



Maritime Autonomous Weapon Systems from the Standpoint of International Humanitarian Law

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Usmanov, Iu., & Chernychka, M. (2022). Maritime Autonomous Weapon Systems from the Standpoint of International Humanitarian Law. *Lex Portus*, 8(2), 33–53. <https://doi.org/10.26886/2524-101X.8.2.2022.2>

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ABSTRACT

Modern armed conflicts demonstrate constant military transformation, and the weapon of the future will be precisely what we now name by the word “autonomous weapon systems” (AWS). Despite many advantages of using it, the possibility of lawful use of AWS and especially unmanned maritime systems as a kind of AWS remains a debatable issue in international law. It is primarily due to the loss of human control over the use of lethal force and the autonomy of such systems. AWS are already widely used by many countries, including Israel, the US, Qatar, the United Arab Emirates, and others, to protect their

borders, increasing the response times and effectiveness of border forces both on land and at sea. Authors highlight a list of issues, namely the absence of the conventional definition of the term “autonomous weapon systems”, the possibility of individual prosecution due to the misuse of AWS, the protection of human life, privacy and appropriate remedies, the compliance of the use of AWS with the principles of distinction between civilians and combatants, military necessity and proportionality, precautions, etc. The problems of using autonomous weapon systems lie in both legal and ethical areas. Such uncertainty automatically narrows the protection of human rights in armed conflicts, which is unacceptable and illegal. Therefore, it is proposed at the regulatory level to prohibit states from using fully autonomous weapon systems and unmanned maritime systems as a kind of AWS that could use lethal force against humans, as well as to provide for the definition of AWS, their types, and principles of use, clearly define and limit their scope within which states could guarantee respect for human rights, as they are responsible for compliance with IHL and international human rights law.

The keywords: *autonomous weapon systems, AWS, drones, naval warfare, international humanitarian law, international human rights law, the law of the armed conflict.*

Introduction

Due to technological progress and modernization, new, more advanced technologies emerge that are empowered by artificial intelligence (AI) instead of human intelligence every year. It also applies to the development of weapons, which historically have often been the driving force. Today, the world is still in the process of constant military transformation, and the weapon of the future will be precisely what we now name by the word “autonomous weapon systems” (AWS).

AWS, and especially unmanned maritime systems as a kind of AWS, are already widely used by many countries, including Israel, the US, Qatar, the United Arab Emirates, and others, to protect their borders, increasing the response times and effectiveness of border forces on land and at sea. Despite the many advantages of using AWS, the possibility of lawful use remains a debatable issue in international law. It is primarily due to the loss of human control

over the use of lethal force and the autonomy of such systems. The article will show the most problematic issues of using AWS and suggest ways to overcome them.

1. What are autonomous weapon systems, and should they be prohibited?

There are no conventional definitions of terms for “autonomous military robots”, “autonomous military drones”, or “autonomous weapon systems” (AWS). Still, in international humanitarian law (IHL), there is already some understanding of these sort of synonymous terms. Thus, the International Committee of the Red Cross (ICRC) considers autonomous weapon systems as any weapon system with autonomy in its critical functions that can select and attack targets without human intervention (International humanitarian law and the challenges of contemporary armed conflicts, 2019, p. 29). After initial activation or launch by a person, AWS self-initiates or triggers a strike in response to information from the environment received through sensors and based on a generalized “target profile”. This means that the user does not choose, or even know, the specific target(s) and the precise timing and/or location of the resulting application(s) of force (ICRC position on autonomous weapon systems, 2021).

The group of experts of the AMPLE program also considers “Unmanned Maritime Systems” (UMS) as a kind of AWS. It makes the definition *that it is a self-propelled or remotely-navigated craft that is normally recoverable and designed to perform functions at sea by operating on the surface, semi-submerged or undersea; and either: a) are remotely operated, b) are remotely controlled, or c) perform their functions independently from a human controller or operator on board the craft* (Dinstein & Dahl, 2020, p. 51–52). According to the ICRC (Schmitt & Goddard, 2017, p. 571) and the US DoD, “UMS comprise unmanned maritime vehicles (UMVs), which include both unmanned surface vehicles

(USVs) and unmanned undersea vehicles (UUVs), all necessary support components, and the fully integrated sensors and payloads necessary to accomplish the required missions” (Unmanned Systems Integrated Roadmap FY2013-2038, p. 8). These missions can include intelligence, surveillance, and reconnaissance; mine countermeasures; anti-submarine warfare; inspection/identification; oceanography; communication/navigation network node; payload delivery; information operations; time-critical strike, and others (Dinstein & Dahl, 2020, p. 51-52). Due to these pivotal missions, UMS are widely used by many countries, especially the USA, India and China, and others in their military operations at sea.

Hitherto, the possibility of lawful use of AWS remains a debatable issue in international law. It is primarily due to the loss of human control over the use of lethal force due to the autonomy of such systems.

Nevertheless, such weapon systems were widely used in Yemen (Al-Haj, 2013), Nagorno-Karabakh (Perrigo, 2018), Afghanistan (Singer, 2009), and Syria (Heim et al., 2019). These systems are also used in the air defense of a wide range of states.

For instance, today, there are three different defense models of AWS, namely Samsung’s SGR-A1 (South Korea), Raphael’s Sentry Tech (Israel), and DODAAM’s Super aEgis II (South Korea). Israel and South Korea are the only two countries that currently produce and sell anti-personnel sentry weapons for border security purposes. Israeli armed forces used the Sentry Tech to protect Israel’s border along the Gaza Strip. South Korea invested in developing the SGR-A1 and Super aEgis II for potential deployment in the Demilitarized Zone (DMZ) – the buffer zone between North and South Korea. The South Korean Army has deployed the SGR-A1 on an experimental basis outside South Korea, notably in Afghanistan and Iraq. DODAAM has also reportedly exported its Super aEgis II to a small number of countries, specifically Qatar and the United Arab Emirates (UAE),

where it is used to protect airbases and critical infrastructure (Boulanin & Verbruggen, 2017, p. 58).

At sea, since UMS can help maintain a persistent presence in areas challenging to monitor due to risks arising from climate, vast or complex terrain, or unexploded ordnance, enabling defense-in-depth even with complex geographies, the Indian militaries, who are engaged in a diverse range of theatres (mountains to the north, deserts to the west, and India's island territories and oceanic borders), or the Indonesian militaries, who are responsible for 16,000 or so islands, actively use UMS as a kind of AWS. For instance, the Indian Navy inaugurated the Integrated Underwater Harbour Defence and Surveillance System (IUHDSS) in 2016. Currently operational in the port cities of Vishakhapatnam and Mumbai, this Israel-made multi-sensor system (radar, electro-optic cameras, and sonar) can identify, track and generate warnings for underwater and surface threats near the coasts. However, the system cannot act against these threats. Along the lines of the IUHDSS, AWS can deploy armed Unmanned Underwater Vehicles (UUVs) and UAVs to conduct additional reconnaissance of detected objects, verbal issue warnings where necessary, fire warning shots, or otherwise engage the target without lethal force. The Indonesian Navy also uses AWS to detect and eliminate underwater mines with the help of the STERNA UAV system (Ray, 2018).

Because of the facts mentioned above and spreading the use of AWS, the UN Security Council Expert Group, in a report from 2021, even recognized the legal possibility of using autonomous military drones (Final report, 2021).

However, if the area of attack, type of bullets, or other equipment of such systems are already regulated by general IHL norms, namely the prohibition of the use of blinding (Additional Protocol IV to the CCW, 1995), biological (Convention on the Prohibition of the Development, Production and Stockpiling of

Bacteriological (Biological) and Toxin Weapons and on their Destruction, 1972) or chemical (Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, 1992) weapons, anti-personnel mines (Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, 1997), etc., the use of autonomous military robots is regulated neither at the conventional level (Brzozowski, 2019), nor in customary law (Brehm, 2017, p. 57-59). The lack of such regulation leads to numerous legal gaps, namely the possibility of individual prosecution due to the misuse of AWS (Hammond, 2015, p. 662-665), the protection of human life, privacy, and appropriate remedies (Heyns, 2013, para. 45), the compliance of the use of autonomous weapons with the principles of distinction between civilians and combatants (for example, if an autonomous military drone attack was carried out and its victim was not killed, but only wounded, the continuation of an attack of such a person and the medical personnel assisting him is an international crime (Usmanov, 2021, p. 98), military necessity and proportionality, precautions, Martens clause, and so on. Because of such drawbacks, the mass use of AWS could go beyond the scope of IHL and international human rights law (IHRL) regulation, which narrows the protection of human rights in armed conflicts (Usmanov, 2021, p. 98). In addition, according to ICRC experts, the use of AWS raises fundamental ethical issues for humanity, substituting human decisions about life and death with sensors, software, and machine processes (ICRC position on autonomous weapon systems, 2021).

Because of these drawbacks in the use of AWS, one hundred and sixty-five non-governmental organizations and campaigns (International Discussions Concerning Lethal Autonomous Weapon Systems, 2021) (including Campaign to Stop Killer Robots, Human Rights Watch, and others) are calling for a complete preventive ban

on such “uncontrolled” systems. However, realizing the unreality and utopian nature of such ideas, at least since most countries are already actively supporting the use of high-tech equipment on the battlefield today, in 2019 the Group of governmental experts of the high contracting parties to the Convention on prohibitions or restrictions on the use of certain conventional weapons which may be deemed to be excessively injurious or to have indiscriminate effects (CCW) (Guiding Principles affirmed by the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System, 2019) developed 11 principles for the regulation of lethal AWS, which was the first attempt to formalize the legal regulation of such systems.

The experts of this group have identified fundamental principles for the use of AWS, in particular:

- (a) IHL continues to apply fully to all weapons systems;
- (b) Human responsibility for decisions on the use of weapon systems and accountability cannot be transferred to machines;
- (c) Human-machine interaction must be in compliance with applicable international law, in particular, IHL;
- (d) Accountability for developing, deploying, and using any emerging weapons system in the framework of the CCW must be ensured in accordance with applicable international law;
- (e) Development, acquisition, or adoption of a new weapon, means, or method of warfare, a determination must be not prohibited by international law;
- (f) The risk of acquisition by terrorist groups and the risk of proliferation of AWS should be considered (Guiding Principles affirmed by the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System, 2019), etc.

Unfortunately, today these principles have not been widely supported by most states. That is due to the innovative layout of regulation of AWS introduced by the Group, which includes the

involvement of distinguished experts to develop the rules on the use of AWS, finding a compromise between state military interests and human rights, etc. In our opinion, it is necessary to make the principles, as mentioned earlier, an act of soft law binding to increase the protection of human rights during armed conflicts. This does not mean that we call for this soft law act to become an international treaty right now. However, the reference to such principles by international institutions and states, international judicial and quasi-judicial bodies, their incorporation into national law, and the use of national courts, and law enforcement agencies, of course, will only strengthen the protection of human rights through the formation of *opinio juris* of states in the creation of appropriate customary norms.

Nowadays, there are no reasonable grounds to prohibit such weapons because their lawful use does not violate IHL, in particular the principle of distinction, and such weapons do not in themselves cause unnecessary suffering. The key to the autonomous weapon is the independence of action in critical functions, namely the ability to identify and attack the target. In turn, the criterion of “autonomy” is determined by the degree of human control over the operation of weapons (Views of the International Committee of the Red Cross (ICRC) on autonomous weapon systems, 2016, p. 2).

Today, the most common position is that a person must maintain a “significant” level of control over autonomous systems (Ekelhof, 2018). In other words, it is enough to provide partial control over the actions of the autonomous system (“human-on-the-loop”) so that the system works completely independently. However, a person at any stage can interfere in the decision-making algorithm. Fully human-independent systems (“human-out-of-the-loop”), which carry out operations without external intervention, should be used very limitedly and only in cases where the attack requires an immediate response (air defense and other defense

systems). Only in this case, a state will ensure the proper use of AWS by its troops.

Today, only two countries – the United States and the United Kingdom – have developed public policies on AWS. Nevertheless, both the United States recognizes that “autonomous and semi-autonomous weapons systems shall be designed to allow commanders and operators to exercise appropriate levels of human judgment over the use of force”, and the UK states that “autonomous release of weapons” will not be accepted and that “... operation weapon systems will always be under human control” (Report of the ICRC Expert Meeting on “Autonomous weapon systems: technical, military, legal and humanitarian aspects”, 2014, p. 2), which indicates support for the use of lethal force only by those autonomous weapon systems that provide significant human control in making the final decision on the use of lethal force.

2. Can autonomous weapon systems comply with IHL norms?

Only under human control AWS can fully comply with IHL, determine the status of the parties of the armed conflict, and determine whether military advantage will outweigh the damage caused by military operations to civilians and objects.

The security of civilians must be guaranteed during hostilities, as they must not be attacked in any way, except when they are directly participating in hostilities (Customary IHL, 2005, rule 1, Legality of the Threat or Use of Nuclear Weapons, 1996, paras. 78–79, Geneva Convention (IV), 1949, art. 13, 27). Even if the autonomous systems effectively distinguish between persons based on their uniform, it is unclear how it will determine the status of a person in a non-international armed conflict where members of non-governmental groups may not wear the distinctive signs. Will the autonomous systems be able to identify persons hors de combat?

An example of an attempt to create such a system is Samsung's SGR-A1, which could determine the status of a combatant without outside control (Velez-Green, 2015). If a person held his hands with his weapon raised, the system automatically identified him as having laid down his arms. However, it raises questions about the objectivity of such an identification. After all, the system can quite predictably operate within the algorithm only with additional control over its operation.

Secondly, the use of autonomous weapons must comply with the principles of humanity and the public conscience (The Martens Clause, 1907, GC I-IV, Arts 63/62/142/158; AP I, Art. 1(2); AP II, Preamble). It can only be provided by the human operator, approving each decision of the mechanism.

Third, determining the legitimacy of the target for an attack depends on how much the attack on the object will weaken the enemy's military forces in a way that causes minor damage (AP I, art. 35, 51(5), 57, Customary IHL, 2005, Rule 21). It should be understood that such calculations require an informed decision that requires an understanding of the context of the operation. We firmly believe that only a person can correctly assess the collateral damage from an attack. Even provided that the autonomous system can identify civilians near the target, will it be able to identify the presence of a mobile hospital near a military objective or the fact that a cultural monument is not used for military purposes?

One clear example of this position is the decision of the Federal Constitutional Court of Germany in 2006 (Aviation Security Act Case: BVerfG, 1 BvR 357/05, 2006), that established the German Minister of Defense could not order the AWS to shoot down a passenger plane hijacked by terrorists, even if hijackers would use such a plane to attack civilians on the ground. If the autonomous system identified this aircraft as an "enemy", would it be able to adequately consider whether such a target should be considered legitimate or not?

In addition, compliance with the rules of distinction, necessity, proportionality, and precautionary measures during an attack requires a comprehensive assessment based on the circumstances prevailing both at the time of the decision to attack and during the attack. Combatants must make these estimates close enough to attack. If these assessments are part of planning assumptions, they must be in place until the attack. Thus, commanders or operators must maintain a level of human control over weapon systems sufficient to enable them to make decisions, depending on the context, in order to apply IHL rules (International humanitarian law and the challenges of contemporary armed conflicts, 2019).

Fourth, according to Art. 85 (3) of the AP (I), indiscriminate attacks are unlawful when they cause excessive loss of life, injury to civilians, or damage to civilian objects (Protocol Additional (I) to the Geneva Conventions, 1949, Art. 35 (2), Customary IHL, 2005, Rule 70). The criterion of “excessive” is subjective and, therefore, must be determined by a human. Weapons with autonomy in their essential functions, uncontrolled, unpredictable, and unlimited in time and space, would be illegal because people have to make context-specific judgments that take into account complex conditions and are not easily evaluated.

3. Can autonomous weapon systems be responsible for the consequences of their actions?

Only people who plan, make decisions, and carry out hostilities must fulfill IHL’s legal obligations. It is people, not machines, who follow and enforce these rules, and people who can be held responsible for violations. Regardless of the machine, computer program, or weapon systems used, individuals and parties to the conflict remain responsible for their consequences (International humanitarian law and the challenges of contemporary armed conflicts, 2019, p. 30). After all, to impose liability for illegal actions, the autonomous systems must establish the existence of

criminal intent (GC I-IV, 1949, Arts 50/51/130/147, Rome Statute of the International Criminal Court, 1998, Art. 30), which is impossible in stand-alone autonomous military robots. It leads to forming a legal gap because there is no subjective side to the crime.

If the human operator maintains significant control over the functioning of the autonomous system, the responsibility for illegal actions will lie with him. However, this requires that the operator exercise effective control over the AWS during the attack and be able to prevent the crime (*The Prosecutor v. Ignace Bagilishema*, 2002, para. 50; *the Prosecutor v. Mucic et al.*, 1998, para. 346, *the Prosecutor v. Jean-Pierre Bemba Gombo*, 2009, para. 407).

It is even more challenging to put the responsibility on the creator of AWS for the system's decision created by him. Programming of the system can be carried out long before the beginning of the armed conflict, which excludes the possibility of conviction for a war crime (Rome Statute of the International Criminal Court, 1998, Art. 8–2). In addition, it is necessary to prove that the system was explicitly programmed to violate IHL. However, the autonomous system often reacts to the object of attack spontaneously and based on the available information (*Views of the International Committee of the Red Cross (ICRC) on autonomous weapon systems*, 2016). Therefore, it is impossible to predict its work's possible consequences. The ICRC also claims a state is not required to foresee or analyze all possible misuses of a weapon, for almost any weapon can be misused in ways that would be prohibited (*Sandoz et al.*, 1987, para 1469).

At present, the legitimacy of the use of AWS is ambition rather than reality. Disputes in this area revolve around the Convention on the prohibition or restriction on the use of certain conventional weapons which may be deemed to be excessively injurious or to have indiscriminate effects (*The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons*

Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, 1980). There has already been introduced a proposal to include an additional Protocol in such an agreement (Wareham, 2019), which would prohibit the use of AWS. However, the main issue is whether such inclusion would be rational. The productive use of AI for battlefield tasks has been explored on multiple occasions: digital maps, missing person detection systems, satellite image recognition, etc. This is another incomplete list of the harmonious integration of autonomous systems into hostilities (Artificial intelligence and machine learning in armed conflict: A human-centered approach, 2019).

That is why now the focus should not be concentrated on the prohibition of such systems, establishing a clear boundary that would make their actions fully controlled and predictable.

The best solution to these problems, in our opinion, is the adoption of a binding international legal instrument – a convention on autonomous weapons or an act of soft international law but approved at a high level of authority in the form of UN General Assembly resolution, which collected all the rules on the use of AWS by states.

Such a legal instrument should be adopted with the participation of major players in this field, including the United States, China, Turkey, Russia, and other states actively involved in AWS development. Moreover, this document should result from a consensus on how states can develop, use autonomous weapons, and be responsible for their use. Precisely because IHL prohibits States from employing “weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering” (AP (I), 1977, Art. 35(2)) (*The Opinion on the legality of nuclear weapons use by the International Court of Justice (ICJ) approved, these limitations were the “cardinal principles”* (Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion), 1996, para. 78) of IHL and binding on all

States as “intransgressible”), powerful states should a priori be interested in regulating such an issue regarding the use of AWS.

This document itself should establish the definition of AWS, implement the eleven principles mentioned above of autonomous weapons, developed by the Group of governmental experts of the high contracting parties to CCW, and subdivide these systems concerning the degree of human intervention in “critical” decisions on semi-autonomous, in which AI is only responsible for aiming and selecting the target, controlled-autonomous, where AI actions can be stopped at any time by the operator, and fully autonomous weapons without human intervention (Report of the ICRC Expert Meeting on “Autonomous weapon systems: technical, military, legal and humanitarian aspects”, 2014, p. 6). The latter, which is intended or used to use force against people without the operator’s intervention, should, in turn, be prohibited. After all, only a “conscious” or “minimal” (Ethics And Autonomous Weapon Systems: An Ethical Basis For Human Control?, 2018, p. 11–21) level of human control in making critical decisions can ensure that the use of AWS complies with IHL standards.

Such a document should also limit the use of AWS, providing clear areas of application, namely air defense and other defense areas, the types of targets they can attack (e.g., vehicles and objects rather than personnel), and the contexts in which they are used (e.g., simple, static, predictable environments rather than complex, dynamic, unpredictable environments) (Ethics And Autonomous Weapon Systems: An Ethical Basis For Human Control?, 2018, p. 11–21). Only in this case, a state will be able to ensure the legitimate use of its troops AWS.

Conclusions

Summarizing the above, we can conclude that human-controlled AWS today are within the regulation of IHL because such systems can be used in compliance with the principles of distinction,

military necessity, proportionality, and caution. In international law, the use of fully autonomous military robots and unmanned maritime systems as a kind of AWS, capable of using lethal force against humans, is acute. The problems of using autonomous weapon systems lie in both legal and ethical areas. Such uncertainty automatically narrows the protection of human rights in armed conflicts, which is unacceptable and illegal. Therefore, it is proposed at the regulatory level to prohibit states from using fully autonomous weapon systems and unmanned maritime systems as a kind of AWS that could use lethal force against humans, as well as to provide for the definition of AWS, their types, and principles of use, clearly define and limit their scope within which states could guarantee respect for human rights, as they are responsible for compliance with international humanitarian law and international human rights law.

REFERENCES

- Al-Haj, A. (2013). *Officials: US, drone strike kills 13 in Yemen*. The Washington Post. https://www.washingtonpost.com/world/officials-us-drone-strike-kills-13-in-yemen/2013/12/12/3b070f0a-6375-11e3-91b3-f2bb96304e34_story.html
- Boulanin, V., & Verbruggen, M. (2017). *Mapping the development of autonomy in weapon systems*. SIPRI. https://www.sipri.org/sites/default/files/2017-11/siprireport_mapping_the_development_of_autonomy_in_weapon_systems_1117_1.pdf
- Brehm, M. (2017). *Defending the Boundary: Constraints and Requirements on the Use of Autonomous Weapon Systems Under International Humanitarian and Human Rights Law*. *Geneva Academy Briefing*, 9. https://www.geneva-academy.ch/joomlatools-files/docman-files/Briefing9_interactif.pdf
- Brzozowski, A. (2019). *No progress in UN talks on regulating lethal autonomous weapons*. EURACTIV. <https://www.euractiv.com/section/global-europe/news/no-progress-in-un-talks-on-regulating-lethal-autonomous-weapons>
- Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects*, 1980. <https://geneva-s3.unoda.org/static-unoda->

site/pages/templates/the-convention-on-certain-conventional-weapons/CCW%2Btext.pdf

Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, 1992. UN Office of Disarmament Affairs. <https://treaties.unoda.org/t/cwv>

Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, 1972. International Committee of the Red Cross. <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/INTRO/450>

Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, 1997. <https://geneva-s3.unoda.org/static-unoda-site/pages/templates/anti-personnel-landmines-convention/APLC%2BEnglish.pdf>

Customary IHL. (2005). International Committee of the Red Cross. https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule1

Dinstein, Y., & Dahl, A.W. (2020). *Oslo Manual on Select Topics of the Law of Armed Conflict.* Springer Nature. https://library.oapen.org/bitstream/handle/20.500.12657/39564/2020_Book_OsloManualOnSelectTopicsOfTheL.pdf?sequence=1&isAllowed=y

Ekelhof, M. (2018). *Autonomous weapons: Operationalizing meaningful human control.* Humanitarian Law & Policy. <https://blogs.icrc.org/law-and-policy/2018/08/15/autonomous-weapons-operationalizing-meaningful-human-control/> Hammond, D.N. (2015). *Autonomous Weapons and the Problem of State Accountability.* *Chicago Journal of International Law*, 15(2). <https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1085&context=cjil>

Geneva Convention (I) on Wounded and Sick in Armed Forces in the Field, 1949. International Committee of the Red Cross. <https://ihl-databases.icrc.org/ihl/full/GCI-commentary>

Geneva Convention (II) on Wounded, Sick and Shipwrecked of Armed Forces at Sea, 1949. International Committee of the Red Cross. <https://ihl-databases.icrc.org/ihl/full/GCII-commentary>

Geneva Convention (III) Relative to the Treatment of Prisoners of War, 1949. International Committee of the Red Cross. <https://ihl-databases.icrc.org/ihl/full/GCIII-commentary>

- Geneva Convention (IV) Relative to the Protection of Civilian Persons in Time of War, 1949*. International Committee of the Red Cross. <https://ihl-databases.icrc.org/ihl/INTRO/380>
- Heim, E., Sassòli, M., & Issar, Y. (2019). Iraq/Syria/UK, Drone Operations against ISIS. *ICRC, Casebook*. <https://casebook.icrc.org/case-study/iraqsyria-uk-drone-operations-against-isis>
- Heyns, Ch. (2013). *Report of the on Extrajudicial, Summary or Arbitrary Executions*. (UN Doc A/HRC/23/47). <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G13/127/76/PDF/G1312776.pdf?OpenElement>
- ICJ. (1996). *Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion)*. <https://www.icj-cij.org/public/files/case-related/95/7646.pdf>
- ICRC Expert Meeting. (2014, May 9). *Report on autonomous weapon systems: technical, military, legal and humanitarian aspects*. <https://www.icrc.org/en/doc/assets/files/2014/expert-meeting-autonomous-weapons-icrc-report-2014-05-09.pdf>
- ICRC position on autonomous weapon systems*. (2021, May 12). International Committee of the Red Cross. <https://www.icrc.org/en/document/icrc-position-autonomous-weapon-systems>
- International Committee of the Red Cross. (2019). *Artificial intelligence and machine learning in armed conflict: A human-centred approach*. https://www.icrc.org/en/download/file/96992/ai_and_machine_learning_in_armed_conflict-icrc.pdf
- International Committee of the Red Cross. (2018, April 3). *Ethics And Autonomous Weapon Systems: An Ethical Basis For Human Control?*. <https://www.icrc.org/en/document/ethics-and-autonomous-weapon-systems-ethical-basis-human-control>
- International Committee of the Red Cross. (2019, November 22). *International humanitarian law and the challenges of contemporary armed conflicts*. https://www.icrc.org/sites/default/files/document/file_list/challenges-report_new-technologies-of-warfare.pdf
- International Committee of the Red Cross. (2016, April 11). *Views on autonomous weapon systems*. <https://www.icrc.org/en/document/views-icrc-autonomous-weapon-system>
- International Criminal Court. (1998). *Rome Statute of the International Criminal Court*. <https://www.icc-cpi.int/resource-library/documents/rs-eng.pdf>
- International Criminal Court. (2009). *The Prosecutor v. Jean-Pierre Bemba Gombo* (2009). PTC II, Decision on the Confirmation of

- Charges. (No. ICC-01/05-01/08-424). ICC Legal Tools Database. <https://www.legal-tools.org/doc/07965c/>
- International Criminal Tribunal for Rwanda. (2002). *The Prosecutor v. Ignace Bagilishema*. AC, Appeal Judgement. (No. ICTR-95-1A-A. (2002). ICC Legal Tools Database. <https://www.legal-tools.org/doc/ebc505/>
- International Criminal Tribunal for the former Yugoslavia. (1998). *The Prosecutor v. Mucic et al.* TC, Judgement. (No. IT-96-21-T). ICC Legal Tools Database. <https://www.legal-tools.org/doc/6b4a33/>
- Panel of Experts on Libya established pursuant to Security Council resolution 1973. (2021). *Final report*. (UN Doc S/2021/229). <https://undocs.org/S/2021/229>
- Perrigo, B. (2018). *A Global Arms Race for Killer Robots Is Transforming the Battlefield*. Time. <https://time.com/5230567/killer-robots/>
- Protocol IV to the CCW Convention (Protocol IV on Blinding Laser Weapons)*, 1995. International Committee of the Red Cross. <https://ihl-databases.icrc.org/ihl/INTRO/570>
- Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I)*, 1977. International Committee of the Red Cross. <https://ihl-databases.icrc.org/ihl/INTRO/470>
- Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II)*, 1977. International Committee of the Red Cross. <https://cutt.ly/DHZorLB>
- Ray, T. (2018). Beyond the ‘Lethal’ in Lethal Autonomous Weapons: Applications of LAWS in Theatres of Conflict for Middle Powers. *Observer Research Foundation*. No. 180. <https://www.orfonline.org/research/beyond-the-lethal-in-lethal-autonomous-weapons-applications-of-laws-in-theatres-of-conflict-for-middle-powers-46259/>
- Sandoz, Y., Swinarski, Ch., & Zimmermann, B. (1987). *Commentary on the Additional Protocols of June 08 1977 to the Geneva Conventions of August 12 1949*. Library of Congress. https://www.loc.gov/rr/frd/Military_Law/pdf/Commentary_GC_Protocols.pdf
- Schmitt, M.N., & Goddard, D.S. (2017). International law and the military use of unmanned maritime systems. *International Review of the Red Cross*, 98(2), 567-592. https://international-review.icrc.org/sites/default/files/irc98_10.pdf
- Singer, P.W. (2009). *Military Robots and the Laws of War*. The New Atlantis. <https://www.thenewatlantis.com/publications/military-robots-and-the-laws-of-war>

- The Congressional Research Service. (2021). *International Discussions Concerning Lethal Autonomous Weapon Systems*. FAS Project on Government Secrecy. <https://fas.org/sgp/crs/weapons/IF11294.pdf>
- The German Federal Constitutional Court. (2006). *Aviation Security Act Case: BVerfG, 1 BvR 357/05*. <https://www.bundesverfassungsgericht.de/SharedDocs/Pressemitteilungen/EN/2006/bvg06-011.html>
- The Martens Clause. Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land, 1907*. International Committee of the Red Cross. <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/xsp/.ibmmodes/domino/OpenAttachment/applic/ihl/ihl.nsf/4D47F92DF3966A7EC12563CD002D6788/FULLTEXT/IHL-19-EN.pdf>
- UN. (2019). *Guiding Principles affirmed by the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System*. https://ccdcoe.org/uploads/2020/02/UN-191213_CCW-MSP-Final-report-Annex-III_Guiding-Principles-affirmed-by-GGE.pdf
- U.S. Department of Defense. (2014). *Unmanned Systems Integrated Roadmap FY2013-2038*. <https://www.hsdl.org/?view&did=747559>
- Usmanov, I.I. (2021). *The Right to Life in Conditions of Armed Conflicts and Situations of Internal Violence*. Kyiv. <https://play.google.com/store/books/details?id=Rys1EAAAQBAJ> [in Ukrainian].
- Velez-Green, A. (2015). *The Foreign Policy Essay: The South Korean Sentry – A “Killer Robot” to Prevent War*. Lawfareblog. <https://www.lawfareblog.com/foreign-policy-essay-south-korean-sentry%E2%80%9494-killer-robot-prevent-war>
- Wareham, M. (2019, June 28). *Statement to the CCW Consultation on lethal autonomous weapons systems*. Human Rights Watch. <https://www.hrw.org/news/2019/06/28/statement-ccw-consultation-lethal-autonomous-weapons-systems>

Усманов Ю., Черничка М. Морські автономні системи озброєння з позицій міжнародного гуманітарного права. – Стаття.

Сучасні збройні конфлікти демонструють постійну воєнну трансформацію, і зброєю майбутнього буде те, що зараз називається “автономними системами озброєння” (АСО). Незважаючи на багато переваг їх використання, можливість правомірного використання АСО, і особливо безпілотних морських комплексів як різновиду АСО, залишається дискусійним питанням у між-

народному праві. Насамперед, це пов'язано з втратою людиною контролю за застосуванням смертоносної сили та автономності таких систем. АСО уже широко використовуються багатьма країнами, зокрема Ізраїлем, США, Катаром, Об'єднаними Арабськими Еміратами та іншими для захисту своїх кордонів, збільшення часу реагування та ефективності прикордонних військ як на суші, так і на морі. Автори виокремлюють ряд проблем, а саме: відсутність загальноприйнятого визначення терміна “автономні системи озброєння”, можливість індивідуального переслідування за неправомірне використання АСО, захист життя людини, недоторканність приватного життя та відповідних засобів правового захисту, застосування АСО з дотриманням принципів розмежування цивільних осіб та комбатантів, військової необхідності та пропорційності, запобіжних заходів тощо. Проблеми застосування автономних систем озброєння належать як до правової, так і до етичної сфер. Така невизначеність автоматично звужує захист прав людини у збройних конфліктах, що є неприйнятним та незаконним. Тому пропонується на нормативному рівні заборонити державам використовувати цілковито автономні системи озброєння та безпілотні морські комплекси як різновид АСО, здатні застосовувати летальну силу проти людини, а також передбачити визначення АСО, їх видів та принципи використання, які чітко визначають та обмежують сферу їх застосування, у рамках якої держави можуть гарантувати дотримання прав людини. Оскільки саме на держави покладено відповідальність за дотримання МПП та міжнародного права у галузі прав людини.

Ключові слова: автономні системи озброєння, АСО, безпілотники, бойові дії на морі, міжнародне гуманітарне право, міжнародне право прав людини, право збройних конфліктів.

Усманов Ю., Черничка М. Морские автономные системы вооружения с позиций международного гуманитарного права. – Статья.

Современные вооруженные конфликты демонстрируют постоянную военную трансформацию, и оружием будущего будет именно то, что сейчас называется “автономными системами вооружения” (АСВ). Несмотря на многие преимущества их использования, возможность правомерного использования АСВ, и особенно беспилотных морских комплексов в качестве разновидности АСВ, остается дискуссионным вопросом в международном праве. В первую очередь, это связано с потерей человеком контроля над применением смертоносной силы и автономности таких систем. АСВ уже широко используются многими странами, в т.ч. Израилем, США, Катаром, Объединенными Арабскими Эмиратами и другими, для защиты своих границ, увеличения времени реагирования и эффективности пограничных войск как на суше, так и на море. Авторы выделяют перечень проблем, а именно: отсутствие обще-

принятого определения термина “автономные системы вооружения”, возможность индивидуального преследования за неправомерное использование АСВ, защита жизни человека, неприкосновенности частной жизни и соответствующих средств правовой защиты, применение АСВ с соблюдением принципов разграничения гражданских лиц и комбатантов, военной необходимости и соразмерности, мер предосторожности и др. Проблемы применения автономных систем вооружения лежат как в правовой, так и в этической сферах. Такая неопределенность автоматически сужает защиту прав человека в вооруженных конфликтах, что неприемлемо и незаконно. Поэтому предлагается на нормативном уровне запретить государствам использовать полностью автономные системы вооружения и беспилотные морские комплексы как разновидность АСВ, способные применять летальную силу против человека, а также предусмотреть определение АСВ, их видов и принципы использования, четко определяющие и ограничивающие сферу их применения, в рамках которой государства могут гарантировать соблюдение прав человека. Поскольку именно государства несут ответственность за соблюдение МПП и международного права в области прав человека.

Ключевые слова: автономные системы вооружения, АСВ, беспилотники, боевые действия на море, международное гуманитарное право, международное право прав человека, право вооруженных конфликтов.

