A LEGAL PERSPECTIVE ON HOW UNMANNED VEHICLES WILL INFLUENCE FUTURE CONFLICTS

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Abstract

Unmanned vehicles or drones (how they are cultured in general) have become a staple in the modern era conflicts seeing as how they offer mostly the same results as other vehicles with less drawbacks.

The paper will focus on identifying current issues regarding unmanned vehicles used in conflicts, identify the international law documents that are applicable to said vehicles and focus on how states should reconsider a reform in how states handles future conflicts based on unmanned devices.

Conflicts such as the Azerbaijani-Armenian war or the Ukrainian crisis have shown to revolve around the usage of drones as low threshold devices that bypass the rules regarding usage of force and could trigger dangerous responses from states.

Furthermore, the analysis will also take into aspects on how international courts have been tackling modern conflicts and methods, while also delving in the aspects of human rights breaches.

Identifying how the legal regimes applicable for unmanned vehicles and how future legal instruments can be developed and enforced will also be another focus of the paper, as such, conclusions will be based on how legal aspects will evolve and ensure a checks and balances approach in this field, seeing as how influential artificial intelligence will be in the unmanned segment.

Keywords: *international law, drones, unmanned vehicles, armed conflicts, international human rights law.*

1. Introduction

Unmanned aerial vehicles have been used in armed conflicts with different results ranging from flying targets for pilot training to intelligence gathering missions[1], their latest role being that of a mobile weapons platform capable of participating in armed conflicts or anti-terror operations, abroad or at a national level[2].

Unmanned vehicles have been in use even before World War 1, as either guided bombs or target practice devices was seen as a very useful tactic in order to reduce own casualties. Drones have become a staple in military usage starting from the 1990s, when unmanned vehicles had been sent into operations such as Desert Storm[3] and the recon missions done in the Persian Gulf.

None of the drones in the 1990s had weapons attached, but they were appraised for the capability of gathering intelligence and could be launched from almost any type of surface, even from hand. Later on, these vehicles had been used in Bosnia, Kosovo and Yugoslavia, being adopted by NATO.

The global war against terrorism brought into attention a new type of unmanned vehicle, the Reaper with its 2 variants[4], an all-purpose intelligence gathering vehicle and an armed model capable of launching precise strikes.

The most drone strikes have been conducted by the United States of America, the earliest authorization for a strike was given by the Clinton Administration who used the drones from bases in Europe and Pakistan against Taliban forces, all under the Central Intelligence Agency's guidance[5]. Later, the drone fleet was split between Pentagon and CIA.

Other states have adopted unmanned systems and integrated them into their own, but most notable is Turkey as a rising developer of unmanned lethal systems, both radio controlled and autonomous, but without abiding by the competitions rules regarding the respect of human rights law or arms trade[6], as Turkish drones have been seen in Ethiopia targeting civilian objectives and sparking a growing concern for Russia in its Ukrainian crisis, as the Ukrainian army has been buying Baykar Bayraktar TB2 drones.

This is most notable as Turkey is part of the Wassenaar Arrangement[7] meaning the state must

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[1] David Daly, *A Not-So-Short History Of Unmanned Aerial Vehicles (Uav)*, Consortiq, 2021.

[2] Procon, *History Of Us Drone Strikes Abroad*, Britannica Procon, 29.10.2020.

[3] John David Blom, *Unmanned Aerial Systems: A Historical Perspective*, Occasional Paper 37, Combat Studies Institute Press Us Army Combined Arms Center Fort Leavenworth, Kansas, 2010, pp. 88-89.

[4] *Idem*, pp. 107-108.

[5] Ryan Swan, *Drone Strikes: An Overview, Articulation And Assessment Of The United States' Position Under International Law*, Center For Global Security Research Lawrence Livermore National Laboratory, 2019.

[6] Alper Coşkun, *Strengthening Turkish Policy On Drone Exports*, Carnegie Endowment For International Peace, 18.01.2022.

[7] Wassenaar Arrangement On Export Controls For Conventional Arms And Dual-Use Goods And Technologies, 1996.

contribute to regional and international security and stability by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilizing accumulations. As such, through its national policies, Turkey must ensure that transfers of these items do not contribute to the development or enhancement of military capabilities which undermine these goals, and are not diverted to support such capabilities.

The aforementioned aspect is also available for the other 41 states party to the Arrangement.

2. The growing market and usage of combat ready unmanned devices

In a study by the Center for a New American Security, entitled „*A world of proliferated drones: a technology primer"*[8] it was outlined that over 90 nations and non-state groups are known to operate drones, including at least 30 countries that either operate or are developing armed drones and as such even small sized drones could overwhelm defenses and launch explosive or biological attacks on military and civilian objectives.

Off-the-shelf devices could be retrofitted with weapons or be used as surveillance gear even by terrorist or other non-state actors and are easily accessible on the internet.

In an interview, Marine Gen. Kenneth McKenzie Jr., head of U.S. Central Command stated that off-the-shelf devices are a bigger threat in the Middle East since improvised explosive devices, ISIS being one of the first terror groups to use explosive drones to target coalition forces, while states such as Iran, have been seen to use drones to target other important U.S. assets[9].

Other incidents that include off-the-shelf drones have happened in Venezuela, when Nicolas Maduro was targeted by an improvised explosive drone[10], while the U.S. started developing localized anti-drone systems to protect large gatherings against such devices, because weaponized small drones could become the norm in future terrorist operations or conflicts.

In a paper published by the Center for Strategic & International Studies[11], it was highlighted that during the Karabakh war in 2020 both parties in the conflict used unmanned aerial vehicles, but Azerbaijan used more advanced Turkish and Israeli drones, capable of autonomous flight and loitering attacks, with drones being the focus point of how the Azerbaijani forces won the conflict. The study concludes that drones by themselves did not win the conflict, however, using them in a synchronized operation with artillery and missiles it proved a winning combination that allowed for a fast and relatively cheap conflict.

The most important aspects regarding this conflict have been identified by professor Julian Cooper in his research for the International Institute for Strategic Studies[12], where he outlines that small factor drones and loitering autonomous platforms allowed to overcome the aging Armenian forces.

It's important to note that the same unmanned vehicles are now being used by the Ukrainian army against insurgents in eastern Ukraine with the same effect as seen in the aforementioned conflict[13]. A similar situation has been brought up in the case of Romania who is housing a MQ-9 Reaper squadron and could participate in future conflicts[14], despite said drones have never been confirmed to be armed.

As more and more states develop and acquire armed capable unmanned vehicles, so must security be adapted to face such threats and as such as the U.S.A., Saudi Arabia, Iraq and other European states have started to advance in localized army and police units capable of deterring small explosive drones from reaching their urban or strategic targets[15] as more non-state actors acquire advanced unmanned systems.

The ongoing threat has moved from large intelligence and armed combat drones to the smaller and economically accessible unmanned vehicles, turning civilian technology into a powerful and dangerous weapon.

In a research paper, titled *"Off the Shelf: The Violent Nonstate Actor Drone Threat"*[16], it was showcased how Libyan non-state actors went to Canada to purchase small hobbyist drones and brought them back in Libya without any issue, later using them in Misrata and Tripoli as spying devices on governmental officials and army units, while Columbia is confronted, both on a national and international level, by narco-drones. The PKK has been another group to use improvised off-the-shelf drones against the Turkish

[8] Kelley Sayler, *A World Of Proliferated Drones: a Technology Primer*, Center For a New American Security, June 2015, p. 5.
[9] Gina Harkins, *Tiny Drones Are The Biggest Threat In The Middle East Since Ieds*, Top General Says, Military.Com, 8.02.2021.
[10] Ben Watson, *Against The Drones*, Defense One, 18.03.2018.
[11] Shaan Shaikh, Wes Rumbaugh,*The Air And Missile War In Nagorno-Karabakh: Lessons For The Future Of Strike And Defense*, Csis, 8.12.2020.
[12] Julian Cooper, *The Nagorno-Karabakh War: a Spur To Moscow's Uav Efforts?*, Iiss, March 2021.
[13] Afp, *Ukraine Destroys Pro-Russian Artillery In Its First Use Of Turkish Drones*, Moscowtimes, 27.10.2021.
[14] Eduard Pascu, *Numărul Dronelor Mq-9 Reaper Dislocate De Sua În România. Posibile Misiuni, Inclusiv În Ucraina*, Defense Romania, 01.05.2021.
[15] James Marson, Stephen Kalin, *The Military's New Challenge: Defeating Cheap Hobbyist Drones*, Wallstreetjournal, 05.01.2022.
[16] Kerry Chavez, Ori Swed, *Off The Shelf: The Violent Nonstate Actor Drone Threat*, Air & Space Power Journal - Feature, Fall 2020.

forces, both in precise targeting and swarm attacks, causing casualties in any type of operation.

3. How legal regimes handle the growing threat of unmanned vehicles

From an international law standpoint, unmanned systems have been mostly discussed under their active role in targeted killings, but this discussion has shifted towards the growing usage of said devices and proliferation.

In the context of armed conflict, prohibitions of military conduct comprise the rules of international humanitarian law and especially of specific interdiction or restrictions on the use of certain weapons by multilateral treaties[17]. As long as no treaty exists that bars States from using combat drones, the framework for the recourse to drones is the specifically applicable *ius in bello.*

This means that states are not free to use any type of weapon, even if said weapon is not the target or focus of a specific treaty, meaning that the Advisory opinion regarding nuclear weapons handed down by the International Court of Justice[18] is applicable to any type of weapon and forces states to only employ those types of means and methods of warfare that cannot cause superfluous injury or unnecessary suffering and abides of the principle of distinction between combatants.

According to the Manual on International Law Applicable to Air and Missile Warfare[19] a combat unmanned vehicles is an means an unmanned military aircraft of any size which carries and launches a weapon, or which can use on-board technology to direct such a weapon to a target.

The threat of these small off-the-shelf drones is based mostly on their ability of bypassing the U.N. Charter and its limits established by art. 2 para. 4, while also limiting states from a reply using art. 51 of the Charter as a basis.

In a 2020 report, the Special U.N. Rapporteur Agnes Callamard[20] acknowledged at least 102 countries had acquired an active military drone inventory, and around 40 possess, or are in the process of procuring, armed drones. 35 States are believed to possess the largest and deadliest class. The Rapporteur described this as being *a second drone age* as conflicts tend to use cheap and low-risk drones because of several factors such as: efficiency where drones are relatively cheap to produce, easy to deploy and offer economy of effort, meaning the option of targeted killing is a less financially onerous choice compared to the alternatives, such as "locate, detain/arrest"; adaptability since these vehicles are truly "all terrain", employable in a variety of settings for a range of purposes by various actors, and they are amenable to ongoing technological innovations.

One of the most interesting points submitted by the Rapporteur is that they afford the user deniability, because the drones are operable at long range and clandestinely, the drone is both easy to deny and its operation more difficult to attribute. Drones further are not "indigenous" to their operators, bearing often similar look and design, range and lethal capability. The very same make and model may be deployed by different State and non-State actors operating in the same geographical area.

Other aspects described in the 2020 report highlight effectiveness, acceptability and political gain regarding drones.

The issues described by the Special Rapporteur are those regarding the lack of transparency and accountability as states who employ such vehicles rarely conduct post-attack investigations or release public information regarding strike locations and post-strike data.

The right to protection from arbitrary deprivation of life is a rule of customary international law as well as a general principle of international law and a rule of *jus cogens,* yet strikes such as that conducted against the Iranian General Qasem Soleimani in 2020 was established by the U.N. as a disregard of this right and also a violation of art. 2 para. 4 of the Charter. Future drone strikes handled with small or off-the-shelf unmanned vehicles could lead to a weakening of the threshold applicable to the limits established by the U.N. Charter, as these types of vehicles are low-cost and low-risk.

These core concepts lose their meaning as the U.N. Charter and the Security Council fail in regards to the ever expanding roster of drones and operation related implications, while also failing to be notified or to react to self-defense situations that do not fall under the general definition of art. 51 of the Charter but under the imminence theory[21].

Unless a Security Council Resolution is passed to allow the usage of armed force, the usage of armed drones should be halted, yet low-cost drones proliferate

[17] Sebastian Wuschka, *The Use Of Combat Drones In Current Conflicts – A Legal Issue Or a Political Problem?*, Goettingen Journal Of International Law 3 (2011) 3.

[18] Legality Of The Threat Or Use Of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996, Para 78.

[19] The President And Fellows Of Harvard College, Manual On International Law Applicable To Air And Missile Warfare, Humanitarian Policy And Conflict Research At Harvard University, 2009.

[20] A/Hrc/44/38 - Extrajudicial, Summary Or Arbitrary Executions Report Of The Special Rapporteur On Extrajudicial, Summary Or Arbitrary Executions, Human Rights Council, 2020.

[21] Rosa Brooks, *Drones And The International Rule Of Law*, Georgetown University Law Center, 28 J. Ethics & Int'l Aff. 83-104 (2014).

the battlefields and disregard the Advisory Opinion of the International Court of Justice regarding The Wall[22], where the right to self-defense can only be exercised in the event of an attack by another state.

It's important to note that these small unmanned devices have become a growing problem and have been developed into swarms, similar to how insects, flocks or birds or shoals of fish act[23].

As drones form swarms and become the norm, the idea behind explosive remnants of war could also be raised as an issue with unmanned vehicles that fall out of the swarm. These types of organized attacks are the pinnacle of the small and off-the-shelf type of devices that anybody can access.

Some swarm incidents have been identified in which unmanned devices had a quantitative and qualitative dimension when they were used against Russian forces in Syria and United Arab Emirates forces close to Yemen[24].

These types of attacks could create a new breed of remnant ammunition, in the form of intelligent self-guided improvised explosives and could be mistaken as toys due to their off-the-shelf nature. A possible way to mitigate such a growing threat would be that of adding unmanned vehicles to the definitions found in Protocol V of the Convention on Certain Weapons and Convention on Clusters Munitions.

Art. 36 showcases that swarms would be highly autonomous, flying themselves and coordinating their actions to avoid collisions and maintain swarm cohesion and one human operator could control an entire swarm as a single entity[25].

The means and methods of warfare found in the Karabakh conflict and the growing number of drone swarms that the Israeli Defense Force has deployed over Gaza glimpses the future of warfare and police actions, which means that international law has to be updated with these potential disruptive technologies[26].

The heart of the debate surrounding lethal autonomous weapon systems is largely about the legal and ethical considerations associated with the use of systems that may be outside of human control. Legal discussions focus primarily on the ability of automated systems to implement the key principles of international humanitarian law: distinction, necessity, and proportionality[27], meaning that these systems must be able to distinguish between combatants and civilians, but also, that the algorithm should be designed in such a way that it can identify only combatants.

However, unmanned devices like those mentioned before, have yet to prove that they are capable of successfully identifying combatants, as it was found by the Panel of experts on Libya pursuant to Resolution 1973 (2011)[28].

The Panel of experts identified that forces in the conflict (both governmental and rebel) in Libya had used Turkish, Israeli and Chinese unmanned vehicles and special ammunition that had lethal payload and autonomous or semi-autonomous targeting systems, but the results of these devices had caused unnecessary damage to civilian infrastructure and buildings or acted as loitering or remnant ammunition and killed persons without discrimination.

The lack of a kill-switch for these types of devices contributed to deadly results and yet the forces at play did not limit their usage, because it offered the best results with the least resource cost.

As Major Andrew Williams Sanders of the U.S. Army[29], highlights in his monograph, the costs of putting too much faith in technology is a double-edge sword where technology eventually spreads and becomes available to adversaries with more primitive capabilities but are less vulnerable to dependence, and argues that robotics and unmanned vehicles are eventually mitigated because of increased availability to all actors. And yet, the U.S. Army does not foresee a future in which the human is replaced by unmanned intelligent devices.

An important observation was brought up by Amnesty International[30] when they launched they *#EscapeTheScan* campaign, a program of international awareness regarding the need of a new international legal instrument regarding the control of international transfers and production of lethal autonomous devices and weapons.

The campaign highlights that people will be targeted by devices without a proper human control, an opinion we do not fully agree with, because in the negations that have been held in the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System, part

[22] Andreas Schüller, *Unlimited Use Of Armed Drones In The Fight Against Terrorism In Syria? Germany Must Oppose The Erosion Of International Law*, European Center For Constitutional And Human Rights, 2017.
[23] Art. 36, Swarms, Discussion Paper For The Convention On Certain Conventional Weapons (Ccw) Geneva, March 2019.
[24] Maziar Homayounnejad, *Drone Swarming And The Explosive Remnants Of War*, Opiniojuris, 19.03.2018.
[25] See Note 23.
[26] Jason Crabtree, *Gaza And Nagorno-Karabakh Were Glimpses Of The Future Of Conflict*, Foreign Policy, 21.06.2021.
[27] Irving Lachow, *The Upside And Downside Of Swarming Drones*, *Bulletin Of Atomic Scientists*, vol. 73, Issue 2, 2017.
[28] U.N. Security Council, Letter Dated 8 March 2021 From The Panel Of Experts On Libya Established Pursuant To Resolution 1973 (2011) Addressed To The President Of The Security Council, S/2021/229.
[29] Andrew William Sanders, *Drone Swarms*, School Of Advanced Military Studies United States Army Command And General Staff College Fort Leavenworth, Kansas, 2017, pp. 31-32.
[30] Verity Coyle, Ousman Noor, *Global: A Critical Opportunity To Ban Killer Robots – While We Still Can*, Amnesty International, 2.11.2021.

of the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons, have shown that most of the states participating at these meetings have already stated that human control is necessary for this technology to be legal[31].

As most of the states that have developed or are developing unmanned lethal devices have stated, human control will be retained no matter how advanced the technology will become. This was already seen in the 2019 declaration regarding artificial intelligence that was promoted by the states that form the G7[32].

Similar, the G7 states had another important declaration, in the form of Joint Statement from Founding Members of the Global Partnership on Artificial Intelligence[33], in which artificial intelligence equipped devices will be centered on human control and responsibility.

An important remark in interstate international responsibility regarding the usage of drones in conflicts was brought up in the request of the legal counselor representing victims of cross border aerial bombardment in the situation in the Islamic Republic of Afghanistan, that is analyzed by the International Criminal Court[34], where it was solicited that the investigation should be extended to drone operations, but later on, the Prosecutor of the International Criminal Court stated that investigations will only focus on Taliban and ISIS-K forces, not the U.S.[35]

In a study conducted by the United Nations Institute for Disarmament Research[36] it was revealed that drones can be used in swarm tactics for intelligence, surveillance and reconnaissance operations, perimeter surveillance and protection, distributed attacks, saturating enemy air defence,force protection, deception, dull, dirty and dangerous tasks or even swarms as counter-swarms.

The study considers that the 11 Principles on Lethal Autonomous Weapons Systems, that were adopted during the 2019 **Alliance for Multilateralism event** held at the Convention on Certain Conventional Weapons[37], represent a stepping stone as the principles confirm that international humanitarian law continues to apply fully to all weapons systems and, therefore, also applies to the development and use of swarms and lethal autonomous weapons. However, the fact that states have reached formal consensus on these principles does not mean that they are well developed and commonly understood.

As such, unmanned devices, that can operate in any way (controlled, autonomous, semi-autonomous, swarm or others) must be handled in such a way that they remain in human control, while also respect international law (be it humanitarian law or human rights law).

As the researcher Maaike Verbruggen explains: *"Even when human operators might make the executive decision to strike, there are risks: they may not be meaningfully engaged in the operation, they may lose situational awareness, or they may not critically assess whether they should take a machine-recommended action"*[38]. The researcher outlines that human control can be achieved with research and development in which international humanitarian law is integrated in the planed design.

This could be a solution, albeit a temporary one, as we have shown that off-the-shelf drones can be amassed as swarms and be used against targets, as the Jammu incident showed[39], where terrorists used improvised explosive drones to attack the Indian Air Force. The attack brought up how international law regarding terrorism has not evolved to tackle dual-use technology and acts as a loop-hole for accessibility for these types of devices.

4. Conclusions

The paper has shown that both states and non-state entities have used unmanned vehicles to conduct armed operations, most notably being the usage of said devices as swarms that can act as loitering ammunition, explosive remnants or even improvised explosive devices that can be flown to the target in secrecy.

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[31] Group Of Governmental Experts On Emerging Technologies In The Area Of Lethal Autonomous Weapons System, Chairperson's Summary, Ccw/Gge.1/2020/Wp.7, 19.04.2021.

[32] Summit Of The G7 Science Academies, Artificial Intelligence And Society, March 25-26 2019.

[33] Summit Of The G7 Science And Technology Ministerial Meeting, Joint Statement From Founding Members Of The Global Partnership On Artificial Intelligence, 15.06.2020.

[34] Submissions On Behalf Of Victims Of Cross Border Aerial Bombardment, Situation In The Islamic Republic Of Afghanistan, The Appeals Chamber, Case Icc-02/17-116 15-11-2019 1/15 Sl Pt Oa Oa2 Oa3 Oa4.

[35] Anthony Deutsch, Stephanie van der Berg, *War crimes prosecutor would not focus on U.S. forces in new Afghanistan probe*, Reuters, 27.09.2021.

[36] Merel Ekelhof, Giacomo Persi Paoli, *Swarm Robotics Technical And Operational Overview Of The Next Generation Of Autonomous Systems*, UNIDIR, 2020, pp. 50-51.

[37] 11 Principles on Lethal Autonomous Weapons Systems (LAWS) can be found on the French Ministry of Foreign Affairs website (https://www.diplomatie.gouv.fr/en/french-foreign-policy/united-nations/multilateralism-a-principle-of-action-for-france/alliance-for-multilateralism/article/11-principles-on-lethal-autonomous-weapons-systems-laws).

[38] Maaike Verbruggen, *The Question Of Swarms Control: Challenges To Ensuring Human Control Over Military Swarms*, EU Non-Proliferation and Disarmament Consortium, Non-Proliferation and Disarmament Papers, no. 65/2019.

[39] Ashutosh Anand, *Jammu Drone Attack: Analyzing Current Legal Frameworks that Regulate Drone Warfare by Non-State Actors*, Jurist, 13.07.2021.

To prevent proliferation of said devices without affecting the civilian benefits of these vehicles, we consider that the European Union and High Contracting Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons are on their way of adopting multilateral agreements to contain the phenomenon, but it will require time.

The United States of American is one of the first states to legiferate this situation with its national directive DODD 3000.09[40], that requires that all systems, including lethal autonomous weapons, be designed to allow commanders and operators to exercise appropriate levels of human judgment over the use of force.

The European Union lacks a proper response to these situations, even thou the European Parliament has adopted a number of resolutions, most notable being European Parliament resolution of 12 September 2018 on autonomous weapon systems (2018/2752(RSP))[41] in which it outlines the need for a common position on lethal autonomous weapon systems that ensures meaningful human control over the critical functions of weapon systems, including during deployment, and to speak in relevant forums with one voice and act accordingly. Also, the resolution stresses, in this light, the fundamental importance of preventing the development and production of any lethal autonomous weapon system lacking human control in critical functions such as target selection and engagement.

One of the legal instruments required to contain said devices came in the form a proposal for a Regulation of the European Parliament and of the Council laying down harmonized rules on Artificial Intelligence[42], but this had yet to be adopted (at the moment of the writhing of this paper), and as such we can only speculate on how the final edition will be adopted.

What we can only hope that it will uphold is the requirement of human rights impact assessments throughout the entire life cycle of high-risk systems, meaning that future artificial intelligence based devices and vehicles should be designed with human rights and humanitarian law into them, while also ensuring a checks and balances approach for systems that may not perform so well in respecting these rights.

Transparency and human responsibility must remain the focus point, yet closing these loopholes would be legally straightforward, but despite the support of a significant number of states, it has proved politically difficult, this being the key issue on why the expert group at the Convention on Conventional Weapons has yet to adopt a new legal instrument that could help regulate how easy it is for interested parties to obtain devices that can be turned into lethal weapons, swarms or improvised explosives.

However, as the Women's International League for Peace and Freedom organization outlines the issues[43], only part of the states supported the development of a legally binding instrument with prohibitions and restrictions on, while some support an instrument that prevents machines from killing autonomously, yet the European Union, Israel and Russia would like to focus on consensus recommendations for a normative and operational framework.

We consider that a full ban on lethal unmanned vehicles could also be imposed on civilian devices, as they are dual-use technologies, and as such we don't consider it a viable solution as limiting other potential commercial and civilian benefits could undo a proper mobility and transport revolution.

As with other types of weapons and platforms, adopting internationally acknowledged recommendations can ensure that even the most stubborn states can comply and allow the formation of standardized legal regimes, similar to how International Civil Aviation Organization has handled civilian unmanned aerial vehicles.

ICAO has adopted regulations and advisory circulars[44] that ensure a standardized approach to air traffic management and airworthiness certifications, while also respecting state sovereignty in the development of proprietary devices. Yet, a legal document regarding armed devices has yet to surface.

The only legal documents, that can be applicable to the development and commerce of unmanned armed devices are represented by the Wassenaar Agreement, that is unfortunately not legally binding, and the Arms Trade Treaty, that does not explicitly reference drones within its scope, it only implicates that is applicable to drones, because most unmanned vehicles are paired with combat aircraft[45] and state practice regarding the

[40] Department of Defense Directive no. 3000.09 on the subject of Autonomy in Weapon Systems, adopted 21.11.2012, with its addendum.

[41] European Parliament resolution of 12 September 2018 on autonomous weapon systems (2018/2752(RSP)), 2019/C 433/10, published in the Official Journal of the European Union, C 433/86/23.12.2019.

[42] Proposal for a Regulation Of The European Parliament And Of The Council Laying Down Harmonised Rules On Artificial Intelligence (Artificial Intelligence Act) And Amending Certain Union Legislative Acts, {SEC(2021) 167 final} - {SWD(2021) 84 final} - {SWD(2021) 85 final}, 2021/0106(COD).

[43] Ray Acheson, Civil society perspectives on the Convention on Certain Conventional Weapons (CCW) Preparatory Committee for the Sixth Review Conference, Report,vol. 9, no. 5, Reaching Critical Will, 10.09.2021.

[44] ICAO Model UAS Regulations can be accessed on their website https://www.icao.int/safety/UA/Pages/ICAO-Model-UAS-Regulations.aspx.

[45] Rachel Stohl, Shannon Dick, *The Arms Trade Treaty and Drones*, STIMSON, 2018.

weapons trade reports filed to the U.N. Register of Conventional Arms have included drones under this category.

However, we consider this is only a placeholder procedure, as improvised explosive devices and swarm able unmanned vehicles can also be land or water based, seeing as how off-the-shelf drones are capable of traversing any type of terrain or handle any type of biome[46].

It's important to note that these devices are not unlawful weapons or ordnance in the technical sense, yet the lack of transparency in armed drone policies and the use of armed drones for military targeting and killing, resulting in civilian deaths because of drones strikes are key issues that have to be addressed.

We consider that the work of the European Union regarding artificial intelligence and the reform of civil liability, corroborated with the findings of the Expert Group in the C.C.W. could lead to future documents, that may or may not be legally binding, but, that they will introduce an international standard regarding transparency, human centered operations and international state responsibility.

Conflicts such as the ones in Libya, Nagorno-Karabakh and the Donbas region in Ukraine highlight how fragile international law is when its dealing with dual-use unmanned vehicles handled by state or non-state actors.

As news regarding the proliferation of armed drones, such as the Bayraktar TB2 being sold by Turkey, and (in the future) manufactured in Ukraine[47], or that of the Tactical Heron being sold (and built) to Romania[48], so must the international community rush to facilitate legal regimes and standards in regards to fair and safe usage in different situations, and also to ensure that these devices will respect art. 36 of the Additional Protocol I to the 1949 Geneva Conventions[49] regarding new weapons.

Further expanding on the 11 guiding principles that were adopted in 2019 to include off-the-shelf drones or swarm capable drones will allow the industry to create a standardized approach to what the end consumer can find in hobby or generalist stores. The European Union with its 2019/947 and 2019/945[50] regulations have adopted legal means and methods to counter inferior products that could threaten civilian infrastructure and military objectives, while the U.S.A. had went ahead and introduced anti-drone legislation to ensure that law enforcement agencies to confiscate or destroy drone threats[51].

The legal instruments mentioned before can be used to thwart swarms or improvised explosive drones by law enforcement agencies or even consumer protection agencies.

To conclude, we consider that a proper legal mechanism that generate a standardized response to drone control, even if it's not legally binding, can usher in a new age of safe, reliable and easy to track unmanned devices as to ensure that both states and non-state actors use only lawful devices and do not have access to vehicles that can be easily modified or smuggled and later used for other purposes.

States should find the political will to further the discussions in the Group of Experts panel at the C.C.W. as to adopt a proper legal document that adds compliance to international law and ensures human control and oversight of unmanned vehicles and autonomous weapons during operations.

Conflicts similar to the ones between Azerbaijan and Armenia, or Ukraine and the separatists highlight just how easy states and non-state actors have acquired lethal drones and how cheap to wage a conflict has become, diminishing the value of human life with each strike.

The lack of proper checks and balances will mark a constant struggle for smaller states to compete in the ever growing community of states that own armed drones (autonomous or not), while also steadily ensuring that the U.N. Charter remains nonenforceable as states do not have a practice of notifying the Security Council under art. 51 of the Charter or to promote and proceed with proper legal procedures against the aggressor state or party for failing to comply with art. 2 para. 4 of the Charter.

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[46] Candela Fernández Gil-Delgado, *The Use Of Military Drones: The Impact On Land Forces And Legal Implications*, Finabel – European Army Interoperability Centre, 14.01.2021.

[47] Burak Ege Bekdil, *Turkey and Ukraine to coproduce TB2 drones*, DefenseNews, 04.02.2022.

[48] Robert Lupitu, *Drone militare produse în România: Compania Israel Aerospace Industries a semnat un acord de cooperare cu IAR Brașov*, Calea Europeana, 30.10.2021.

[49] The clause stipulates that: *"In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party."*.

[50] Both accesable on the European Union Safety Agency website, https://www.easa.europa.eu/document-library/easy-access-rules/easy-access-rules-unmanned-aircraft-systems-regulation-eu.

[51] Attorney General of the U.S.A., Guidance Regarding Department Activities to Protect Certain Facilities or Assets from Unmanned Aircraft and Unmanned Aircraft Systems, Office of the Attorney General, 13.04.2020.

References

- Submissions On Behalf Of Victims Of Cross Border Aerial Bombardment, Situation In The Islamic Republic Of Afghanistan, The Appeals Chamber, Case Icc-02/17-116 15-11-2019 1/15 Sl Pt Oa Oa2 Oa3 Oa4;
- 11 Principles on Lethal Autonomous Weapons Systems (LAWS) can be found on the French Ministry of Foreign Affairs website (https://www.diplomatie.gouv.fr/en/french-foreign-policy/united-nations/multilateralism-a-principle-of-action-for-france/alliance-for-multilateralism/article/11-principles-on-lethal-autonomous-weapons-systems-laws);
- A/Hrc/44/38 - Extrajudicial, Summary Or Arbitrary Executions Report Of The Special Rapporteur On Extrajudicial, Summary Or Arbitrary Executions, Human Rights Council, 2020;
- AFP, *Ukraine Destroys Pro-Russian Artillery In Its First Use Of Turkish Drones*, Moscowtimes, 27.10.2021;
- Andreas Schüller, *Unlimited Use Of Armed Drones In The Fight Against Terrorism In Syria? Germany Must Oppose The Erosion Of International Law*, European Center For Constitutional And Human Rights, 2017;
- Andrew William Sanders, *Drone Swarms*, School Of Advanced Military Studies United States Army Command And General Staff College Fort Leavenworth, Kansas, 2017;
- Anthony Deutsch, Stephanie van der Berg, *War crimes prosecutor would not focus on U.S. forces in new Afghanistan probe*, Reuters, 27.09.2021;
- Art. 36, *Swarms*, Discussion Paper For The Convention On Certain Conventional Weapons (Ccw) Geneva, March 2019;
- Ashutosh Anand, *Jammu Drone Attack: Analyzing Current Legal Frameworks that Regulate Drone Warfare by Non-State Actors*, Jurist, 13.07.2021;
- Ben Watson, *Against The Drones*, Defense One, 18.03.2018;
- David Daly, *A Not-So-Short History Of Unmanned Aerial Vehicles (Uav)*, Consortiq, 2021;
- Eduard Pascu, *Numărul Dronelor Mq-9 Reaper Dislocate De Sua În România. Posibile Misiuni, Inclusiv În Ucraina*, Defense Romania, 01.05.2021;
- Group Of Governmental Experts On Emerging Technologies In The Area Of Lethal Autonomous Weapons System, Chairperson's Summary, Ccw/Gge.1/2020/Wp.7, 19.04.2021;
- Irving Lachow, *The Upside And Downside Of Swarming Drones, Bulletin Of Atomic Scientists*, vol. 73, Issue 2, 2017;
- James Marson, Stephen Kalin, *The Military's New Challenge: Defeating Cheap Hobbyist Drones*, Wallstreetjournal, 05.01.2022;
- Jason Crabtree, *Gaza And Nagorno-Karabakh Were Glimpses Of The Future Of Conflict*, Foreign Policy, 21.06.2021;
- John David Blom, *Unmanned Aerial Systems: A Historical Perspective*, Occasional Paper 37, Combat Studies Institute Press Us Army Combined Arms Center Fort Leavenworth, Kansas, 2010;
- Julian Cooper, *The Nagorno-Karabakh War: a Spur To Moscow's Uav Efforts?*, Iiss, March 2021;
- Kerry Chavez, Ori Swed, *Off The Shelf: The Violent Nonstate Actor Drone Threat*, Air & Space Power Journal - Feature, Fall 2020;
- Legality Of The Threat Or Use Of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996;
- Maaike Verbruggen, *The Question Of Swarms Control: Challenges To Ensuring Human Control Over Military Swarms*, EU Non-Proliferation and Disarmament Consortium, Non-Proliferation and Disarmament Papers, no. 65/2019;
- Maziar Homayounnejad, *Drone Swarming And The Explosive Remnants Of War*, Opiniojuris, 19.03.2018;
- Merel Ekelhof, Giacomo Persi Paoli, S*warm Robotics Technical And Operational Overview Of The Next Generation Of Autonomous Systems*, UNIDIR, 2020;
- Procon, *History Of Us Drone Strikes Abroad*, Britannica Procon, 29.10.2020;
- Rosa Brooks, *Drones And The International Rule Of Law*, Georgetown University Law Center, 28 J. Ethics & Int'l Aff. 83-104 (2014);
- Ryan Swan, Drone Strikes: *An Overview, Articulation And Assessment Of The United States' Position Under International Law*, Center For Global Security Research Lawrence Livermore National Laboratory, 2019;
- Sebastian Wuschka, *The Use Of Combat Drones In Current Conflicts – A Legal Issue Or a Political Problem?*, Goettingen Journal Of International Law 3 (2011) 3;
- Shaan Shaikh, Wes Rumbaugh, T*he Air And Missile War In Nagorno-Karabakh: Lessons For The Future Of Strike And Defense*, Csis, 8.12.2020;
- Summit Of The G7 Science Academies, Artificial Intelligence And Society, March 25-26 2019;
- Summit Of The G7 Science And Technology Ministerial Meeting, Joint Statement From Founding Members Of The Global Partnership On Artificial Intelligence, 15.06.2020;
- The President And Fellows Of Harvard College, *Manual On International Law Applicable To Air And Missile Warfare*, Humanitarian Policy And Conflict Research At Harvard University, 2009;
- U.N. Security Council, Letter Dated 8 March 2021 From The Panel Of Experts On Libya Established Pursuant To Resolution 1973 (2011) Addressed To The President Of The Security Council, S/2021/229;

- Verity Coyle, Ousman Noor, *Global: A Critical Opportunity To Ban Killer Robots – While We Still Can*, Amnesty International, 2.11.2021;
- Alper Coşkun, *Strengthening Turkish Policy On Drone Exports*, Carnegie Endowment For International Peace, 18.01.2022;
- Gina Harkins, *Tiny Drones Are The Biggest Threat In The Middle East Since Ieds*, Top General Says, Military.Com, 8.02.2021;
- Kelley Sayler, *A World Of Proliferated Drones: a Technology Primer*, Center For a New American Security, June 2015;
- Wassenaar Arrangement On Export Controls For Conventional Arms And Dual-Use Goods And Technologies, 1996;
- Department of Defense Directive no. 3000.09 on the subject of Autonomy in Weapon Systems,adopted 21.11.2012, with its addendum;
- European Parliament resolution of 12 September 2018 on autonomous weapon systems (2018/2752(RSP)), 2019/C 433/10, published in the Official Journal of the European Union, C 433/86/23.12.2019;
- Proposal for a Regulation Of The European Parliament And Of The Council Laying Down Harmonised Rules On Artificial Intelligence (Artificial Intelligence Act) And Amending Certain Union Legislative Acts, {SEC(2021) 167 final} - {SWD(2021) 84 final} - {SWD(2021) 85 final}, 2021/0106(COD);
- Ray Acheson, Civil society perspectives on the Convention on Certain Conventional Weapons (CCW) Preparatory Committee for the Sixth Review Conference, Report,Vol. 9, No. 5, Reaching Critical Will, 10.09.2021;
- ICAO Model UAS Regulations can be accessed on their website (https://www.icao.int/safety/UA/Pages/ICAO-Model-UAS-Regulations.aspx);
- Rachel Stohl, Shannon Dick, *The Arms Trade Treaty and Drones*, STIMSON, 2018;
- Candela FeRnández Gil-Delgado, *The Use Of Military Drones: The Impact On Land Forces And Legal Implications*, Finabel – European Army Interoperability Centre, 14.01.2021;
- Burak Ege Bekdil, *Turkey and Ukraine to coproduce TB2 drones*, DefenseNews, 04.02.2022;
- Robert Lupitu, *Drone militare produse în România: Compania Israel Aerospace Industries a semnat un acord de cooperare cu IAR Brașov*, Calea Europeana, 30.10.2021;
- Attorney General of the U.S.A., Guidance Regarding Department Activities to Protect Certain Facilities or Assets from Unmanned Aircraft and Unmanned Aircraft Systems, Office of the Attorney General, 13.04.2020;
- Additional Protocol I to the Geneva Conventions (1949);
- Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft, *OJ L 152, 11.6.2019;*
- Commission Delegated Regulation (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft system, *OJ L 152, 11.6.2019.*