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Use of Unmanned Aerial Vehicles for Combat Purposes: Selected Legal and Medical Aspects

Użycie bezzałogowych statków powietrznych w celach bojowych. Wybrane aspekty prawne i medyczne

ABSTRACT

The COVID-19 pandemic has led to a decrease in human contact and a shift towards cyberspace, resulting in the rapid growth of the IT sector and advancements in engineering using IT solutions. This global phenomenon has also caused the collapse of the world economy and increased tensions. In 2022, the largest armed conflict in European history since World War II occurred due to the actions of the Russian Federation. The article focuses on the alignment of legal regulations at domestic and international levels regarding the use of combat drones. The main thesis confirms the assumption that legal systems of states and organizations are ill-prepared for the use of combat drones. The consequences of using these devices in the medical field are examined to support this thesis. The goal of the article is to present legal solutions that prioritize the protection of life and health. The cognitive

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value for practice is related to the unification of the conceptual framework and focus on transnational norms that can be used in the fields of both law and medicine. By definition, the article has an international scope due to the problems discussed.

Keywords: legal regulations; use of combat drones; unmanned aerial vehicles; medical aid; armed conflict

INTRODUCTION

The announcement by the World Health Organization (WHO) on 11 March 2020 of the global COVID-19 pandemic has consequently caused numerous multifaceted changes in all areas of the international community. These have affected both public and private, economic and legal life. Fears of loss of life and health have forced unregulated access to a wide variety of IT tools and forced the IT sector to make unprecedented technological advances.[1] The global technological development collided on 22 February 2022 with a conventional armed conflict initiated by the Russian Federation against Ukraine. Currently, this conflict, described as a war, is in every respect among the largest since World War II. The clash of high technologies with conventional warfare has outgrown the solutions known so far, including, which is the essence of this study, legal solutions, both at the international and EU levels. They have significantly affected the sphere of internal and external security of states.[2] The problem also involves aspects of permanent and non-permanent injuries, involving medical services, in particular emergency medical services.[3]

The purpose of this study is: (a) to develop a uniform definition of unmanned aerial vehicles (UAVs), (b) to discuss the current legal status of the use of these devices at the international, EU and internal levels, (c) to discuss the risks and

[1] For more details on the issue of cubersecurity in the context of technological development, see J. Kostrubiec, *Public Entities within the National Cybersecurity System and Their Responsibilities*, [in:] *The Legal Status of Public Entities in the Field of Cybersecurity in Poland*, eds. K. Chałubińska-Jentkiewicz, M. Karpiuk, J. Kostrubiec, Maribor 2021, pp. 4–19; M. Karpiuk, *Recognizing an Entity as an Operator of Essential Services and Providing Cybersecurity at the National Level*, "Prawo i Więź" 2022, no. 4, pp. 166–179.

[2] Problems of security of the individual in the context of external threats are addressed quite thoroughly in the Polish literature on the subject by K. Drabik and A. Pieczywok (*Demograficzne i globalizacyjne aspekty bezpieczeństwa personalnego*, Warszawa 2018).

[3] The origins of medical rescue systems refer to armed conflicts. The impulse for the development of emergency aid was a result of the battle fought in the Franco-Sardinian-Austrian War on 24 June 1859, which is considered to be one of the bloodiest conflicts in modern history. As a result, the treatment for wounds, damage to locomotor organs, complications due to infection, and multiple organ injuries have been improved. For more details on the subject, see A. Nogalski, T. Lübek, L. Jankiewicz, J. Karski, *Patients with Multiple Injuries – Diagnosis and Treatment in Emergency Department*, "Annales UMCS. Sectio D – Medicina" 2005, vol. 60, pp. 762–766.

violations of universally applicable laws, and (d) to indicate the directions of risks in the context of death and injury due to the use of drones.

The essential hypothesis to be confirmed in the conclusion assumes that the current technological changes, due to their multifaceted nature, are not confirmed by both international and EU regulations. Temporary legal solutions, even those functioning, are detached from reality, and solutions developed in the common law model should be sought first. The study mainly uses legal-dogmatic, comparative and statistical methods.

OUTLINE OF THE CONCEPTUAL GRID IN INTERNATIONAL LAW AND NATIONAL REGULATIONS

It seems fair to emphasize that the issue under discussion is interdisciplinary in nature. The conceptual grid is intended to reduce interpretative doubts and ambiguities and clarify those concepts that can be troublesome especially when it comes to the implementation of technical and IT concepts into the field of legal research. First of all, it is necessary to refer to the clarification of what is a "drone", "combat drone" and the operational system of an unmanned aircraft as well as to clarify what the communication and management of the aircraft by the pilot of the unit at a distance consist in. The problem of the conceptual grid does not apply to the medical layer of the article.

The basic concept refers to the term "drone". The name "drone" is usually used as a popular term, including in media reports, for the so-called UAV.[4] The Polish legal, military and technical literature contains no uniform definition of a UAV. Therefore, it seems right to develop a relevant definition using interdisciplinary and international solutions. The basic core of the definition of "unmanned aircraft" refers to "aircraft". Aircraft, in turn, in the fields of security, law or technology, is directly linked to communication and logistics in the airspace. Airspace, in turn, is the domain of international aviation law. The first multilateral convention that addressed the use of aircraft was the Paris Convention of 13 October 1919,[5] commonly known as the Air Navigation Convention[6] (hereinafter: Paris Convention),

[4] It should be first pointed out that the fundamental doubt about the term "drone", which exists in both the journalistic and scientific fields, involves defining the space in which that unmanned device may operate. Due to today's technological solutions, drones can move freely on or under water, in air, on land, and in outer space. In order to narrow the research problem, the term "drone" will be used for devices moving in the airspace.

[5] B. Winiarski, *Wybór źródeł do nauki prawa międzynarodowego*, Warszawa 1938, pp. 228–237.

[6] It should be strongly emphasised that, in the Polish literature on the theory of law, this international agreement is wrongly referred to as "Air Navigation Convention" while the correct name should be "Convention relating to the regulation of aerial navigation".

ratified by more than 30 countries, including Poland.[7] It allowed the use of airspace, known in the past as "air navigation", allowing at the time the use of that space without restriction by the countries over whose territory aircraft travelled. It was superseded by the Convention on International Civil Aviation signed in Chicago on 7 December 1944[8] (hereinafter: Chicago Convention). The first definition of "aircraft" was contained in the Paris Convention. Unlike later international conventions, the problem of defining "aircraft" was included not in the initial articles, but in Annex D to the Paris Convention in the section devoted to the Provisions on Lights and Signals and Rules of Flight. According to the Annex, aircraft means "balloons, whether fixed or free, kites, airships, and flying machines". Within these terms, it seems appropriate to point out the definition that characterizes a flying machine. According to the Convention, "flying machine" also means any kind of airplane, hydroplane (with floats or a flying boat) or any other aircraft heavier than air, having its own means of propulsion. This definition is noteworthy on the grounds that as early as 1919 it was recognized that an airplane could be a device with its own means of propulsion. The concept of a "means of propulsion" was not further specified, thus providing opportunities for technical development without having to change the provisions of the Convention.

In addition to the definition of aircraft, the Paris Convention addressed an important issue for the future, namely the types of aircraft. According to the wording of Article 30 of the Paris Convention, military aircraft, aircraft designed for state service (Postal Service, Customs, Police) are considered state aircraft. Other aircraft were considered private aircraft. The latter were subject to the regime of the Convention. Given that the Convention's requirements relating to detailed technical requirements are more than a century old, it should be emphasized that, with regard to aircraft, they remain relevant even today.[9]

The Chicago Convention, in the context of the analysis of the subject, has made substantial progress in adapting regulations to the rapidly developing aviation industry. In Article 1, it reaffirmed the earlier principle of state sovereignty in airspace,

[7] See Act of 23 September 1922 on the ratification of the Convention relating to the regulation of aerial navigation, signed in Paris on 13 October 1919 (Journal of Laws 1922, no. 85, item 761).

[8] See Government declaration of 31 March 1959 on Poland's ratification of the Convention on International Civil Aviation and the International Air Services Transit Treaty, signed in Chicago on 7 December 1944 (Journal of Laws 1959, no. 35, item 214).

[9] The regulations of the Paris Convention that remain valid to this day include the provisions of Article 19, according to which "Every aircraft engaged in international navigation shall be provided with: (a) A certificate of registration in accordance with Annex A; (b) A certificate of airworthiness in accordance with Annex B; (c) Certificates and licenses of the commanding officer, pilots and crew in accordance with Annex E; (d) If it carries passengers, a list of their names; (e) If it carries freight, bills of lading and manifest; (f) Log books in accordance with Annex C; (g) If equipped with wireless, the special licenses prescribed by Article 14".

providing for the right of irregular overflight for civilian vessels. Prior authorization is required for the overflight of a state-owned, military, customs or police vessel.

In Article 8, the Chicago Convention introduced the concept of "pilotless aircraft". According to the definition, an aircraft capable of flying without a pilot may fly over the territory of a contracting state without a pilot only with special authorization from that state and in accordance with the terms of such authorization. Each state undertakes to ensure control of the flight of pilotless aircraft in areas open to civil aircraft in such a way as to prevent danger to civil aircraft. It should therefore be presumed that pilotless aircraft were one form of unmanned aircraft and as such were included in the 1944 solutions. The Chicago Convention allows states to create, for safety or strategic reasons, zones in which flights are prohibited, restricted or even banned. Importantly, aircraft are required to comply with domestic legislation, which in turn must comply with the Convention provisions.

In the case of Poland, the situation is different. The basic document regulating relations in the use of airspace is the Act of 3 July 2002 – Aviation Law.[10] The provisions of the Aviation Law apply to Polish civil aviation as well as to foreign civil aviation. According to Article 2, aircraft is a device capable of floating in the atmosphere due to the action of air other than the action of air reflected from the ground. Under the current Aviation Law, there is no legal definition of unmanned aircraft or pilotless aircraft of a general nature. This assertion is also supported by the content of the regulations relating to specific arrangements with regard to the powers of pilots. The cited law, in Article 94, contains the conditions to be met by individuals to perform flights and other aviation-related activities. A specific requirement is the requirement to hold a license, which is a certificate confirming the possession of certain qualifications and proof of authorization to perform certain aviation-related activities. Article 94 (6) does not include a license for individuals who may be an operator of an unmanned aircraft. A peculiar solution is the possibility of applying the regulation of Article 94 (8) according to which the minister competent for transport matters may, by means of the regulation referred to in Article 104, introduce a requirement for a license or certificate of qualification, taking into account the relevant international regulations, if justified by aviation safety considerations. Such a solution is correct and is directly justified by the content of Article 3 of the Aviation Law. In light of the cited provision, the provisions of the Aviation Law shall apply to legal relations in the field of civil aviation, unless ratified international agreements binding the Republic of Poland provide otherwise.[11] In order to increase the safety and efficiency of civil aviation operations, the

[10] Consolidated text, Journal of Laws 2023, item 2110.

[11] See W. Konaszczuk, M. Tokarski, *Bezpieczeństwo załóg i pasażerów statków powietrznych w świetle standardów Konwencji o Międzynarodowym Lotnictwie Cywilnym w polskim prawie lotniczym*, "Przegląd Bezpieczeństwa Wewnętrznego" 2014, vol. 6(10).

minister competent for transport matters may, by regulation, introduce international requirements of a specialized nature, including aviation safety.

Technological development has also forced changes in Polish legislation. Until 2011, the Aviation Law did not provide for, and in fact prohibited, the flight of unmanned aircraft in controlled airspace. The exception for flight under Article 126 was to obtain permission from the President of the Civil Aviation Authority (Pol. Urząd Lotnictwa Cywilnego). The change came only in 2011. Based on it, Article 126 was amended by Article 1 (79) of the Act of 30 June 2011 amending the Aviation Law and certain other acts.[12] In light of the introduced solutions, Polish airspace was made available for unmanned aircraft flights. The conditions for the performance of flights by this type of aircraft were specified. Pursuant to Article 126 (2) to (5), an unmanned aircraft must be equipped with the same flight, navigation and communication equipment as a manned aircraft performing a flight (visual flight rules, VFR) or flight in a specific class of airspace (instrumental flight rules, IFR). The derogations applicable in this regard for manned aircraft apply equally to UAVs. Flights of unmanned aircraft may be carried out on the basis of the flight plan submitted. The Minister in charge of transport in consultation with the Minister of National Defence may determine, by way of a regulation, the detailed manner and conditions for the performance of flights by unmanned aircraft in the Polish airspace.[13]

The introduction of a legal mechanism by defining the conditions for the performance of flight by an unmanned aircraft without introducing its definition should be described negatively. This assertion is even more justified if one takes into account the high level of legislative solutions in other countries that are parties to the Chicago Convention.

The lack of legal definitions on the ground of law, by its very nature, indicates the need to resort to empirical sciences and disciplines. Reference should first be made to military and technical sciences.

First of all, it is necessary to point out the definition by M. Adamski and J. Rajchel, popular in the Polish nomenclature, according to which a UAV is an unmanned, motor-driven reusable aircraft, controlled remotely, automatically or by a method that is a combination of these methods, designed to carry various types of equipment and payloads, making it capable of performing operational tasks. Due to the structural arrangement, UAVs are divided into aircraft, helicopters,

[12] Journal of Laws 2011, no. 170, item 1015.

[13] An interesting point of view on this matter is presented in the article on the cooperation between particular authorities in the Republic of Poland. See M. Czuryk, *Właściwość Ministra Spraw Wewnętrznych oraz Ministra Obrony Narodowej w dziedzinie bezpieczeństwa publicznego*, [in:] *Prawo bezpieczeństwa publicznego*, eds. M. Karpiuk, K. Walczuk, Warszawa 2013, p. 63 ff. See also M. Karpiuk, *The Provision of Safety in Water Areas: Legal Issues*, "Studia Iuridica Lublinensia" 2022, vol. 31(1), pp. 79–92.

missiles, hybrids.[14] To date, this is one of the most popular definitions in military science used in Poland.

However, it seems appropriate, given the aim of the study, to cite the definitions that have developed on the basis of regulations in other countries belonging to both the family of regulations of continental law and common-law systems.

As regards the US, it is important to point out that there is a clear division between the definitions of UAVs in the civilian sphere and in the military sphere. Civilian aviation agencies in the US are represented by the Federal Aviation Administration and the National Air and Space Administration. Based on the definition developed by these agencies, UAV means remotely piloted aircraft[15] or unmanned aircraft (UA). However, the definition currently in use refers to the device as unmanned aerial systems (UAS).[16]

In the case of non-civilian definitions (military, government, homeland security) the turning point in the history of their development in the US was the events of the Gulf War.[17] Until the conflict began in 1991, the devices were referred to as drones or UAVs. Due to the use of drones in the conflict, even after the conflict ended, it was accepted in the US literature that the most appropriate term to describe the

[14] M. Adamski, J. Rajchel, *Bezzałogowe statki powietrzne. Charakterystyka i wykorzystanie*, Dęblin 2013, p. 15.

[15] Federal Aviation Administration Memorandum, Unmanned Aircraft Systems Operations in the U.S. National Air Space System – Interim Operational Guidance, 16.9.2015, AFS-400 UAS Policy 05-01.

[16] This definition is currently used by the Federal Aviation Administration. For more details, see L.R. Newcome, *Unmanned Aviation: A Brief History of Unmanned Aerial Vehicles*, 1.1.2004, https://arc.aiaa.org/doi/book/10.2514/4.868894 (access: 17.5.2024).

[17] The Gulf War of 1990–1991 was an armed conflict between Iraq and a coalition of 42 countries led by the United States. The allied operations against Iraq were conducted as part of two key phases: Operation Desert Shield, which involved the buildup of military forces from August 1990 to January 1991, and Operation Desert Storm, which began with an aerial bombing campaign against Iraq on 17 January 1991 and ended with the liberation of Kuwait by the US troops on 28 February 1991. On 2 August 1990, Iraq invaded neighbouring Kuwait and completely took control of the country within two days. Kuwait's repayment demands were coupled with a surge in oil production levels, which kept Iraq's revenues low and further weakened its economic prospects; for much of the 1980s, Kuwait's oil production exceeded its OPEC mandatory quota, which kept international oil prices at low levels. Iraq interpreted Kuwait's refusal to reduce its oil production as an act of hostility against the Iraqi economy, which led to Iraq's military action. The invasion of Kuwait immediately caused international condemnation, including in United Nations Security Council Resolution 660 (UNSCR), and imposing economic sanctions on Iraq by the Security Council in Resolution 661. The United Nations Security Council Resolution 678, adopted on 29 November 1990, offered Iraq one last chance until 15 January 1991 to implement Resolution 660 and withdraw from Kuwait; it also authorized states to use after the deadline "all necessary means" to force Iraq out of Kuwait. This conflict, as part of a trade war for world oil market dominance, triggered subsequent perturbations of a geopolitical nature that culminated during the "Arab Spring". For more details, see W. Konaszczuk, *Prawnomiędzynarodowe aspekty obrotu ropą na świecie*, Lublin 2017, pp. 140–180.

required devices would be UAV.[18] The same is applied in European countries both within civil and non-civil aviation to describe flying unmanned devices. However, it is worth noting some inconsistencies in this regard. The internal inconsistency of the UAV definition is related to the use of the term "vehicle" in English. Regardless of the source of the translation, "vehicle" is used to refer to a motor vehicle, a means of transportation, a horse-drawn vehicle. When using the supranational linguistic substrate on which the Chicago Convention is based, the use of the term UAV for drones is problematic, to say the least. There is no definition of the term "vehicle" in the Convention itself, while all contractual elements refer exclusively to aircraft. Thus, there is no logical connection between the terms "vehicle" and "aircraft". A similar situation applies to the term "drone", characteristic of the period following 1991. The term "drone" is also used to describe unmanned vessels (ships). In this sense, the use of the term "vehicle" in the common law system gives rise to the exclusion of UAVs from the aviation regulation by the Federal Aviation Administration. Similar definitional concerns have also arisen under UK regulation. However, the difference from Federal Aviation Administration regulation is that in this regard the UK Civil Aviation Authority has provided a definition. Based on it, "unmanned aircraft means any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board".[19]

In this sense, it should also be pointed out that Polish military definitions, contrary to what one would expect, are not consistent in nature. As indicated above, UAVs also include missiles. This is quite questionable, problematic and misleading. Such a thesis is supported by the US Department of Defense guidelines on UAVs. According to them, UAVs are used to carry missiles and explosive charges. They use the takeoff and return function in operations and have the feature of multiple use. These features are not possessed by remotely piloted missiles. The guidelines also provide a military definition of UAV as powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable and can carry a lethal or non-lethal payload. Ballistic or semi-ballistic vehicles, cruise missiles and artillery projectiles are not considered UAVs.[20]

Within the matter concerned, it seems appropriate to derive a general definition of unmanned aerial device (UAD). A UAD is an aircraft, with no natural persons

[18] For more details, see M.T. DeGarmo, *Issues Concerning Integration of Unmanned Aerial Vehicles in Civil Airspace*, November 2004, https://www.mitre.org/sites/default/files/pdf/04_1232.pdf (access: 17.5.2024).

[19] UK Civil Aviation Authority, *CAP 722-Unmanned Aerial Vehicle Operations in UK Airspace – Guidance*, 16.4.2024, https://www.caa.co.uk/publication/download/21784 (access: 28.5.2024), p. 11.

[20] Office of the Secretary of Defense, *Unmanned Aerial Vehicles Roadmap 2002–2027*, December 2002, https://www.govinfo.gov/content/pkg/GOVPUB-D-PURL-LPS28760/pdf/GOVPUB-D-PURL-LPS28760.pdf (access: 28.5.2024).

on board directly managing it, maintained in airspace by natural forces, guided remotely by a pilot or autonomously from a distance, capable of carrying lethal or non-lethal payloads.

LEGAL PROBLEMS OF THE USE OF COMBAT DRONES

1. International level

The use of UAVs of a civilian nature does not pose such legal problems as the use of UAVs of a combat nature. It should be pointed out that the use of the term of a combat nature involves the use of a UAV capable of carrying lethal payloads. The use of a civilian-purpose UAV, which carries payloads of a lethal nature should be classified as the use of a non-civilian nature, i.e. the combat use. This argument is consistent with the definition presented above. It is important to take into account the combat payloads carried by the UAV, which will determine the exclusion of the UAV from civilian jurisdiction and subject it to military jurisdiction. In the context of military jurisdiction, it is necessary to point out that it is subject to the domestic law of the state or, most often, to the jurisdiction of the North Atlantic Alliance (NATO).

In this regard, the classification of means of warfare according to NATO criteria becomes indispensable. Means of warfare are means that can be used in combat, against targets in air, sea and land domains.[21] The most important categories include categories A, B, C and D.[22] A common feature of means of warfare of NATO countries is the interchangeability of means of warfare.[23] The need to use means of warfare of a NATO partner state, the use of its airfields, has been confirmed in the framework of allied assistance to a third country, i.e. Ukraine, from 2022 to the present. The thesis of the interchangeability of means of warfare is therefore as accurate as possible.

Undoubtedly, the combat use of UAVs refers to the state of armed conflict, use of force, taking armed action or war. The use of these terms today may create some methodological confusion. Therefore, it is important to refer to the basic documents of international law in this regard. In security or legal sciences, one can notice the gradual replacement of the concept of war with the concept of armed conflict. Thus,

[21] For more details on targets and conventional methods in military operations, see W. Konaszczuk, *op. cit*., pp. 330–400.

[22] Category A means unrestricted use, category B – restricted use, category C – priority use, and category D – combat assets that need to be tested.

[23] For more details, see J. Figurski, P. Fonrobert, A. Ignaciuk, A. Pakuła, *Klasyfikacja środków bojowych*, Warszawa 2013.

the law of war is being replaced by the law of armed conflict. An even broader concept is the use of force, which is used by the United Nations Charter.[24] Also, the UN Charter uses the concept of armed action. Armed action can be taken by the UN Security Council under Article 42 of the Charter.[25] In turn, a detailed and relevant source in the analysis of the subject will be the four Geneva Conventions of 1949, which include: I Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Active Armies, II Geneva Convention for the Amelioration of the Condition of the Wounded, Sick and Shipwrecked Armed Forces at Sea, III Geneva Convention Relative to the Treatment of Prisoners of War, IV Geneva Convention Relative to the Protection of Civilian Persons in Time of War.[26]

To date, the Conventions on the Protection of Victims of War are the most important sources of international law in the context of armed conflict, constituting the element of reference in the case of the law of armed conflict. They have been enriched in later years by additional protocols. The most important of these are the Additional Protocols on the Protection of Victims of International Armed Conflicts (hereinafter: Protocol I) and on the Protection of Victims of Non-International Armed Conflicts, drawn up in Geneva on 8 June 1977. The 1949 Conventions were also later enriched by the Additional Protocol to the Geneva Conventions of 12 August 1949 relating to the Adoption of an Additional Distinctive Emblem, adopted in Geneva on 8 December 2005 (hereinafter: Protocol III). In the first place, it seems reasonable to point out that the changes contained in Protocols I and III related to the need to adapt the legal layer to changing technological, social and, above all, geopolitical conditions. Article 35 of Protocol I quite significantly changed the conditions of warfare. It introduced fundamental principles, including those relating to UAVs according to which in an armed conflict the right of the parties to the conflict to choose the methods and means of warfare is not unlimited. Secondly, the use of weapons, missiles and materials, as well as methods of warfare that may cause unnecessary and unwarranted physical and mental suffering is prohibited. In addition, the use of methods and means of warfare whose purpose is to cause extensive, long-term and serious damage to the environment, or which can be expected to cause such damage, is prohibited.

[24] Charter of the United Nations and Statute of the International Court of Justice, San Francisco 1945.

[25] "Should the Security Council consider that measures provided for in Article 41 would be inadequate or have proved to be inadequate, it may take such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security. Such action may include demonstrations, blockade, and other operations by air, sea, or land forces of Members of the United Nations".

[26] See Geneva Conventions of 1949, Additional Protocols and Their Commentaries, available at https://ihl-databases.icrc.org/en/ihl-treaties/geneva-conventions-1949additional-protocols-and-their-commentaries (access: 28.5.2024).

The above was complemented by introducing a solution in Article 36, according to which, when conducting research, development, acquisition or introduction of a new weapon, new means or method of warfare, a contracting party is obliged to determine whether their use would be prohibited in certain or all circumstances by the provisions of this Protocol or by any other provision of international law pertaining to that contracting party. The rule requires parties using UAVs to determine the scope of impact of such weapons. This article is supplemented by a rule included among the fundamental principles contained in the body of Article 48 of Protocol I. According to its contents, in order to ensure respect for and protection of civilians and assets of a civilian nature, parties to the conflict should always distinguish civilians from combatants and assets of a civilian nature from military targets, and therefore conduct their operations only against military targets. Thus, an overarching principle has been introduced according to which the use of UAVs is possible only against military targets. Thus, it is forbidden under the international agreement to use UAVs against civilian targets.[27]

2. European Union level

In the European Union, which is an organization of an international nature,[28] the situation is currently quite ambiguous and complicated from the point of view of the regulation of the status of UAVs. Undoubtedly, the starting point in this matter are the regulations of the European Aviation Safety Agency, which is among the agencies that are part of the EU, tasked with aviation safety on the territory of member states. The agency, which has legal personality, operates under Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No. 2111/2005, (EC) No. 1008/2008, (EU) No. 996/2010, (EU) No. 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No. 552/2004 and (EC) No. 216/2008 of the European Parliament

[27] It should be pointed out here that the current practice has also developed the concept of Lethal Autonomous Weapons System (LAWS). The distinctive feature of LAWS as compared with UAV is, first, its single-use nature, and, second, the lack of control by the operator after take-off. It is appropriate to refer to the definition of the US Department of Defense, according to which "LAWS are systems that, once activated, can select and engage targets without further intervention by a human operator". For more details, see Department of Defense Directive No. 3000.09 of 21 November 2012 – Autonomy in Weapons Systems.

[28] Under the Treaty of Lisbon, which entered into force on 1 December 2009, the European Union has acquired legal personality on the basis of added Article 45a, as well as the power to conclude international agreements by means of amended Article 48. For more details, see Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, signed at Lisbon, 13 December 2007 (OJ C 306/1, 17.12.2007).

and of the Council and Council Regulation (EEC) No. 3922/91.[29] Its Preamble states that "unmanned aircraft also operate within the airspace alongside manned aircraft, this Regulation should cover unmanned aircraft, regardless of their operating mass. Technologies for unmanned aircraft now make possible a wide range of operations and those operations should be subject to rules that are proportionate to the risk of the particular operation or type of operations". At the same time, the concept of UAV was introduced, which is any aircraft that performs an operation or is intended to perform an operation autonomously or be flown remotely without a pilot on board. Section VII introduces requirements relating to unmanned aircraft. They should meet the requirements provided for in Articles 55–58, which specifically refer to implementing acts. As of now, most of the implementing acts in this regard have not been adopted, therefore internal regulations are still in force. The key problematic issue relates to the answer to the question of the use of drones for military purposes. The document does not provide an answer to this question.

USE OF COMBAT UNMANNED AERIAL VEHICLES IN THE PRACTICE OF COUNTRIES

1. Japan

Japan is among those countries that have taken an interest in the development of combat UAVs since the end of World War II. The leading research centre since the 1970s has been Fuji Heavy Industries. It designed the first UAV helicopter called the Kaman Drone, which is fully operated remotely. Production continued uninterrupted until the 1990s. Currently, the country has about 2,000 remote helicopters in government stock. It is difficult to identify what portion has a military purpose, as all UAVs can carry payloads of a combat nature.[30]

2. Israel

Israel has developed its military-related programs, including UAVs for internal security purposes, since the very beginning of the state in 1948. In the late 1970s, and early 1980s, complex research programmes were launched within the Israeli Defence Forces. Israel first used combat UAVs during operations in Lebanon in

[29] OJ L 212/1, 22.8.2018.

[30] UVS International, *Commercial Use of UAVs – Widespread in Japan*, [in:] *2004 Yearbook: UAVs Global Perspective 138*, Paris 2004.

1982.[31] Israeli companies such as Israel Aerospace Industries, Elbit Systems and Rafael Advanced Defence Systems played a key role in developing UAV capabilities. Israel has developed a range of UAVs for various purposes, including surveillance, reconnaissance, intelligence gathering, target acquisition and strike capabilities. Some notable UAV models include the Heron, Hermes, Skylark and the armed Harop UAV. Israel has also developed armed UAVs capable of carrying and launching precision guided munitions. The Harop UAV, e.g., can be used both for surveillance and as a weapon to attack and destroy targets. The success of Israeli UAVs is considered to be a result of their reliability, advanced technology and operational experience.

3. People's Republic of China

China has been researching the development of UAVs for many years, but due to the secrecy maintained in this area, the historical element is unclear. Currently, China has made progress in the development and deployment of military UAVs in various categories, including reconnaissance, surveillance, combat and logistics. Notable models include the CH-4 and CH-5 series, which are capable of combat operations. China is working on developing unmanned stealth aircraft, such as the Tian Ying (Sky Hawk) series. These UAVs have a reduced radar cross-section, which increases their ability to operate in contested environments without the possibility of easy detection. This is the first time China has employed swarm technology in combat drones, which means the swarm operates in a coordinated manner. The technology can be used for a variety of purposes, including surveillance, reconnaissance and combat operations.

4. Iran

The first overt references to Iran's attempts to design and build UAVs date back to the early 1980s and were related to the Iran-Iraq conflict. Iran acquired its first combat-ready models from foreign examples that had been shot down or crashed on Iranian territory. In this way, UAVs of Israeli manufacture were acquired. The 1990s saw the development of the Shahed 129. In 2010, Shahed 171 was introduced, which is an armed drone designed for combat tasks. It was displayed in various military exercises, demonstrating Iran's progress in its UAV competence. Iran has been working to improve the range and endurance of its UAVs. Long-range UAVs, such as the Ababil series, have been developed to enhance surveillance and reconnaissance capabilities. Iran recognizes the strategic importance of UAVs for

[31] E. Bone, C. Bolkcom, *Unmanned Aerial Vehicles: Background and Issues for Congress*, 25.4.2023, https://apps.dtic.mil/sti/pdfs/ADA467807.pdf (access: 17.5.2024).

intelligence, surveillance and reconnaissance purposes. The country continues to invest in research and development to enhance its UAV capabilities to meet both military and security needs.

LEGAL PROBLEMS RELATED TO THE USE OF UNMANNED AERIAL VEHICLES IN THE PRACTICE OF STATES – THE EXAMPLE OF THE USA

The thesis presented in the introduction, referring to the inadequacy of the normative layer, especially in international law, to technological development is most correct. It seems to be even more clear if one takes into account the practice of the use of UAVs by the US. On 18 September 2001, the joint session of the US Congress adopted a joint resolution on the use of the US Armed Forces against entities, organizations responsible for the September 11 attacks. The document was adopted under the title "Authorization for Use of Military Force".[32] Under current law, the US President may decide to use the US Armed Forces outside the country to eliminate terrorist targets, individuals and organizations.[33] The resolution later became the basis for the creation of a special programme called the "CIA UAV's Targeted Killing Program". Based on the available information in 2004, the CIA was fully prepared to use UAVs outside the US, and it did.[34] This included the use of targeted killing against facilities and individuals within Pakistan and Afghanistan.[35] As a result of the use of US-owned combat UAVs[36] from 2004 through 2011, between 550 and 850 terrorists were eliminated on the territory of Pakistan and Afghanistan.[37] In 2008, Predators carried out 39 strikes, while in 2009

[32] Public Law 107-40 – Authorization for Use of Military Force, 18.9.2001, US 115 Stat. 224 and 225.

[33] Section 2 (a): "That the President is authorized to use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001, or harbored such organizations or persons, in order to prevent any future acts of international terrorism against the United States by such nations, organizations or persons".

[34] M. Mazzetti, E. Schmitt, *C.I.A. Missile Strike May Have Killed Pakistan's Taliban Leader, Officials Say*, "New York Times", 7.8.2009.

[35] The territory of Pakistan has covered the so-called FATA (Pakistan's Federally Administrated Tribal Area).

[36] In order to carry out the tasks, UAV Predators were used, also referred to as MQ-1, employed in Iraq and Afghanistan both during wartime and peacetime. For more details, see Defense Update, *RQ-1A/MQ-1 Predator UAV*, 1.6.2005, http://defense-update.com/products/p/predator.htm (access: 1.12.2023).

[37] D. Donaldson, *The Lawfulness of US Drone Strikes in Pakistan: An International Perspective*, June 2012, https://apps.dtic.mil/sti/tr/pdf/AD1019699.pdf (access: 17.5.2024), pp. 3–5.

the figure amounted to 53. The secret operation of the US services could not escape the attention of the media both in the US and abroad. In March 2010, CIA Director L. Panetta stated that "the CIA has engaged in the most aggressive operation outside the country's borders in history".[38] Undoubtedly, such activities of the CIA, which have lost secrecy and become public, have been subjected to evaluation by both the public and experts in the field of internal and international security.[39] It became clear that US actions in the form of using combat UAVs on Pakistani and Afghan territory had no justification in the law of armed conflict violating the territory of sovereign states without their consent. According to G. Solis, retired head of the Law of War Department at West Point University, the US use of Predators violated international law, the law of war, and was in opposition to the customs of war.[40] In a later assessment of the program to use UAVs by members of the US administration, the program was a failure. Such an assessment was also expressed in March 2010 by H.H. Koh, an advisor to the US State Department, who stated that "it is the considered view of this Administration that U.S. targeting practices, including lethal operations conducted with the use of UAVs, comply with all applicable law, including the laws of war".[41]

THE MULTIFACETED NATURE OF MEDICAL PROBLEMS ASSOCIATED WITH THE USE OF UNMANNED AERIAL VEHICLES

The use of drones against human targets can take the form of using UAVs with a rigidly attached explosive charge or dropping an explosive charge (projectile) by releasing them from the hardpoints of the device. For injury-causing effect, the results of using these will be similar. It should be noted that injuries caused by the use of UAVs have a high fatality rate. Depending on the amount and type of explosive used (missile, bomb, UAV with a projectile), their use can cause multi-organ injuries including open and closed fractures, burns of all degrees, fragmentary penetrating wounds. Unmanned aerial vehicles are classified as lethal combat devices. The most common drone-related injuries are amputations of both lower

[38] See J. Warrick, P. Finn, *CIA Directors Secret Attacks in Pakistan Have Hobbled al-Qaeda*, "Washington Post", 18.3.2010.

[39] For more details in the context of operations of special forces in the Republic of Poland, see M. Karpiuk, *Zakres działania służb specjalnych*, [in:] M. Bożek, M. Czuryk, M. Karpiuk, J. Kostrubiec, *Służby specjalne w strukturze władz publicznych. Zagadnienia prawnoustrojowe*, Warszawa 2014, pp. 62–104.

[40] G. Solis, *CIA Drone Attacks Produce America's Own Unlawful Combatants*, "Washington Post", 12.3.2010.

[41] H.H. Koh, *The Obama Administration and International Law*, 25.3.2010, https://2009-2017.state.gov/s/l/releases/remarks/139119.htm (access: 17.5.2024).

and upper limbs, loss of one or both eyeballs, third- and fourth-degree burns, lower abdominal, torso and facial injuries.[42] The most common and widespread injuries are recorded when UAVs use explosives with weight ranging from 150 to 300 grams. In these cases, the most common injuries include amputations of limbs (shrapnel), damage to the abdomen and chest. The main cause of these injuries is the shock wave affecting the human body. The kinetic energy causes tearing of human tissues and bone fractures.[43] In cases of the use of loads larger than 300 grams, there are additionally compression fractures of the spine, pelvis and multi-organ injuries. Eardrum ruptures and burns are also very common. As practice indicates, blunt trauma and multi-organ injuries leading to fatal effect are also among the common ones. Victims of UAVs, both soldiers and civilians, very often suffer complications in the form of various soft tissue infections.[44]

CONCLUSIONS

The rapid development of aeronautical engineering technology in recent years has not been parallel to the adaptation of laws to it, whether in national, EU or international areas. The use of UAVs has gotten out of hand mainly at the international and EU levels. The specific risks associated with the use of UAVs relate to: (a) violations of the norms of the law of armed conflicts; (b) violations of the sovereignty of states, particularly their territories; (c) violations of the right to a court; (d) violations of human rights of all generations; (e) the consequences of the lack of regulation at the aforementioned levels are physical injury, problems of long-term treatment of patients, rehabilitation and deaths due to combat operations of UAVs. This catalogue is not closed. The following postulates should be formulated: (a) at the international level, a uniform definition of UAV should be adopted, binding on UN member states; (b) identifying a supranational entity responsible for exercising control over UAVs, as the current one, i.e. International Civil Aviation Organization, does not play this role; (c) making the approval of

[42] Since the beginning of the Russian hostilities in Ukraine, the number of limb amputations has approached 70,000. This figure is similar to the number of amputations during World War I. It is not known what proportion of wounded 200,000 people in Ukraine are due to combat drones. For more details, see Rzeczpospolita, *Liczba amputacji na Ukrainie zbliża się do poziomu z I wojny światowej*, 2.8.2023, https://www.rp.pl/konflikty-zbrojne/art38893051-liczba-amputacji-na-ukrainie--zbliza-sie-do-poziomu-z-i-wojny-swiatowej#:~:text=powa%C5%BCnie%20rannych%20na%20Ukrainie,w%20przypadku%20oko%C5%82o%2010%20proc (access: 17.5.2024).

[43] M. Jojczuk, A. Nogalski, P. Krakowski, A. Prystupa, *Mortality Prediction by 'Life Threat Index' Compared to Widely Used Trauma Scoring Systems*, "Annals of Agricultural Environmental Medicine" 2022, vol. 29(2), pp. 258–263.

[44] For more details on this issue, see A. Nogalski (ed.), *Interdyscyplinarne problemy medyczne u pacjentów leczonych z powodu następstw urazów*, Lublin 2014, pp. 120–145.

the use of UAVs on the territory of another state subject to the approval of the UN Security Council; (d) at a further date, drafting a regulation of a convention nature dedicated to the issue of UAVs; (e) obliging the WHO to regulate the problem of injuries caused by combat UAVs.

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ABSTRAKT

Pandemia COVID-19 doprowadziła w pierwszej kolejności do ograniczenia kontaktów międzyludzkich oraz przeniesienia wielu elementów życia do cyberprzestrzeni, wywołując gwałtowny rozwój sektora informatycznego na świecie oraz nowych technologii w inżynierii, wykorzystujących rozwiązania informatyczne. Negatywnym, globalnym zjawiskiem stało się załamanie gospodarki światowej, a co za tym idzie wzrost napięć. W 2022 r. doszło do wybuchu największego od czasów II wojny światowej w historii Europy konfliktu zbrojnego, wywołanego działaniami Federacji Rosyjskiej. Przedmiotowy artykuł ma charakter koncepcyjny, a podstawowy problem badawczy odnosi się do określenia dostosowania regulacji prawnych na poziomie wewnętrznym i międzynarodowym w zakresie wykorzystania dronów bojowych. Zasadnicza teza ma potwierdzić założenie o niedostosowaniu systemów prawnych państw i organizacji wobec użycia dronów bojowych. Teza ta zostaje potwierdzona także poprzez określenie medycznych skutków w przypadku użycia tych urządzeń. Celem jest przedstawienie rozwiązań prawnych, których wprowadzenie miałoby chronić życie i zdrowie osób. Wartość poznawcza dla praktyki wiąże się z ujednoliceniem siatki pojęciowej oraz ukierunkowaniem na normy ponadnarodowe, które mogą być wykorzystywane w dziedzinie zarówno prawa, jak i medycyny. Z założenia artykuł ma zasięg międzynarodowy ze względu na omawiane problemy.

Słowa kluczowe: regulacje prawne; wykorzystanie dronów bojowych; bezzałogowe statki powietrzne; pomoc medyczna; konflikt zbrojny