcQVXsMmms>>, 28 Oct 16

186 'China to produce unmanned aerial vehicles in Uzbekistan', Central Asia News, Fergana News, <<https://www.fergananews.com/news/31117>>, 07 Aug 18

In other words, use of drones has been limited in and by Uzbekistan but that looks to be changing on the part of state authorities for monitoring purposes.

Drone Type (Name and Class)	Specifications	Notable Deployments
RQ-11B Raven	As above	Acquired for Special Forces. ¹⁸⁷
Wing Loong-1 (Chengdu (AVIC), China)	As above	Acquired 5 in 2014. ¹⁸⁸

Kyrgyzstan

There are no reports of any military drones in use by Kyrgyzstan. The only recorded use of drones in Kyrgyzstan is by the State Agency for Environmental protection and Forestry of Kyrgyzstan for catching poachers.¹⁸⁹

In 2014, there were the reports that a medium sized drone had flown 7.5km deep in to Uzbekistan from Kyrgyzstan, although this was denied by Kyrgyz authorities and it remains unexplained but not thought to have been military.¹⁹⁰

Tajikistan

Similarly, there are no reports of any military drones in use by Tajikistan. However, the Russian military operates Granat, Leyer and Zavasta drones in Tajikistan.¹⁹¹

In Tajikistan the only known drones are three search and rescue drone donated by the UN, and eight small drones used to map environmental changes for disaster planning.¹⁹²

187 SIPRI, Arms Transfer Database, Register of Aircraft supplied to Uzbekistan, 2010 - 2019, <http://armstrade.sipri.org/armstrade/page/trade_register.php>, information generated 22 Jun 20; Gettinger, *Drone Databook*, p. 80

188 Gettinger, *ibid*, p. 80

189 'Drones to poachers and insects in Kyrgyzstan', 24KG, <https://24.kg/english/100736_Kyrgyzstan_to_counter_poachers_using_drone_aircrafts>, 06 Nov 18

190 Joshua Kucera, 'Uzbekistan Claims Drone Incursion From Kyrgyzstan', Eurasianet, <<https://eurasianet.org/uzbekistan-claims-drone-incursion-from-kyrgyzstan>>, 22 Dec 14

191 Joshua Kucera, 'Russia to Deploy Drones in Tajikistan', Eurasianet, <<https://eurasianet.org/russia-to-deploy-drones-in-tajikistan>>, 01 Mar 14

192 'Tajik rescuers receive drones and tractors from the UN', Fergana News, <<https://www.fergananews.com/news/30102>>, 23 May 18

6 CONCLUSION

While the use of drones in Eurasia is not yet having the same devastating impact and global repercussions as other sites of drone warfare, such as Libya and Yemen or Syria, the proliferation of drones has brought many of the same issues to the fore. Problems of the increased use of force through greater risk-taking and the reliance on 'precision' strikes, of the use of propaganda, hype, and rumour around these relatively new systems to fight info-wars, of problematic border use that adversely affects human rights, and the unaccountable acquisition of armed drones, are all present in Eurasia. This threat to peace and security should be addressed through multilateral controls on the use and proliferation of drones across the globe.

The fighting between Azerbaijan and Armenia over the Nagorno-Karabakh has certainly become internationalised and the issue of drones is at the centre of that. Turkish Bayraktar TB-2 drones have given the Azeri forces capabilities well beyond those they possessed.¹⁹³ The TB-2s changed the dynamics of the conflict, firstly because they helped the Azeri forces conduct riskier surveillance missions well behind the front line, and secondly, as a result, Azerbaijan has been able to inflict more damage on opposing forces' supply lines. Neither of these tools were previously available to Azerbaijan and the new capabilities, say analysts, may have prolonged the violence in 2020 compared to previous periods of fighting.¹⁹⁴ The 'advantage' of drones is that these higher risk missions do not endanger the lives of air crew and the aircraft are therefore deemed more expendable than manned aircraft. This, in turn, means lethal force can be used in more situations, often closer to populated areas, further endangering the lives of civilians.

The very public involvement of Turkey in the conflict over Nagorno-Karabakh, whose weapons systems it is that significantly enhanced Azerbaijan's capabilities, risked expanding the conflict across the region. Turkey has provided other military assistance but the publicity and hype around the use of armed TB-2s significantly increased the visibility of Turkey's support. As a relatively new weapons system a certain amount of destabilisation can be caused merely by the information wars surrounding the use of drones.

In the Ukraine in 2014, drones similarly gave separatists in the Donbas an edge over Ukrainian forces. Reconnaissance drones were used to gather intelligence on Ukrainian troop movements, a capability that Ukraine could not match at

193 Watling and Kaushal, 'The democratisation of Precision Strike in the Nagorno-Karabakh Conflict'

194 *ibid.*

the time.¹⁹⁵ It then became a matter of public, patriotic pride for the Ukraine to develop a military drone, resulting in the crowd-funded 'People's Drone.'¹⁹⁶ The race to match or overtake the technological advantages of adversaries creates an ongoing militarisation, particularly when it becomes a matter of national pride. At the same time, the focus on new military advantages obscure the possibility of real solutions for peace and security.

Although the conflicts between Georgia and Russia over South Ossetia and Abkhazia cannot be classed as 'drone wars', drones have still played a role in increasing tensions. The shooting down of Georgia's Hermes-450 by a Russian fighter jet in 2008 was a contributing factor in the rise in tensions that led to war later that year. Moreover, the ongoing border skirmishes between regular armies and activist groups often involve drones. This low-level violence coupled with the creeping "borderisation" by Russia is contributing to worsening human rights.¹⁹⁷

As well as the pressing problems of drone use in Eurasia, there is also the possibility that several more states will begin operating armed drones in the near future. Russia, involved in all of these conflicts, is said to be readying its Orion armed drone for use.¹⁹⁸ Similarly Ukraine is testing its Gorlytsa armed drone, and has also purchased the ubiquitous Bayraktar TB-2. Further deals with Turkey include working together on an armed HALE drone.¹⁹⁹

Where large armed drones are already present in Central Asia, it is hard to know to what extent they are operational or whether they remain simply status symbols for the strongmen leaders of the three states that have them. Nevertheless, since drone warfare is notoriously secretive, unaccountable and has the propensity to fall outside of international law wherever they are in use, the large armed drones in Central Asia represent a significant problem for proliferation. Targeted killing outside of declared conflict zones continues under the rubric of the 'war on terror' and could easily begin in Central Asia or neighbouring Afghanistan. The danger here is that it could unfairly target political opponents or support China's clamp down on its Uyghur minority. China reportedly already uses its Wing Loong drones to at least monitor the Uyghur in the western Xinjiang province that borders Kazakhstan, Kyrgyzstan and Tajikistan.²⁰⁰

Together these issues highlight the urgent need for a global agreement on the use and proliferation of military drones. It is not enough that a process led by the US - the most prolific user of armed drones, with a military industrial complex that wishes to see export controls loosened - is the most likely international agreement. We are already seeing other countries follow suit down similarly unaccountable paths, such as the UK and Turkey. In Eurasia, although new technology may provide strategic battlefield advantages, new weapons systems will only obscure the need for political and humanitarian solutions to the unresolved and 'frozen' conflicts, prolonging and perhaps increasing violence, hindering rather than helping to find real peace and security.

195 Felgenhauer, 'Russia Seizes Opportunity to Expand Drone Usage'

196 Wendle, 'The Fighting Drone of Ukraine'

197 *Behind Barbed Wire*; Lonsadze, 'Clash of drones'

198 Andras C, 'Russian Military receives First Shipment of Orion UAVs'

199 Bekdil, 'Turkey, Ukraine seek to jointly produce "sensitive" defense technology'

200 Gettinger, *Drone Databook*, p. 14



Shining a spotlight
on military drones